

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

Laboratory:	Document Type:	Original Date Adopted:	Previous Document:
Lab Admin	Policy / Procedure	09/12/2003	ADMIN-91 Revision 14

Document Author:	Document Owner:	Acknowledgement / Required Copy Holders*:
Nicole Treadway	Sandra VanVranken	All laboratory testing personnel, and other deemed applicable staff members and faculty

Approval*:
<p>Laboratory Administrative Division Director</p> <p>Laboratory Medical Directors OSUWMC Clinical Laboratory Medical Director, OSUWMC East Hospital Laboratory Medical Director, Morehouse Laboratory Medical Director, Spielman Laboratory Medical Director, Outpatient Care East Laboratory Medical Director, Outpatient Care Lewis Center Laboratory Medical Director, Outpatient Care Gahanna Laboratory Medical Director, James Molecular Laboratory Medical Director, Ackerman Laboratory Medical Director Histology LLC Medical Directors at Doan, East, Morehouse and Chambers Road</p>

Approval and Acknowledgements
<p>Refer to QPulse system and Document Details report for laboratory directors(s)' electronic signature approval, employee acknowledgment and effective date.</p>

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

1. POLICY

- 1.1. Clinical laboratory testing and/or anatomic pathology examination will be performed at the written or electronic order of a physician or authorized provider only.
- 1.2. All specimens submitted to the laboratories must have complete and legible patient identification on the specimen container(s), whether primary or an aliquot.
- 1.3. Specimen collection procedures and phlebotomy practices are designed to provide the minimum blood collection volumes required for testing to prevent blood losses from phlebotomy, particularly in pediatric patients and those with frequent venipunctures. Adverse consequences of excess venipunctures include complications during collection for patients and health-care workers, hazards from subsequent transfusions, contending with increased amounts of hazardous waste, and greater cost. Suggested solutions include carefully considering the need for laboratory tests, avoiding unnecessary repetition of tests, and minimizing use of standing orders.
- 1.4. *The Laboratory Guide to Services: Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection* policy will be provided to all medical center staff and laboratory clients. This document is available on [OneSource](#) and [Policy Tech](#).

2. PURPOSE OF DOCUMENT

- 2.1. This document is to provide a written policy for the acceptable standards of requisitions/order entry, specimen collection and identification for clinical and anatomic pathology testing within OSUWMC Laboratories.

3. SCOPE OF DOCUMENT

- 3.1. This document applies to all areas and all personnel that are responsible for the collection and identification of patient specimens within OSUWMC and any and all outside clients that utilize OSUWMC Laboratories for patient testing.

4. RESPONSIBILITY

- 4.1. The Medical Director of the Clinical Laboratories is responsible for establishing the *Laboratory Guide to Services: Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection* procedure. Laboratory Compliance is responsible for maintaining the document and ensuring at least biennial review.

5. PROCEDURE CONTENTS

- 5.1. [Requisition Requirements](#)
- 5.2. [Specimen Containers](#)
- 5.3. [Transportation of Laboratory Specimens and PTS Guidelines](#)
- 5.4. [Specimen Labeling and Identification](#)
 - 5.4.1. [General Specimens](#)
 - 5.4.2. [Pathology and Cytology Specimens](#)
- 5.5. [Identification Issues and Corrective Actions](#)
 - 5.5.1. [Suboptimal Specimens](#)
 - 5.5.2. [Specimens sent to Lab with Attached Needles](#)
 - 5.5.3. [Unable to Perform Notification](#)
 - 5.5.4. [Irretrievable Specimens](#)
 - 5.5.5. [Lab Release](#)
- 5.6. [List of Blood Collection Tubes](#)

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

- 5.7. [Order of Draw](#)
- 5.8. [Specimen Collection Procedures](#)
 - 5.8.1. [Venipuncture](#)
 - 5.8.2. [Arterial/Line Draw Specimens](#)
 - 5.8.3. [Indwelling Catheters, Heparin or Saline Locks, VAD](#)
 - 5.8.4. [Capillary Skin Puncture](#)
 - 5.8.5. [Blood Culture Specimens](#)
 - 5.8.6. [Microbiology Specimens](#)
 - a. [Neisseria gonorrhoea/Chlamydia trachomatis](#) by Amplified detection
 - b. [Tzanck Prep](#) (Herpes and/or Varicella Zoster)
 - c. [Affirm Collection](#)
 - 5.8.7. [Midstream, Clean Catch Urine](#)
 - 5.8.8. [Random Urine Collection](#)
 - 5.8.9. [24 Hour / Timed Urine Collection](#)
 - 5.8.10. [Collection of Fluids](#)
 - 5.8.11. [Collection of Specimens for Fecal Occult Blood Testing](#)
 - 5.8.12. [Collection of Specimens for Toxicology](#)
 - 5.8.13. [Collection of Specimens for Anticoagulant Therapy](#)
 - 5.8.14. [Collection and Processing of Non-Human Specimens](#)
- 5.9. [Requests for Pathology or Cytology Examination](#)

6. REQUISITION REQUIREMENTS

- 6.1. A written or electronic request form must accompany every specimen and the identification information on the specimen and requisition must be identical. The requisition form *must* contain **all** of the following information:
 - 6.1.1. Patient's legal name
 - 6.1.2. Unique identification number
 - 6.1.3. Date of birth
 - 6.1.4. Location
 - 6.1.5. Ordering physician / provider name and **signature required** (electronic signature acceptable)
 - 6.1.6. Attending physician name (if different from ordering physician)
 - 6.1.7. For **non-OSU** providers also: **Provider NPI number**
 - 6.1.8. Service(s) requested
 - 6.1.9. **NOTE: For outpatients** - diagnosis (ICD10) code for clinical indications for examination request; i.e. signs, symptoms, diagnosis
- 6.2. Tests requiring paper requisitions in addition or in lieu of electronic requisitions:
 - 6.2.1. Microbiology
 - a. Environmental Water Testing
 - b. All OR specimens (In accordance to the task force created in 2013)
 - 6.2.2. Surgical Pathology specimens (including limb disposition form and frozen section form)
 - 6.2.3. Cytology specimens
 - 6.2.4. RSA (Request for Sendout) specimens
 - 6.2.5. Toxicology Chain of Custody forms

7. SPECIMEN CONTAINERS

- 7.1. In accordance with OSHA safety regulations, all primary specimen containers must be leak proof and placed in a secondary leak proof container for transport to the laboratory. Securely sealed biohazard specimen transport bags are used for this purpose. Requisition forms are to be placed in the *outer* pocket / document pouch.

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

- 7.2. Temperature and humidity (as applicable) for blood collection supplies are monitored throughout the Medical Center by the Delta Monitoring System. Records are sent to the Point of Care Department and maintained by Point of Care (L:\Shared\Pathology\POC\Temperature Logs\Delta Monitoring System).

8. TRANSPORTATION OF LABORATORY SPECIMENS

- 8.1. All laboratory specimens should be transported to the laboratory as quickly as possible and specific temperature and special collection requirements must be maintained throughout transportation.
- 8.2. Due to time sensitivity and/or temperature stability, the following laboratory tests can only be collected at one of the following Outpatient Service Center locations.

Richard M. Ross Heart Hospital	Stefanie Spielman Comprehensive Cancer Center	Martha Morehouse Pavilion	Martha Morehouse Tower	Outpatient Care Upper Arlington	Outpatient Care East
ACTH Ammonia Carboxyhemoglobin Cryoglobulin Cryofibrinogen Gastrin Lactate Methemoglobin Oxalate Platelet Aggregation Platelet Function Pyruvic Acid Somatostatin	ACTH Gastrin	Ammonia Lactate	ACTH Ammonia Gastrin Lactate Oxalate Platelet Function Pyruvic Acid Somatostatin	ACTH Gastrin	ACTH Ammonia Gastrin

- 8.3. For applicable inpatient testing, the specimens should be delivered to the laboratory using the pneumatic tube system (PTS) or employee deliveries.
- 8.3.1. For specific test and collection requirements refer to the Laboratory Guide to Services
- 8.3.2. For specific instructions regarding the pneumatic tube system (PTS), refer to [OSUWMC Pneumatic Tube System policy](#)
- 8.4. Laboratory specimens **NOT APPROVED** for transport in the PTS must be walked down / hand delivered to the appropriate laboratory.
- 8.4.1. Specimens requiring a consent to obtain (i.e., tissue or pathology specimens obtained via surgical procedures, spinal taps, fine needle aspirations, biopsies etc.)
- a. Bone marrow
 - b. Amniocentesis fluid
 - c. Arthrocentesis fluid
 - d. Bronchial lavage washing or brushing
 - e. Cordocentesis
 - f. Pericardial fluid
 - g. Peritoneal fluid
 - h. Pleural fluid
 - i. Specimens obtained in the OR
 - j. Cerebral spinal fluid (CSF)
 - k. Thoracentesis fluid
 - l. Tissue specimens
 - m. Vitreous/aqueous fluid
 - n. Fine needle aspiration specimens

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

- o. Cytology specimens – Pap smears / Tzanck smears
- 8.4.2. For specimens that are difficult to collect, irretrievable or time-dependent on collection - it is highly recommended that the unit walk down or hand deliver the specimen(s) to the laboratory
 - a. Neonatal heel-stick
 - b. Arterial puncture blood
- 8.4.3. Specimens for High Risk of spilling, leaking or breaking
 - a. Any test(s) collected in glass vacutainer – i.e. Navy blue top, yellow top SPS, etc.
- 8.4.4. For specimens that are life-threat or critically stat – it is highly recommended that the unit walk down or hand deliver the specimen(s) to the laboratory
- 8.4.5. Other miscellaneous specimen types
 - a. Formalin or alcohol preserved specimens
 - b. Specimens transported in a Lukens trap
 - c. Platelet testing – PFA (platelet function screen), P2Y12, and Platelet Aggregations

9. SPECIMEN LABELING AND IDENTIFICATION

- 9.1. Correct identification of patient specimens is essential for reporting accurate laboratory results. The responsibility for labeling a specimen and verifying all information on the requisition match is that of the person who collects the specimen.
- 9.2. Sites (inpatient and outpatient) with access to IHIS should label specimens with the printed lab barcode label. In circumstances of interface or computer downtime (scheduled or unscheduled), patient chart labels are acceptable. In circumstances of unexplained continual label printing problems, call the Help Desk (293-3861) for assistance in fixing the issue. Specimen barcode labels should be securely placed vertically with no wrinkles or folds. Refer to **Figure 1** below. Outpatient collection sites that are not interfaced with the OSUWMC IHIS system must follow specimen labeling requirements listed below. At all times, patient specimens must include **two patient identifiers**.
- 9.3. **Patient Specimen Labeling Requirements**
 - 9.3.1. Specimen tubes must be labeled immediately after the phlebotomy and in the patient's presence. The phlebotomist must verify the patient's ID on the specimen label is identical to any paper requisition, electronic order notice (IHIS, Atlas, etc.) or patient identification bracelet. For each specimen, the label must contain the following information:
 - a. Patient's legal name
 - **NOTE:** Patient labels contain both patient preferred name and patient legal name. Patient legal name is the required patient identifier for laboratory testing.
 - b. If a middle initial or suffix is being used by the patient it must be identical on all the above
 - c. Medial record number or URL number
 - d. Initials of the individual collecting the specimen, as applicable
 - e. Specimens for Microbiology culture and Molecular Microbiology must include the source of the specimen (i.e. abscess rt. foot, sputum, peritoneal fluid, etc.)
 - 9.3.2. **Anatomic Pathology and Cytology**
 - a. All specimens must be submitted in a rigid, puncture resistant, sealed container
 - b. All specimens submitted must have accurate, complete, and legible patient identification on each specimen container. Do not place the patient identification on the container lid. Identification of the specimen must include both the patient's legal name and identification number. Specimen identification should be performed in the patient's presence to ensure accurate labeling.
 - **NOTE:** Each slide submitted for examination must be labeled with patient's legal name and identification number. Do not label the outside of the container (folder) with patient identification.
 - c. The number of containers submitted (designated as container A, B, C, etc. or 1, 2, 3 etc. as well as differentiating site when necessary)
 - d. Any solution / preservative / fixative in which the specimen is submitted

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

- e. The date of the procedure or the date tissue was 'taken'
 - f. Pertinent clinical history
 - g. For gynecologic PAP exam: last menstrual period, previous PAP smear, history of hormone therapy and indication for HPV testing (if ASC-US or regardless) if applicable
 - h. For Products of Conception (POC) provide a gestational age in weeks on the requisition form
 - i. The tissue type, site, and orientation must also be specified for each container (skin, placenta, gall- bladder or right/left, suture at 12:00, etc.). If the specimen needs orientation, use sutures to clearly indicate margins, i.e. 1 suture = 12:00, 2 sutures = 3:00. Do not use needles or bent needles for orientation or to affix specimen to another object (such as a tongue depressor). Do not use water-soluble ink. Do not incise the specimen.
 - Any solution / preservative / fixative in which the specimen is submitted must also be specified on the container and requisition form.
 - In the event a specimen comes with a single container, AND all patient identification exactly matches on both the requisition and container, AND the requisition indicates the type/site of tissue submitted, the type/site of tissue does NOT have to be written on the container.
 - In the case of multiple containers for a specimen: if the multiple containers are each labeled as 1, 2 or 3, or A, B or C, etc., AND the patient identification exactly matches on both the requisition and each container, AND the requisition indicates the type/site of tissue submitted for each container, the type/site of tissue does NOT have to also be written on the container.
 - j. Cytology specimens received without a physician or authorizing provider order will be kept for up to 7 days. Cytology will make every attempt to obtain a physician or authorizing provider order and verify if the specimen should be processed for cytology.
- 9.4. **Best Laboratory Practices:** When labeling patient specimens, be certain to never completely cover a pre-existing label, if applicable. When labeling, place the "top" of the new label directly below the patient's legal name and date of birth to allow for visual validation that the proper label has been adhered to the correct patient specimen.
- 9.5. All specimens other than blood must be labeled with the type of specimen or collection site

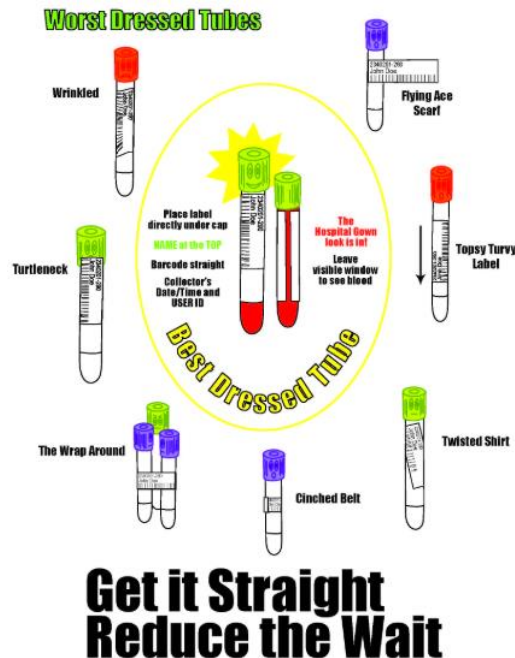


Figure 1

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

10. IDENTIFICATION ISSUES AND CORRECTIVE ACTIONS

- 10.1. Specimens requiring and eligible for corrective action will be preserved and retained until resolution has been completed, notification to discard has been received and documented from the ordering provider, the integrity of the specimen is no longer acceptable or an unacceptable resolution is not available which would require recollection.
- 10.2. If testing cannot be performed or a test result cannot be provided for any reason, laboratory personnel will notify appropriate clinical personnel responsible for the patient.
- 10.3. All requests from a physician to perform testing on an unsatisfactory specimen must be approved by the division director, Medical Director or resident pathologist.
- 10.3.1. Monday – Friday (excluding holidays), 8:00 am – 5:00 pm: notify the appropriate division director
- 10.3.2. If the division director is not available: contact the Clinical Laboratories' Medical Director
- 10.3.3. If the Medical Director is not available: contact the resident pathologist
- 10.3.4. All other hours, weekends and holidays: contact the resident pathologist
- a. Give the patient, specimen and physician information to the pathologist
 - b. The pathologist will contact the physician and determine whether testing will be performed
 - c. If testing is to be performed, append the following to the result along with the condition code
 - Test performed at MD request _____ (full first and last name), date/time
 - Test cleared by resident _____ (full first and last name), date/time
- 10.4. **Unlabeled specimen(s):** A specimen with no label or patient identification on the primary container.
- 10.5. **Mismatched specimen(s):** Specimen identification information does not exactly match the information on the requisition form.
- 10.6. **Mislabeled specimen(s):** Specimen and requisition form identification information match, but the specimen belongs to another patient.
- 10.7. **Unsatisfactory / sub-optimal specimen(s):** Specimens with conditions affecting results that require recollection
- 10.7.1. Venipuncture blood (excluding blood culture specimens), urine, sputum, feces/stool and line-draw blood specimens
- a. Insufficient quantity for testing (QNS)
 - b. Hemolyzed
 - c. Clotted
 - d. Icteric
 - e. Lipemic
 - f. Contaminated
 - g. Improper collection container
 - h. Transportation delays
 - i. Improper storage
 - j. Broken container and/or leaking contents
- 10.7.2. **NOTE: Laboratory staff should verify other orders on a patient prior to contacting the unit for a recollection to eliminate multiple recollect draws and unnecessary venipuncture for the patient.**
- 10.8. **Attached Needles (Potential needle sticks):** The clinical and anatomic pathology laboratories will not accept any blood or body fluid specimens with a needle attached. These specimens are a physical and biological hazard to the laboratory personnel and are identified as unacceptable specimens.
- 10.8.1. When a specimen is received with a needle attached, call the unit to inform them that an unacceptable specimen has been received
- 10.8.2. Request the unit personnel to remove the needle and recap the specimen

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

10.8.3. When appropriate, the person delivering the specimen can take responsibility to make the specimen acceptable (remove needle and recap)

10.8.4. Retain the specimen for an appropriate amount of time to allow the units to provide an acceptable specimen

10.9. **For inpatients and ED patients** – notification will be made by entry in the Laboratory Information System (LIS) and by telephone immediately

10.9.1. Processing personnel

- a. Enter appropriate cancel/redraw reason in the LIS for specimens with insufficient quantity for testing, improper collection container, transportation delays, or improper storage
- b. Using the **Comm Log**, notify the appropriate clinical personnel and document notification when completed

10.9.2. Testing personnel

- a. Enter appropriate cancel/redraw reason in the LIS for clotted, hemolysis, icteric, lipemia or contaminated specimens for which no results can be provided
- b. Using the **Comm Log**, notify the appropriate clinical personnel and document notification when completed

10.10. **For outpatients or outreach patients** – notification will be made in the same manner as for Inpatients/ED patients above, except that telephone notification will be made the next business day

10.11. **Irretrievable specimen(s):** Specimens for which recollection is not mandatory

IRRETRIEVABLE SPECIMENS

- Amniocentesis fluid
- Arthrocentesis fluid
- Bone marrow
- Cordocentesis
- Pericardial fluid
- Pleural fluid
- Spinal fluid
- Tissue specimens
- Fine needle aspiration specimens
- Arterial puncture blood
- Blood cultures
- Bronchial lavage washing or brushing
- Neonatal heel-stick
- Peritoneal fluid
- Specimens obtained in the OR
- Thoracentesis fluid
- Vitreous / aqueous fluid
- Timed therapeutic drug monitoring specimens

10.11.1. When the laboratory has received an improperly identified irretrievable specimen, call the patient care area to inform them that we have received an unacceptable specimen with an identification error and an *Unacceptable Specimen Release* form must be completed. Complete the **Patient Identification Received, Specimen/Test Information Requested, and Problem** sections of the *Unacceptable Specimen Release* form. The person who collected the specimen must complete the release form to establish the identification of the specimen. Release forms must be completed in person (or by authorized facsimile transmission for outreach/off-site patients); no verbal verification is permitted. **NOTE:** For outpatients who are no longer available at the collection site: an *Unacceptable Specimen Release* form must be completed.

10.11.2. If after two attempts to obtain the appropriate identification verification, the specimen identification discrepancy has not been resolved. Proceed as follows:

- a. Process and preserve specimens until resolution is completed
- b. For body fluid cell counts, CBC and coagulation specimens:
 - Make a copy of the requisition and place an “ID Discrepancy - Hold Results” sticker on it
 - Deliver the specimens and requisition copy to appropriate testing area. All tests should be run off line. **NO RESULTS SHOULD BE FILED.**
 - The testing area will return specimens, the test printout / results and requisition to the Central Processing area
 - Enter the collection/identification issue into the Patient Safety Reporting System (PSRS) as appropriate

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

10.11.3. When Central Processing receives the required information, accession the specimens. The various areas can perform the testing on the preserved specimens or file the “Hold Results” tests.
10.11.4. Using the script in **Figure 2**, send an email (**osumc.edu addresses ONLY**) to the ordering provider, any other provider associated with the specimen/request, lab customer service and the lab Medical Director.

The Clinical Laboratories received a request for laboratory services from you on **insert date** and there was a specimen identification discrepancy. (Indicate only ONE of the following):

- There is no identification information on the specimen container
- There is no identification information on the request form
- The identification information on the request form and/or specimen container is incomplete
- The two identifiers on the requisition do not exactly match the two identifiers on the specimen container

We cannot provide the requested services without resolving this discrepancy. We contacted your patient care area twice to obtain a completed *Unacceptable Specimen Release* form to establish the identification of the patient specimen, but have not received the requested documentation.

Please contact Main Campus Laboratory at 614-293-8375 or East Campus Laboratory at 614-257-3999 (or by *replying to all* on this email) and provide a fax number to which the *Unacceptable Specimen Release* form can be sent so you can complete the **Identification Verification by Patient Care Personnel** section and return completed form to us.

The specimen integrity has been maintained, and upon receipt of the requested verification we will be able to perform the requested services and provide the results, **OR if so instructed by you**, discard the specimens.

Figure 2

11. BLOOD COLLECTION TUBES

- 11.1. A variety of blood collection tubes and urine preservatives are necessary to maintain specimen stability until testing can be performed in the laboratory. Some of the most commonly used tube types and their contents are outlined below.
- 11.1.1. **Special collection tubes:** container types ‘ASK’ and ‘CALL’ require the collector to contact the laboratory at 293-8375 for explicit collection guidelines and instructions.
- 11.2. **Always refer to the general test listings for tube types and special requirements for individual tests. Navy, lavender, light blue, mint green, yellow, gray and green top tubes must be mixed thoroughly. Specimens to be sent on ice or wrapped in foil must be sent this way without exception. SPECIMENS WITH NEEDLES ATTACHED WILL NOT BE ACCEPTED.**

Tube Type	Characteristics and Uses
Yellow Top Tube (SPS) Label Code: YELISO	SPS (Sodium Polyanetholesulfonate) is used as an anticoagulant. For <u>microbiological culturing</u> . Caution: Do not substitute an ACD Yellow Top tube for these specimens. Must be half full to avoid being QNS and well mixed by gentle inversion after specimen collection.
Light Blue Top Tube Label Code: Lt Blue	Contains 3.2% buffered sodium citrate. Use a discard tube if this is the first tube to be drawn and using a butterfly collection set. Must be well mixed by gentle inversion after specimen collection and cannot be clotted or contain clots. Used for most coagulation procedures. Must contain specified volume of blood.









**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

Brick Red Top Tube Label Code: Red Top	Plain non-additive tube.
Serum Separator Tube Gold Top Tube Label Code: Gold	Contains gel and clotting activators (must treat like an additive) to enhance separation of RBCs from serum. Used for most Endocrinology and Special Function procedures. Note: Cannot be used for Blood Bank.
Mint Green Top Tube Label Code: MT GRN	Contains lithium heparin. Used for most Chemistry procedures.
Green Top Tube Label Code: NAHEP GN	Contains sodium heparin. Must be well mixed by gentle inversion after specimen collection. Note: Cannot be used for coagulation studies. Generally used for specimens on ice.
Navy Blue Top Tube with Red label Label Code: NAVY	Contains no additive. This is serum for copper, zinc, iodine and other trace elements
Navy Blue Top Tube with Purple label Label Code: EDTANAVY	Contains EDTA. Whole blood for leads, heavy metals and other trace elements
Lavender Top Tube Label Code: Lav	Contains EDTA as an anticoagulant. Must be well mixed by gentle inversion after specimen collection. Used for a variety of Hematology and Blood Bank tests. Note: Cannot be used for coagulation studies and cannot be clotted or contain clots.
Gray Top Tube Label Code: LTG WB	Contains potassium oxalate and sodium fluoride. Used for glucose tolerance tests. Must be well mixed by gentle inversion after specimen collection.
Yellow Top Tube (ACD) Label Code: LTYELLOW	ACD (Acid Citrate Dextrose). Used for Blood Bank and Tissue Typing Lab; HLA testing. Caution: Do not substitute SPS Yellow Top tubes for these specimens. Must be well mixed by gentle inversion after specimen collection. DO NOT USE FOR MICROBIOLOGY.
Gray Top Urine Collection Label Code: Grey Ur	Contains Boric Acid preservative to hold bacterial growth at a static state after collection. Must be filled to the fill line to ensure proper urine to preservative ratio.
Bactec Blood Culture Collection Bottles Label Code: BACTBOT	Used for the aerobic and anaerobic culture and recovery of microorganisms (bacteria and yeast) from blood. Aerobic, Anaerobic and PEDS-Plus bottles available. Note: Not used for fungal or AFB blood cultures.

12. ORDER OF DRAW

- 12.1. When multiple specimens are drawn, special attention should be given to the order in which tubes are filled. Draw specimens for blood cultures first to prevent possible contamination from non-sterile stoppers. Draw tubes with no additives before tubes with additives (i.e. clotting activators or anticoagulants).

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

Lid Color	Collection Tube / Additive
	<p>BD Bactec Blood Culture Collection Bottles 8-10 mL of blood for full draw 1-3 mL of blood in pediatric draw</p> <p>-OR-</p>
	<p>BD Vacutainer SPS Culture Tube</p>
If not drawing blood culture, START here:	
<p>If drawing with a butterfly or from a line, an appropriate amount of waste blood must be drawn for discard to eliminate contamination and erroneous results. Typically one waste tube or 5 mL.</p>	
	<p>Citrate Tube: must be filled to fill line</p>
If not drawing blood cultures or coagulation testing, START here:	
	<p>BD Vacutainer SST Gel Separator Tube</p>
	<p>Serum Tube no gel</p>
	<p>Heparin Tube (lithium or sodium depending on test)</p>
	<p>EDTA Tube</p>
	<p>Fluoride (glucose) Tube</p>
Remember to mix by gentle inversion to ensure adequate mixing of additives and patient specimen	

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

13. SPECIMEN COLLECTION PROCEDURES

- 13.1. Regardless of method collection, always follow these same basic principles:
- 13.1.1. Identify yourself to the patient, where you are from and what you will be doing.
 - 13.1.2. Verify patient identification using at minimum two patient identifiers
 - a. **Patients with an identification bracelet:** double-check legal name and medical record number and have patient verbally verify their identity by stating legal name and date of birth. Compare with information on identification bracelet, test request and specimen labels.
 - If the patient is unable to verbally verify, double check legal name and medical record number against the patient bracelet
 - Notify the patient's professional caregiver (or phlebotomist supervisor) if there are any discrepancies in the legal name or medical record number
 - **NOTE: DO NOT DRAW THE SPECIMEN(S) UNTIL DISCREPANCY IS RESOLVED**
 - b. **Patients without an identification bracelet:** match verbal information to test request and/or specimen labels
 - Verify identity by asking the patient to state their legal name and date of birth.
 - c. **Patients who are unable to participate in the identification verification process:** if the patient has a language barrier, or may be semiconscious, unconscious, comatose, or cognitively impaired, ask the patient's health care professional, a relative, or a friend to identify the patient by providing, not affirming, the same information outlined in 13.1.2
 - Document the full first and last name and title of the individual who has identified the patient (if healthcare professional) or relationship to the patient in the specimen record or patient record
 - 13.1.3. Specimen collection documentation is completed in IHIS using a Rover device or workstation. Collection staff should refer and adhere to the applicable IHIS tip sheet for further instruction.
 - a. Rover IHIS tip sheet: [Collection Using Rover for Draw Sites \(Lab Staff\)](#)
 - b. Workstation IHIS tip sheet: [Collection Using a Workstation for Draw Sites \(Lab Staff\)](#)
 - c. **NOTE:** A workstation may only be used for specimen collection documentation when a Rover device is not available.
 - 13.1.4. Patient inquiry – refer to physician or authorizing provider
 - 13.1.5. Patient refusal – do not argue, report the patient's objections to the ordering provider or nurse
- 13.2. **Order of Draw:** [see ORDER OF DRAW section](#)
- 13.3. **Equipment and Supplies**
- 13.3.1. 70% Isopropyl alcohol pads or Providone Iodine swab sticks
 - 13.3.2. Single-use Latex-free tourniquet
 - 13.3.3. 21-gauge multi-draw, single draw and 23-gauge scalp vein needles
 - a. Select the appropriate type of needle based on the patient's physical characteristics and amount of blood to be drawn
 - 13.3.4. Single-use vacuum tube holder(s)
 - 13.3.5. Evacuated tubes – select the appropriate tube(s) based on the test(s) requested
 - 13.3.6. Single use Latex-free gloves
 - 13.3.7. Gauze pads
 - 13.3.8. Dermal tape

NOTE: INTACT AND CLEAN GLOVES MUST BE WORN DURING THE ENTIRE VENIPUNCTURE PROCEDURE.

- 13.4. **Collection of blood via venipuncture:** proper collection of venous blood for clinical laboratory tests is essential to provide accurate patient test results. To avoid interferences in laboratory methods, it is imperative that the correct procedure for collection and handling of blood specimens be followed
- 13.4.1. **Factors affecting venipuncture specimens:**
 - a. Alcohol must be dry – it may cause hemolysis

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

- b. Increased tourniquet time (longer than one minute) may result in localized stasis with hemoconcentration and the possible formation of a hematoma due to infiltration of blood into tissue. This may result in erroneously high values for all protein-based analytes, packed cell volume, and other cellular elements.
- c. Cross contamination of tube additives may result in erroneous results if tubes are not maintained below the venipuncture site.
- d. Preventing hematomas – remove tourniquet first, use major superficial veins, fully penetrate uppermost wall of vein (partial penetration allows blood to leak into tissue), and apply pressure to venipuncture site. Do not allow patient to bend arm at the elbow as a substitute for pressure. Before bandaging, ensure the puncture to the vein has sealed by observing for hematoma formation after pressure is released.
- e. Preventing hemolysis – mix anticoagulated blood gently, avoid needles that are too small, assure needle is fitted securely to prevent frothing

13.4.2. **Hazards of Venipuncture and Phlebotomy Adverse Reactions:** a patient's life may depend on vein patency. It is important to select the vein site carefully because the veins provide an avenue of entry for transfusion, infusion, and therapeutic agents. If during the procedure accidental arterial puncture is suspected (i.e. rapidly forming hematoma, rapid filling of tube), the phlebotomist must remove the needle immediately and apply direct forceful pressure to the puncture site for a minimum of five minutes until active bleeding has ceased. Notify the nursing staff and ordering provider immediately.

a. **Minor Adverse Reactions**

▪ Hematomas

- 1. Remove needle immediately
- 2. Apply pressure
- 3. Notify nurse or authorized provider **immediately**

▪ Nausea

- 1. Make patient comfortable and provide an emesis basin or carton
- 2. Instruct the patient to breathe deeply and slowly
- 3. Apply cold compress to the patients forehead
- 4. Notify nurse or authorized provider **immediately**

▪ Fainting

- 1. Remove the tourniquet and collection tube, withdraw needle and apply pressure
- 2. If patient is sitting, lower their head and arms
- 3. Loosen tight clothing
- 4. Apply cold compress to forehead and back of neck
- 5. Maintain the patient in a recumbent position until fully recovered
- 6. Notify nurse or authorized provider **immediately**

b. **Serious Adverse Reactions**

▪ Vomiting

- 1. Give patient an emesis basin or carton and tissues
- 2. Give the patient water to rinse mouth
- 3. Notify nurse or authorized provider **immediately**

▪ Nerve damage

- 1. If the patient experiences shooting electric pain, tingling or numbness or onset of tremor:
- 2. Remove the tourniquet and collection tube, withdraw needle and apply pressure
- 3. Recommend the patient seek medical evaluation if any of the above symptoms persist
- 4. Notify nurse or authorized provider **immediately**

▪ Seizures

- 1. Remove the tourniquet and collection tube, withdraw needle and apply pressure
- 2. Allow the seizure to happen
- 3. Do not restrain the patient
- 4. If possible, move patient to the floor or support them on the chair
- 5. Cushion the patients head if on the floor
- 6. Move sharp objects and furniture away from patient

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

7. Note the time the seizure started
8. Notify nurse or authorized provider **immediately**

All serious injuries (including vomiting, injury, nerve damage and/or seizures) are reported utilizing the [Patient Safety Reporting System \(PSRS\)](#) event reporting system.

13.4.3. **Puncture site selection:** the preferred venipuncture site is the antecubital fossa (**Figure 3**), which is the area of either arm that is anterior to (in front of) the bend of the elbow where a number of large veins lie relatively near the skin's surface. When antecubital veins are not acceptable or are not available, veins on the back of the hand (**Figure 4**) are also acceptable for venipuncture. Veins on the palmar surface of the wrist and the lateral wrist above the thumb to the mid-forearm must not be used. In many hospitals, special identification bands indicate restricted use of certain veins for expected IV therapy or insertion of a cannula.

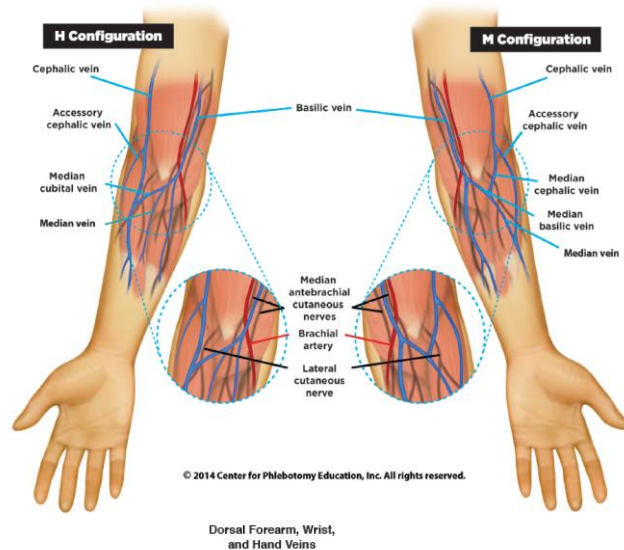


Figure 3

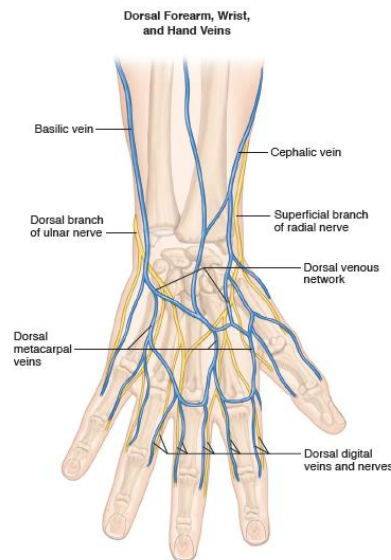


Figure 4

- a. Vein Prioritization
 - Because the brachial artery and several major nerves pass through the antecubital area, the phlebotomist must prioritize antecubital vein selection (**Figure 5**) to prevent arterial puncture and nerve injury

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

1. Veins in the median aspect (center), i.e. median and lateral aspect of the median cubital veins: attempt to locate these veins in either arm before considering alternative antecubital veins
2. Veins in the lateral aspect (outer), i.e. cephalic vein and accessory cephalic vein: while injuries to the lateral nerve during venipuncture are rare, these veins must not be considered unless other veins in the median aspect of the antecubital area have been ruled out
3. Veins in the medial aspect (inner), i.e. basilica vein and medial aspect of the median cubital vein: venipuncture attempts to these veins are more likely to injure the brachial artery and the median antebrachial cutaneous nerves. Collections from these veins must not be considered unless no other vein provides confidence it can be safely and successfully accessed

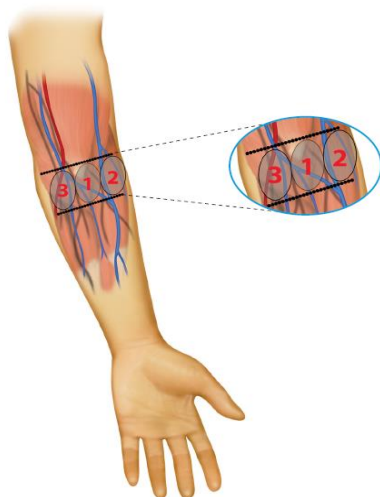


Figure 5

- b. Site Selection Limitations
- Scarring - palpitation and needle insertion complications and inability to detect adverse reactions
 - Mastectomy - risk of lymphedema and the potential for alerted test results
 1. For patients with a double mastectomy (that the patient reveals) – work with the patient to determine the best site possible away from the removed lymph nodes. The hand can be utilized if necessary.
 - Hematoma – may cause discomfort to the patient and potential altered test results. If site must be used, collect the specimen distal to the hematoma
 - Intravenous therapy – possible contamination of specimens with IV fluids
 1. Specimens should be collected from the opposite arm. If that is not possible, please refer and adhere to the [Intravascular Access Devices, Peripheral and Central \(Nursing\)](#) policy.
 2. Patients on IV therapy for extended periods of time often have veins that are palpable and visible but are damaged or occluded (blocked). Every time a catheter is used, vein damage occurs. Circulatory blood is rerouted to collateral veins and can result in hemoconcentration.
 - Cannula, Fistulas and Vascular Graft - threatens the integrity of fistulas and vascular grafts, which can lead to serious patient complications. Do not attempt to draw from these sites, contact the ordering provider
 - Chemotherapy - use opposite arm of finger stick because of possibility of extravasation
 - Edema - potential for altered test results. Some patients develop an abnormal accumulation of fluid in the intercellular spaces of the body. This swelling can be localized or diffused

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

over a larger area of the body. The phlebotomist should avoid collecting blood from these sites because veins are difficult to palpate or stick.

- Obesity - Obese patients generally have veins that are difficult to visualize and palpate. If the vein is missed, the phlebotomist must be careful not to probe excessively with the needle because it causes rupture of RBC's, increase concentration of intracellular contents, and releases some tissue clotting factors.
- Avoid arteries (more elastic with thick walls and pulsates)
- Avoid thrombosed veins (lack resilience, roll easily and feel cord-like)
- Drawing lower extremities - **laboratory personnel are not permitted to draw the patient's foot / lower extremities**

13.5. **Patient preparation and vein location:** verify patient identification. Explain the procedure to the patient in a reassuring manner. Have the patient relax in a comfortable position, lying in bed or seated in a comfortable chair. Verify patient's diet restrictions, some tests require the patient to fast and/or eliminate certain foods from the diet prior to the specimen collection.

13.5.1. Wash hands and put on gloves

- a. Hand hygiene must be performed immediately before patient contact
- b. Soap and water must be used for visibly soiled hands and for patients known to be infected with *Clostridium difficile*
- c. If not visibly soiled, an alcohol-based hand rub can be used for decontaminating hands.

13.5.2. A tourniquet may be used to aid in the selection of a vein site unless specific tests require tourniquets not be used (i.e., lactate). If a tourniquet must be applied for the preliminary vein selection, it should be released and reapplied after two minutes.

13.5.3. Palpate and trace the path of veins several times with the index finger

13.5.4. If a vein is not apparent, tap the vein site with the index and second finger or apply a warm water bottle for five minutes.

13.5.5. Clean venipuncture site with back-and-forth friction using alcohol. Allow the area to air dry to prevent hemolysis and to prevent the patient from having a burning sensation.

13.5.6. Apply the tourniquet (if patient has a skin problem, apply over clothing) around the arm 3 to 4 inches above the venipuncture site. Tuck the end under the last round. Do not leave on for longer than one minute.

13.5.7. Ensure the patient's hand is closed

- a. There must not be vigorous hand exercise ("pumping"). Vigorous hand exercise can cause changes in the concentration of certain analytes in the blood.

13.5.8. Begin the venipuncture by holding the patient's arm and anchoring the vein with your thumb or between index finger and thumb.

13.5.9. Verify the needle is secure in the holder, there are no hooks on the needlepoint, and if using a syringe, that the plunger moves freely. Insert collection tube into the holder up to the guideline.

13.5.10. With the bevel up, insert the needle into the vein at an angle of 30 degrees or less and pop the tube

13.5.11. If a blood specimen cannot be obtained, change the position of the needle. If the needle has penetrated too far, pull back or advance it if it has not penetrated far enough. Another tube can be used in case the vacuum was insufficient. The tourniquet may be loosened to return blood flow. Probing is not recommended as it is painful and may cause a hematoma. Do not stick a patient more than twice. Contact another staff member for assistance.

13.5.12. Grasping the flange of the holder, push the tube until the stopper is punctured. Keep the tube below the site so fluid does not move back and forth and cause back flow of blood into the venous system.

13.5.13. Release the tourniquet as soon as possible after the blood begins to flow.

13.5.14. Fill the tube until the blood ceases. Remove the tube and repeat for additional specimens. If the tube has an additive, invert gently five to ten times immediately after removing from the vacuum tube holder.

13.5.15. When blood draw is complete open the patient's hand. Place gauze over the site. Apply light pressure to the gauze as the needle is removed and activate the safety feature of the drawing device.

13.5.16. Release the pressure to the puncture site and ensure that bleeding has completely stopped and observe collection site for signs of hematoma.

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

13.5.17. Apply an adhesive or gauze bandage over the venipuncture site. It is recommended that hypoallergenic adhesives be available. Instruct the patient to leave the bandage on for at least 15 minutes.

13.5.18. Continued bleeding:

- a. If bleeding persists longer than 5 minutes, a nurse should be alerted so that the attending physician can be notified.
- b. Pressure applied with gauze must continue at the site as long as necessary to stop the bleeding.

13.5.19. If a syringe was used, activate the safety feature of the needle and using a safety transfer device, fill appropriate tubes.

- a. Puncture stoppers and let tube(s) fill
- b. Do not remove caps and never force blood into a tube

13.6. **At the patient's side**, immediately label collection tube(s) with the patient collection labels (legal name, identification number) collect date, collect time as needed, and identification of person collecting the specimen.

13.7. Provide the patient with post venipuncture care instructions

13.7.1. Instruct the patient to read the post venipuncture care instructions that are:

- a. posted in an unobstructed location in your facility,
- b. provided via a post venipuncture care handout, or
- c. provided by another means approved by the laboratory medical director

13.7.2. Post collection, confirm with the patient that the post care instructions were read and understood. Ask the patient if they have any questions regarding the information provided.

13.8. Place specimen(s) in a securely sealed biohazard specimen transport bag, and when applicable place requisition in outer pocket / document pouch.

13.9. Remove gloves and wash hands

13.9.1. Soap and water must be used for visibly soiled hands and for patients known to be infected with *Clostridium difficile*

13.9.2. If not visibly soiled, an alcohol-based hand rub can be used for decontaminating hands.

13.10. Transport specimens to laboratory

14. COLLECTION OF BLOOD CULTURE SPECIMENS (Also refer to Collection of Blood Specimens by Venipuncture)

14.1. Proper collection of venous blood for blood culture testing is essential to provide accurate patient test results. To avoid interferences in laboratory methods, meticulous site preparation is paramount to accurate blood culture test results.

14.2. **Equipment and Supplies**

- 14.2.1. Blood Culture Kit: contains culture bottles
- 14.2.2. 5 alcohol preps
- 14.2.3. CloraPrep Frepp[®]
- 14.2.4. Vacutainer tube holder
- 14.2.5. Adapter multi-specimen Leur loc tip (vacutainer needle)
- 14.2.6. 21 gauge butterfly needle
- 14.2.7. Gloves
- 14.2.8. Tourniquet
- 14.2.9. Gauze pads (should be used on patients with dermatitis)
- 14.2.10. Dermal tape

14.3. Follow patient preparation and vein selection in [section 13.5](#).

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

NOTE: INTACT AND CLEAN GLOVES MUST BE WORN DURING THE ENTIRE VENIPUNCTURE PROCEDURE.

- 14.4. Blood cultures require additional venipuncture site cleaning and prep:
- 14.4.1. Clean venipuncture site using 2-3 alcohol preps with back-and-forth friction for a minimum of 30 seconds to remove skin oils and bacteria. Allow the area to air dry.
 - 14.4.2. Tear CloraPrep swab package at marks and pull off the bottom part of the packet. Hold stem with top of packet. Start at venipuncture site and using friction paint a gradually enlarging 3-inch circle. Let air dry. Do not touch site again.
 - 14.4.3. Assemble vacutainer and butterfly device. Set blood culture bottles on flat surface and find fill line. Flip off caps and clean each rubber top with alcohol prep and leave prep on top of bottle until ready to use and do not touch.
 - 14.4.4. Perform venipuncture without touching insertion site
 - 14.4.5. Place vacutainer holder over top of aerobic blood culture bottle while holding bottle upright. Monitor for blood flow only to fill line and remove bottle. Repeat with anaerobic bottle. Gently invert bottles to mix contents.
 - 14.4.6. Continue with blood draw for other tubes if needed. Release tourniquet when last tube is placed. Remove last tube after filling, remove butterfly needle, activate safety feature on butterfly needle and dispose of in sharps. Apply light pressure to venipuncture site with gauze.
 - 14.4.7. Wipe off CloraPrep with alcohol prep. Apply adhesive or gauze bandage.
 - 14.4.8. Label culture bottles and other tubes drawn in the patient's presence.
- 14.5. Repeat above procedure at second peripheral site preferably 30 minutes post collection time of the first set of blood cultures.
- 14.5.1. Label culture bottles in the patient's presence
 - a. Do not cover barcode on the bottles with patient label
 - b. Indicate collect date and time and collector initials on bottles
 - c. Indicate anatomical site from which specimen was collected on bottles and request form
 - d. Place bottles in a securely sealed biohazard specimen transport bag
 - Use an additional biohazard specimen transport bag for bottles collected from separate sites
 - e. Place requisition form in outer pocket / document pouch
 - f. Transport to laboratory within one hour
 - g. **Do not refrigerate blood culture bottles**

**15. COLLECTION OF SPECIMENS FROM INDWELLING LINES, HEPARIN OR SALINE LOCKS AND VASCULAR ACCESS DEVICES (VADs)
(Laboratory personnel are not permitted to draw from indwelling lines or VADs)**

- 15.1. Obtaining specimens from indwelling lines or vascular access devices can be a potential source of test error due to hemolysis or contamination with fluid and/or medication due to incomplete flushing of the collection site. Whenever possible, blood must be collected from the opposite arm of VADs and infusions. If blood needs to be collected on an arm in which an infusion is taking place, please refer and adhere to the [Intravascular Access Devices, Peripheral and Central \(Nursing\)](#) policy.
- 15.2. Coagulation specimens must have the proper whole blood to anticoagulant ratio. The necessary specimen volume is listed on the collection tube packaging. Tubes not containing the specified volume of blood are not acceptable because spurious results would be obtained. Collection of blood for coagulation testing through intravenous lines that have been previously flushed with heparin should be avoided, if possible. When obtaining specimens from indwelling lines that may contain heparin, please refer and adhere to the [Intravascular Access Devices, Peripheral and Central \(Nursing\)](#) policy.

**16. COLLECTION OF ARTERIAL BLOOD SPECIMENS
(Arterial blood collection is collected only by trained respiratory therapy staff)**

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

16.1. **NOTE:** For neonatal blood gas heel sticks, collection staff should refer and adhere to Nationwide Children's Hospital policy *Blood Specimen Collection via Capillary Skin Puncture and Direct Venipuncture*.

16.2. Hazards of Arterial Puncture

16.2.1. Vasovagal response: patients can have a vasovagal reaction, which may result in a loss of consciousness. The procedure for dealing with a patient who fainted or is unexpectedly non-responsive is to:

- a. Notify the designated first aid trained personnel
- b. Where practical, lay the patient flat or lower his/her head and arms, if the patient is sitting
- c. Loosen tight clothing

16.2.2. Arteriospasm: a reflex constriction of the artery in response to pain or other stimuli. This is a transient condition, which may make it impossible to obtain blood, even though the needle is properly located in the lumen of the vessel. It may also result in impaired oxygen flow to the tissue being supplied by the artery.

16.2.3. Hematoma: due to higher pressure in the arteries, more blood is apt to leak through the puncture site. Though the elastic tissue in the arterial wall tends to cause rapid closure of the puncture, elastic tissue decreases with age and certain disease states, therefore the potential for hematoma is greater in older people. Use of larger diameter needles increases the probability of blood leakage. Also the risk of hematoma is increased in patients receiving anticoagulant therapy or individuals with serious coagulopathies (i.e. end stage liver disease or oncology patients).

16.2.4. Thrombosis and embolism: are more likely to occur if a needle or cannula is left in place for some time. An adherent clot forms if the inner wall of the vessel is injured. The thrombus grows gradually and may obstruct the entire lumen of the vessel and needle. Thrombi may occur in both arteries and veins, but have more serious consequences in arteries since most superficial veins have collateral vessels assuring adequate circulation. Some arteries do not have collateral vessels. The presence or absence of collateral vessels determines the safety of the procedure and should be a prime consideration in selecting the site of the arterial puncture.

16.3. Equipment and Supplies

- 16.3.1. Alcohol wipes
- 16.3.2. Iodine prep
- 16.3.3. 23 gauge x 1" needle
- 16.3.4. 22 gauge x 1 ½" needle
- 16.3.5. Blood Gas Collection Kit: 3 mL pre-heparinized blood gas syringe
- 16.3.6. A needle capping device and air bubble removal cap
- 16.3.7. Sterile gauze pads
- 16.3.8. Container with ice
- 16.3.9. Adhesive bandage
- 16.3.10. Disposable sterile gloves

16.4. Patient Preparation

16.4.1. Verify patient identification using at least two identifiers

16.4.2. **NOTE:** Whenever possible, allow the patient's temperature, breathing pattern, and the concentration of oxygen in the inspired air (FiO₂) to stabilize for at least 30 minutes. Note the FIO₂ concentration on the request form to permit interpretation of the results.

16.4.3. Explain the procedure to the patient in a reassuring manner and have the patient relax in a comfortable position, lying in bed or seated in a comfortable chair, for at least 5 minutes until breathing is stabilized. Blood gas values may be altered by hyperventilation due to anxiety, breath-holding, vomiting or crying.

16.5. Arterial Puncture Site Selection

- 16.5.1. Criteria for site selection:
- a. Collateral blood flow

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

- b. Accessibility and size of artery
- c. Periarterial tissue – fixation of the artery, danger of injury to adjacent tissues
- 16.5.2. Sites of arterial puncture:
 - a. Radial artery – the radial artery is easily accessible at the wrist in most patients and is the most commonly used site for arterial puncture. It is easily compressed over the ligaments of the wrist, thus the incidence of hematomas is relatively low. Collateral circulation to the hand is normally provided by the ulnar artery. Inadequate blood supply to the hand may suggest the need to select another puncture site.
 - b. Brachial artery – the brachial artery is also used for arterial puncture. It may be preferred for larger volumes. It may be more difficult to puncture due to the deeper location between muscles and connective tissue. Proper positioning of the arm with hyperextension improves the position of the brachial artery for puncture. It is not supported by firm fascia or bone, and in obese patients, may be difficult to palpate. Effective compression of the puncture site is more difficult because of the deep location in the soft tissues. The incidence of hematoma formation may be more common than at the radial site. The brachial artery is not commonly used in infants or children. It is harder to palpate than the radial artery and there is no collateral circulation.
 - c. Femoral artery – the femoral artery is a large vessel that is superficially located in the groin and easily palpated and punctured. Generally, this is the last site selected. Disadvantages are poor collateral circulation to the leg and increased chance of infection if the site is not thoroughly cleansed. In newborns, the hip joint and femoral vein and nerve lie so close that injury to these structures is a hazard, which may contraindicate this procedure. Puncture of the femoral artery in older infants and children is relatively easy and safe.
 - d. Scalp arteries – in infants scalp arteries may be as wide as or wider than the radial artery and may be punctured easily. One of the two main branches of the temporal artery is usually used.
- 16.5.3. Modified Allen Test: to be performed if **the radial artery** is chosen as the puncture site
 - a. Instruct the patient to close hand to form a fist
 - b. Apply pressure at the wrist, compressing and obstructing both the radial and ulnar arteries
 - c. Instruct the patient to open hand to reveal blanched palm and fingers
 - d. Release obstructing pressure from the ulnar artery and observe palm and fingers. They should become flushed within 15 seconds. If the ulnar artery does not adequately supply the entire hand (a negative Allen test), the radial artery should not be used.
- 16.5.4. Gather all required equipment and supplies
- 16.5.5. Select puncture site
- 16.5.6. Position patient to locate and access selected artery
 - a. Radial artery – the arm should be abducted with palm facing up and wrist extended about 30° to stretch and fix the soft tissues over the firm ligaments and bone. If necessary, use a rolled towel or pad for positioning of the extremity. Locate the artery just proximal to the skin crease at the wrist.
 - b. Brachial artery – the arm should be extended and wrist rotated until the maximum pulse is palpated with the index finger just above the skin crease in the antecubital fossa. If necessary, use a rolled towel or pad for positioning of the extremity. Follow the arterial pulse proximally by palpation with the middle finger for 2-3 cm.
 - c. Femoral artery – the patient should lie flat with both legs extended. Palpate the pulsating vessel with two fingers.
- 16.5.7. Prepare the puncture site aseptically. Do not touch the puncture site after cleansing except with gloved fingers. Shave the area around the puncture site for femoral or scalp artery puncture.
- 16.5.8. Perform puncture:
 - a. Radial or Scalp artery
 - Hold syringe like a dart with the bevel of the needle up at an angle of 30 to 45° and puncture skin about 5-10 mm distal to the exact point where needle should enter artery
 - Advance the needle under the skin aiming for artery. When the artery is entered, blood will enter the flashback chamber.
 - b. Brachial artery

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

- Spread two fingers along the course of the artery
- Enter the skin just below the distal finger and aim the needle along a line connecting the two fingers, using a 45° angle of insertion with the bevel up
- c. Femoral artery
 - Spread two fingers 2-3 cm apart along the course of the artery to anchor the vessel
 - Puncture the skin perpendicular to the surface, at an angle against the blood stream between the two fingers
- d. Quickly remove syringe and simultaneously place a dry gauze sponge over the puncture site
- e. Compress the artery for a minimum of five minutes or longer if required to stop bleeding
- f. While applying pressure to the artery, check the syringe for air bubbles and carefully expel any trapped bubbles
- g. Remove needle and apply stopcock cover
- h. **At the patients side**, immediately label syringe with the patient's legal name, identification number, collect date, collect time, and identification of person collecting the specimen
- i. Place the syringe in a securely sealed biohazard specimen transport bag if being transported to any Respiratory Therapy ABG lab or clinical lab. Immerse the specimen in an ice-water slurry if it will be more than 10 minutes between puncture and arrival in the lab.
- j. Remove gloves and wash hands
 - Soap and water must be used for visibly soiled hands and for patients known to be infected with *Clostridium difficile*
 - If not visibly soiled, an alcohol-based hand rub can be used for decontaminating hands
- k. All Critical Care Batteries (CRITB) must have the actual collect time indicated on the lab label
- l. Transport specimen to laboratory
 - Deliver to laboratory within ten minutes of collection for analysis

17. COLLECTION OF BLOOD SPECIMENS BY CAPILLARY PUNCTURE

17.1. Proper collection of capillary puncture specimens is essential for accurate laboratory test results. Skin-puncture is a mixture of blood from arterioles, venules, capillaries, and interstitial fluids. The proportion of arterial blood is greater than venous blood because pressure in the arterioles leading into the capillaries is greater than pressure in the venules exiting the capillaries.

17.2. Hazards of Capillary Puncture

17.2.1. Minor Adverse Reactions

- a. Hematomas
 - Remove needle immediately
 - Apply pressure
 - Notify nurse or authorized provider **immediately**
- b. Nausea
 - Make patient comfortable and provide an emesis basin or carton
 - Instruct the patient to breathe deeply and slowly
 - Apply cold compress to the patients forehead
 - Notify nurse or authorized provider **immediately**
- c. Fainting
 - Remove the tourniquet and collection tube, withdraw needle and apply pressure
 - If patient is sitting, lower their head and arms
 - Loosen tight clothing
 - Apply cold compress to forehead and back of neck
 - Maintain the patient in a recumbent position until fully recovered
 - Notify nurse or authorized provider **immediately**

17.2.2. Serious Adverse Reactions

- a. Vomiting
 - Give patient an emesis basin or carton and tissues
 - Give the patient water to rinse mouth

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

- Notify nurse or authorized provider **immediately**
- b. Nerve damage
 - If the patient experiences shooting electric pain, tingling or numbness or onset of tremor:
 - Remove the tourniquet and collection tube, withdraw needle and apply pressure
 - Recommend the patient seek medical evaluation if any of the above symptoms persist
 - Notify nurse or provider **immediately**
- c. Seizures
 - Remove the tourniquet and collection tube, withdraw needle and apply pressure
 - Allow the seizure to happen
 - Do not restrain the patient
 - If possible, move patient to the floor or support them on the chair
 - Cushion the patients head if on the floor
 - Move sharp objects and furniture away from patient
 - Note the time the seizure started
 - Notify nurse or authorized provider **immediately**

All serious injuries (including vomiting, injury, nerve damage and/or seizures) are reported utilizing the [Patient Safety Reporting System](#) (PSRS) event reporting system.

17.3. Equipment and Supplies

- 17.3.1. 70% Isopropyl Alcohol wipes
- 17.3.2. Retractable skin-puncture device
- 17.3.3. Warming device
- 17.3.4. Gloves
- 17.3.5. Gauze wipes
- 17.3.6. Collection container(s)
- 17.3.7. Adhesive bandage

17.4. Patient Preparation

- 17.4.1. Position the patient
- 17.4.2. Seat the patient in a chair with arms to prevent falls if the patient loses consciousness. Have the patient place arm on the armrest
 - a. Use a bed, cot or reclining chair as appropriate

17.5. Site Selection

- 17.5.1. Skin puncture blood can be obtained from the palmar surface of the finger's distal phalanx and lateral or medial plantar surface of the heel. In infants less than one year old, heel puncture is generally performed. For older children and adults, the palmar surface of the finger's distal phalanx is most frequently used.
- 17.5.2. Blood should not be collected from the central area of an infant's heel, fingers of a newborn less than one year old, a swollen or previously punctured site (because accumulated tissue fluid will contaminate the blood specimen), or fingers on the side affected by a mastectomy.
- 17.5.3. Infant **heel** – the site must be on the plantar surface medial to a line drawn from the middle of the big toe to the heel or from the fourth or fifth toe to the heel. Skin puncture must not be performed on the central area of the foot. This may cause injury to the nerves, tendon, or cartilage.
- 17.5.4. Adult **finger** – the puncture must be on the palmar surface of the distal phalanx (not at the side or tip of the finger) because the tissue on the side and tip of the finger is about half as thick as the tissue in the center of the finger. The puncture should occur across the fingerprints, not parallel to them. Middle and ring finger are preferred sites because the thumb has a pulse and the index finger may be more sensitive or callused. The fifth finger must not be punctured, because the tissue depth is insufficient to prevent bone injury. Finger stick puncture must not be performed on infants.

18. GENERAL GUIDE FOR URINE COLLECTION

Midstream, clean catch urine, single specimen collection procedure

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

18.1. Urine specimens, except those obtained by catheterization or suprapubic aspiration, are collected by the patient. Patients should be instructed on how to collect urine via midstream, clean catch to minimize contamination by vaginal secretions, skin flakes, smegma, pubic hair, powders, oils, lotions and other extraneous materials. Specimens are not to be recovered from diapers.

18.2. Equipment and Supplies

18.2.1. Urine Collection and Transport Kit:

- a. 4.5oz screw-cap sterile specimen cup with integrated sampling device
- b. Sterile gray top tube with lyophilized maintenance formula for microbiology, 5mL draw
- c. Cleansing towelette

18.2.2. Yellow top, plastic conical 8mL container for urinalysis

18.2.3. Biohazard specimen transport bag

18.3. Patient Instructions

18.3.1. Emphasize handwashing and general cleanliness when instructing patients

18.3.2. Give patient a properly labeled specimen container from the Urine Collection and Transport Kit

18.3.3. Give verbal explanation and also the written instructions from the collection kit regarding midstream clean catch urine collections

18.3.4. Instruct the patient to secure the lid of the specimen container after collection to prevent leakage

18.4. Collection Procedure

18.4.1. Open bag and remove cup and towelette

18.4.2. Unscrew cap of the cup. Place cap on counter with "straw" facing upward. **Do not touch the inside of cup, cap, or straw.**

18.4.3. Cleanse with towelette as follows

a. Male

- If not circumcised – hold foreskin back before cleansing
- Wipe head of penis in a single motion with the first towelette
- Repeat with a second towelette
- Urinate a small amount into toilet or bedpan
- [Patient Education Clean Catch Male](#)

b. Female

- Separate the labia
- Wipe inner labial folds from front to back with a single motion with the first towelette
- Wipe down through center of labial folds with a second towelette
- [Patient Education Clean Catch Female](#)

18.4.4. Place cup under stream and continue to urinate into cup and collect specimen

18.4.5. Finish voiding into toilet or bedpan

18.4.6. Replace cap on cup. Tighten cap securely.

18.4.7. **Caution: sharp needle under cap label. Do not remove label from cap**

18.5. Specimen Transfer

18.5.1. Transfer urine to secondary container(s):

- a. Place rubber cap of secondary container onto the sampling needle and puncture. The secondary container will fill automatically.
- b. Repeat with additional containers if necessary
- c. Label secondary container(s) with patient legal name and medical record (identification) number.

18.5.2. Place secondary container in a securely sealed biohazard specimen transport bag one container per bag.

- a. Place requisition form in outer pocket / document pouch
- b. Microbiology request – gray top tube
- c. Other urine analysis – yellow top conical tube

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

18.5.3. Transport to laboratory within one hour of collection. If the specimen cannot be transported immediately, refrigerate at 2 - 8°C after collection.

18.6. Urine, random specimen collection procedure (NOT the preferred specimen for culture)

- 18.6.1. Unscrew cap of the cup. Place cap on counter.
- 18.6.2. Place cup under stream and continue to urinate.
- 18.6.3. Finish voiding into toilet or bedpan.
- 18.6.4. Replace cap on cup. Tighten cap securely.
- 18.6.5. Transfer to 8 mL yellow top urine tube.
- 18.6.6. Label with patient's legal name and medical record (identification) number.
- 18.6.7. Place secondary container in a securely sealed biohazard specimen transport bag, one container per bag.
- 18.6.8. Place requisition form in outer pocket / document pocket.
- 18.6.9. Transport to laboratory within one hour of collection. If the specimen cannot be transported immediately, refrigerate at 2 - 8°C after collection.

18.7. Urine, 24 hour collection procedure

****Some 24 hour urine tests require the addition of a preservative, if in doubt always consult with the laboratory prior to having the patient start the collection****

18.7.1. Obtain appropriate preservative and place into the 24 hour urine container labeled with the patient's legal name and medical record number. Affix hazardous material warning label to the container and communicate precautions to the patient. Repeat if additional containers are required.

- a. Acetic acid – Use premeasured aliquot (25 mL) per 24 hour urine collection (add solution to container at beginning of collection)
- b. Fresh only or no preservative required – refrigerate during collection period unless otherwise noted

18.7.2. Collection Procedure

- a. Have patient void and empty bladder. Discard this urine and note the time on the container.
- b. Save all urine voided during the next 24 hours in the designated container.
- c. At the end of the 24 hours have the patient void and add this urine to the container.
- d. Send the specimen to the lab with the appropriate requisition, properly filled out.
- e. [Patient Education 24 hour urine collection sheet](#)

19. COLLECTION OF SPECIMENS FOR MICROBIOLOGY CULTURE

19.1. Proper collection of specimens for microbiology culture is essential to provide accurate patient test results. To avoid interferences in laboratory methods, it is imperative that the correct procedure for collection and handling of specimens be followed. Meticulous site preparation is paramount to accurate culture results.

19.2. General Considerations

- 19.2.1. Verify patient identification using at least two identifiers
 - a. **Patients with an identification bracelet:** double-check legal name and medical record number and have patient verbally verify their identity by stating legal name and date of birth. Compare with information on identification bracelet, test request and specimen labels.
 - If the patient is unable to verbally verify, double check legal name and medical record number against the patient bracelet
 - Notify the patient's professional caregiver (or phlebotomist supervisor) if there are any discrepancies in the name or medical record number
 - b. **Patients without an identification bracelet:** match verbal information to test request and/or specimen labels
 - Verify identity by asking the patient to state their legal name and date of birth.
 - c. **Patients who are unable to participate in the identification verification process:** if the patient has a language barrier, or may be semiconscious, unconscious, comatose, or cognitively

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

impaired, ask the patient's health care professional, a relative, or a friend to identify the patient by providing, not affirming, the same information outlined in 19.2.1.a

- Document the first and last name and title of the individual who has identified the patient (if healthcare professional) or relationship to the patient in the specimen or patient record
- 19.2.2. Obtain specimens prior to administration of antimicrobial therapy whenever possible.
- 19.2.3. Indicate antibiotic(s) administered on the laboratory requisition form.
- 19.2.4. Collect specimens in appropriate sterile leak-proof container, adequate for placement as well as removal of specimen. Refer also to the individual test listings for specimen requirements.
- 19.2.5. Close container securely to prevent leaking. Label container with patient's legal name and medical record number. Place container in a securely sealed biohazard specimen transport bag. **Leaking specimens are not acceptable.**
- 19.2.6. Indicate exact site of specimen, collect date and collect time on requisition form.
- 19.2.7. Transport to the laboratory immediately.

19.3. General Information for Swab Collection



19.4. Specimens for Anaerobic Culture

- 19.4.1. Generally, specimens for anaerobic culture should be obtained by closed puncture aspiration into a sealed container under strict aseptic conditions. Do not submit needles to the laboratory. Transfer aspirates from needle and syringe into a sterile tight-sealing container. Soft tissue infections may be cultured by injections of 1-2 mL of sterile saline into the infected site with withdrawal of the saline and tissue fluid into the syringe that is immediately injected into a sealed container. Tissue biopsies collected surgically are also acceptable.
- 19.4.2. Collection of anaerobic specimens with swabs is highly discouraged, due to the small volume of specimen collected and the tendency to swab surface sites that contain normal anaerobic flora. If a swab must be used, it must be a BD or Remel E-swab Transport System.
- 19.4.3. Decontamination of abscess and wound surfaces should be performed by washing area with providone iodine or similar antiseptic that is allowed to remain on the skin for at least one minute.
- 19.4.4. Refer to the table (**Table 1**) below for appropriate sites for anaerobic culture. Sites that involve contamination with normal anaerobic flora are rejected for anaerobic culture by the laboratory.
- 19.4.5. Specimens for anaerobic culture should be maintained at room temperature and be received in the laboratory within 30 minutes of collection. If an anaerobic transport media is used, specimen should be received in the laboratory within two hours of collection.

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

Table 1: Appropriate Anaerobic Culture Sites and Methods

Site	Acceptable Specimens	Method	Unacceptable Specimens
Head and Neck	Abscess Biopsy	Decontaminate abscess surface and aspirate contents with needle and syringe. Biopsy specimens should be surgically collected. Remove needle before submitting to the laboratory	Throat swabs Nasopharyngeal swabs Gingival swabs Superficial material collected with swabs
Respiratory Tract	Transtracheal aspirate Percutaneous lung puncture material Surgically obtained biopsy material Bronchoscopic material obtained by protected brush Pleural fluid Sinus aspirates		Sputum swabs Throat swabs Nasal swabs Endotracheal aspirate Sinus washings or swabs Bronchoscopic specimens not specially collected
Central Nervous System	Abscess aspirate CSF from indwelling shunt Surgically obtained biopsy material		CSF from lumbar puncture
Abdomen / GI Tract	Peritoneal fluid Abscess aspirate Surgically obtained biopsy material	Aspirate with syringe and needle. Remove needle before submitting to the laboratory	Stool Intestinal contents Anal/rectal abscess Surface swabs from mucous membranes
Urinary Tract	Suprapubic aspirate Surgically obtained biopsy material		Clean catch urine Catheterized urine Nephrostomy urine
Female Genital Tract	Culdoscopy specimens Endometrial aspirate Abscess aspirate IUD Actinomyces screen Surgically obtained biopsy material	Endometrial aspirates should be obtained by suction or protected catheter.	Vaginal swabs Cervical swabs Genital surface swabs
Bones and Joints	Surgically obtained biopsy and aspirate material		Superficial material collected with swabs
Soft Tissue	Aspirates Sinus tract aspirate Surface ulcer deep aspirate Open wound margin deep aspirate Surgically obtained biopsy material	Aspirates are obtained by syringe and needle. Remove needle before submitting to the laboratory. Sinus tract syringe aspiration using small plastic catheter threaded into infected site. Wound and ulcer surfaces should be decontaminated.	Superficial material collected from skin surface or edges of wound

19.5. Body Cavity Fluids Specimens

19.5.1. Preferred specimens

- a. Aseptically obtained aspirate submitted in a sterile screw-top tube

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

19.6. Eye Specimens

19.6.1. Preferred specimens

- a. Conjunctivitis
 - Sterile swab with sterile saline or broth is touched to involved area and directly inoculated onto appropriate plates. If viral or chlamydial infection suspected, place swab in viral transport media.
 - Scrape conjunctiva with sterile metal spatula and prepare thinly spread on dried smears.
- b. Corneal infections
 - Culture conjunctiva as above
 - Anesthetize cornea with 0.5% proparacaine hydrochloride
 - Under slit lamp control scrape base and margin of ulcer. Use scrapings to prepare slides and direct culture of appropriate plates.

19.7. Genitalia Specimens

19.7.1. Special patient preparation

- a. Genital cultures in females should be obtained via speculum under direct observation

19.7.2. Preferred specimens

- a. See individual cultures in Master Test Listing
- b. Routine bacterial cultures of vagina, vulva or cervix surface drainage are not performed. The following testing listed in the table (**Table 2**) below is available based on the suspected infectious organism or clinical presentation.

Table 2: Microbiology orders for vaginal, cervical and vulva specimens

Organism Suspected	Order	Comments
<i>Yeast/Candida</i>	Screening culture, yeast or vaginitis DNA probe test	DNA probe requires specific AFFIRM tube collection
Group B Streptococcus	Beta Strep vaginal screening by PCR	For prenatal screening, should be rectal/vaginal swab combination
<i>Listeria</i>	Genital culture	Specify suspected organism in IHIS comment field or on requisition
<i>Chlamydia trachomatis</i> or <i>Neisseria gonorrhoeae</i>	Chlamydia/N gonorrhoeae amplified (PCR test) Neisseria screening culture Chlamydia culture	The amplified test is much more sensitive than culture. Collect from vagina, urethra, vaginal self-collect or urine for the amplified test. Submit the Abbott Multi-collect Specimen Collection Kit for all sources. Follow instructions on package insert for collection and transport. For Neisseria culture, collect from endocervix, urethra, or rectum. For chlamydia culture, submit in viral transport tube.
<i>Gardnerella</i>	Vaginitis DNA probe test	Test requires specific AFFIRM tube collection
<i>Trichomonas</i>	Vaginitis DNA probe test	Test requires specific AFFIRM tube collection
Vaginosis/vaginitis	Vaginitis DNA probe test	Culture is not acceptable method to diagnose bacterial vaginosis
<i>Herpes simplex</i>	<i>Herpes simplex</i> PCR	Submit swab in Viral Transport Media

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

<i>Haemophilus ducreyi</i>/Chancroid or Syphilis lesion	Order a sendout test in IHIS	Specimen is sent to the CDC. Notify the send out lab at 293-8375. Specify suspected organism in IHIS comment field or on requisition.
Human Papilloma Virus (HPV)	HPV high risk probe	Use cytology Sure Path or Thin Prep collection vial
Toxic Shock Syndrome	Genital culture is not appropriate	Call microbiology lab at 293-8676 if guidance is needed
Swab of Wound, Lesion, Ulcer or Abscess on Vaginal Wall, Vulva, Labia or Cervix	Genital culture Anaerobe culture (if indicated)	Specify wound, lesion, ulcer or abscess in IHIS specimen site field. Anaerobes are appropriate from an abscess or surgically collected tissue from these areas
Other Organism		Call microbiology lab at 293-8676 if guidance is needed

19.8. MRSA Screen Anterior Nares, PCR: BMTU Only

19.8.1. Collect anterior nares swab specimens with BBL/Copan™ Dual Culture Swab and Transport System (red cap swab) only.

19.8.2. Prepare swabs

- a. Open the swab collection device wrapper and remove the clear plastic transport tube cap.
- b. Leave the red capped paired swabs and transport tube in the open wrapper.

NOTE: leave the swabs attached to the red cap at all times.

19.8.3. Specimen collection

- a. Instruct the patient to tilt their head back and insert the paired swabs together approximately 1-2 cm into a nostril, rotating the swabs against the inside of the nostril for three seconds (slight pressure with a finger on the outside of the nose helps to assure good contact with the swab).
- b. Using the same swabs, repeat the procedure in the second nostril.
- c. Place the swabs into the transport tube. Make sure the swabs go all the way to the bottom of the tube where they rest on the sponge. Make sure the red cap is closed tightly.
- d. Label swab container with two patient identifiers and send to the Microbiology Lab.

19.9. Specimens for Mycobacteria Culture

19.9.1. Special patient preparation

- a. Specimens should be collected before initiation of therapy since even a few days treatment may render the culture negative.
- b. Sputum – the patient should be instructed to cough deeply and expectorate sputum into proper container. If the patient is unable to produce sputum, sputum induction may be produced by postural drainage, saline nebulization or chest percussion.
- c. Gastric lavage – since the objective of gastric lavage is to obtain swallowed sputum, the specimen should be obtained at least eight hours after the patient has eaten or taken oral medications. An early morning specimen is preferable.

19.9.2. Preferred specimen

- a. Sputum - 10 cc first morning sputum or induced sputum. Collect three specimens, at 8-24 hour intervals (24 hours when possible) with at least one first-morning specimen. 24-hour sputum collections are not recommended.
- b. Urine – three consecutive clean voided early morning specimens. 24-hour urine collections are not recommended.
- c. Skin – In the case of suspected mycobacterial infections, tissue is the recommended specimen.
- d. Refrigerate all specimens if transport will be delayed.

19.10. Nasopharynx Specimens

19.10.1. Preferred specimen

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

- a. Nasopharyngeal swab comprising a malleable wire with Teflon, calcium alginate (or equivalent) coated nontoxic tip inserted through nose into nasopharynx. The swab should be rotated gently and maintained in the nasopharynx for at least 15 seconds. The swab should be inserted into the appropriate transport medium for test requested and submitted to the laboratory as soon as possible. Appropriate transport media include universal transport media for viral testing, E-swab, and pertussis swab systems.

19.11. Skin Specimens

19.11.1. Special patient preparation

- a. The area must be disinfected as for a blood culture. Iodine must be thoroughly removed. In absence of lesions that can be cultured readily, these specimens may be of no help.

19.11.2. Preferred specimen

- a. Aspirate or pus from bullae, vesicles and abscesses
- b. Material from interior of lesions is preferred over surface material
- c. Scrapings or hair, or nail clippings for dermatophytes
- d. Swabs are of limited value
- e. In case of suspected mycobacterial infection, tissue is the recommended specimen

19.12. Sputum Specimens:

19.12.1. Special patient preparation

- a. The patient should be instructed to cough deeply and expectorate sputum into proper container. If the patient is unable to produce sputum, sputum induction may be effected by postural drainage, saline nebulization, or chest percussion.

19.12.2. Preferred specimen

- a. A single 2 mL minimum of early morning freshly expectorated sputum is preferred.

19.13. Stool Specimens

19.13.1. Special patient preparation

- a. Avoid antibiotic administration prior to takin specimens

19.13.2. Preferred specimen

Test	Collection Container	Special Requirements
Stool Culture	3-tube kit <u>preferred</u> , or stool in sterile container, or two rectal swabs (pediatric only)	No more than two specimens per patient should be submitted for culture. Collect at least a day apart. If patient has been hospitalized for more than three days and develops diarrhea, consult with Microbiology lab director before submitting specimens for stool culture.
Comprehensive Ova and Parasite Exam Parasite Screen	3-tube kit <u>preferred</u> , or stool in sterile container	Specimen is sent to Quest Laboratories for testing. Comprehensive ova and parasite exams should only be ordered on patients with a travel history to a developing country, in immunocompromised status, or if a parasite other than <i>Giardia</i> , <i>Cryptosporidium</i> or <i>E histolytica</i> is suspected. List in order entry which of these conditions applies, and if a parasite is suspected please name it. No more than 2-3 specimens should be submitted for comprehensive exam, collected at least a day apart. Send one specimen initially for parasite screen, however if the patient

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

		remains symptomatic a second specimen may be sent. If patient has been hospitalized for more than four days and develops diarrhea, consult with Microbiology lab director before submitting specimens for parasite exams. If <i>Microsporidium</i> is suspected, inform lab, as this is a separate, referred test.
C. difficile toxin by PCR	3-tube kit <u>preferred</u> , or stool in sterile container	Submit only one unformed or watery stool specimen. Refrigerate if unable to deliver to lab within eight hours. Do not send another specimen during that diarrheal episode, or for at least three days. If initial test is positive, subsequent specimens submitted within seven days will be rejected. Formed stool will be rejected.
Pinworm Preparation	Special collection kit (SWUBE) available from lab	Do not send stool. If SWUBE is unavailable, submit CLEAR scotch tape on a sterile slide. Opaque tape will be rejected.
Fecal Fat	3-tube kit or stool in sterile container	Specimen is sent to Mayo Laboratories for testing.
Macroscopic Parasite Exam	Sterile container	Submit worm or worm fragment passed from intestine for identification. Should be visible to eye.

19.13.3. Stool can be collected in bedpans, “hats” or sterile wide mouthed containers. It should not be contaminated with urine, toilet paper, or toilet water. Immediately transfer stool to the color coded 3-vial stool transport containers. Add stool to displace liquid to the line indicated on the container. Fill all 3 vials. Tightly close, invert to mix, label specimen containers, and transport in securely sealed biohazard specimen transport bag. Leaking specimens are unacceptable. Stool not in preservative must be delivered to the lab within 1 hour of collection.

19.13.4. If transport on ice is required, place ice in a separate securely sealed biohazard specimen transport bag. Then place into the securely sealed biohazard specimen transport bag containing the specimen. Place the requisition in the outer pocket / document pouch and send to the lab immediately.

19.14. Throat Culture Specimens

19.14.1. Special patient preparation

- a. Avoid antibiotic administration prior to collecting specimens.

19.14.2. Preferred specimen

- a. The preferred specimen is a fresh uncontaminated swab of the posterior pharynx and tonsillar fossa taken under direct visualization with tongue depression to avoid lingual contamination. Any visible exudate should be cultured

19.15. Urine Culture Specimens

19.15.1. Special patient preparation

- a. Avoid antibiotic administration prior to taking specimens.

19.15.2. Preferred specimen

- a. The preferred specimen is clean-catch midstream or catheterized urine submitted in the gray top tube available in the urine collection kit. Leaking specimens are unacceptable. Refer to the *Midstream, Clean-catch Urine, Single Specimen Collection Procedure* for collection instructions. Do **NOT** collect urine from the “hat,” bedpan, or Foley catheter bag for culture. Label urine container with patient legal name and identification number. Specify source (clean catch, catheterized, cystoscopy, suprapubic, etc.) on the requisition.

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

19.16. Wound Culture Specimens

19.16.1. Special patient preparation

- a. Avoid antibiotic administration until after specimen is obtained. Disinfect the surrounding area with several changes of sterile saline prior to obtaining specimens. Disinfect surface with antiseptic for anaerobic culture.

19.16.2. Preferred specimen

- a. The preferred specimen is a discharge or aspirated material after surface is cleaned, disinfected or removed (i.e. debridement). The specimen should be obtained from the deep or active part of the wound.
- b. Exudated tissue is preferable to swab specimens, particularly if mycobacteria, fungi or anaerobes are suspected.

19.17. Specimens for *Neisseria gonorrhoea/Chlamydia trachomatis* by Amplified Detection

19.17.1. Swab specimens must be collected using Abbott Multi-collect Specimen Collection Kit

19.17.2. Submit only ONE of the following specimens

a. **Clinician collected vaginal swab (Females only)**

- **CAUTION:** Do not expose swab to transport buffer before collection
- Collect specimen using an Abbott Multi-collect Specimen Collection Kit as follows:
 1. Discard disposable pipette. It is not required for vaginal collection
 2. Remove the sterile swab from the paper wrapper, taking care to not touch the tip of the swab or lay down on any surface.
 3. Insert the white tip of the swab approximately two inches into the opening of the vagina.
 4. Gently rotate the swab 15 to 30 seconds against the sides of the vagina
 5. Gently remove the swab
 6. Handle the cap and tube carefully to avoid contamination.
 7. Unscrew the transport tube cap and immediately place the specimen collection swab inside the transport tube so that the white tip is down.
 8. Carefully break the swab at the scored line on the shaft; avoid splashing of contents
 9. Recap the transport tube. Ensure that the cap is sealed tightly.
 10. Label the transport tube with patient's legal name, medical record number, and date and time of collection.
 11. Send specimen at room temperature or refrigerated.

- **NOTE:** Specimen source is required on request form for processing

b. **Urethra (Males only)**

- Collect specimen using Abbott Multi-collect Specimen Collection Kit as follows:
 1. Instruct patient not to urinate for one hour prior to collection
 2. Discard disposable pipette. It is not required for urethral collection
 3. Remove the sterile swab from the paper wrapper, taking care to not touch the tip of the swab or lay down on any surface.
 4. With a rotating movement, insert swab (white shaft) 2 cm to 4 cm into urethra.
 5. Once inserted, rotate swab gently at least 1 full rotation using sufficient pressure to ensure swab comes into contact with all urethral surfaces. Allow swab to remain inserted for 2 to 3 seconds.
 6. Place swab in transport tube provided in collection kit. Snap off swab at score line so swab fits into closed tube.
 7. Cap tube securely, and label tube with patient's legal name, medical record number, and date and time of collection.
 8. Send specimen at room temperature or refrigerated.

- **NOTE:** Specimen source is required on request form for processing

c. **Urine (Males and Females)**

- Collect specimen using Abbott Multi-collect Specimen Collection Kit as follows:
 1. Instruct patient not to urinate for at least 1 hour prior to specimen collection and not to clean genital area prior to collection.

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

2. Collect the first portion (approximately 20 mL to 30 mL) of voided urine (first part of stream--**not midstream**) into a screw-capped, sterile, plastic, preservative-free specimen collection container.
3. Transfer about 2 mL of urine into the urine specimen transport tube, using the disposable pipette provided, immediately after collection. The correct volume of urine has been added when the fluid level is viewable within the window on the urine transport tube. Discard pipette after single patient use.
4. Cap tube securely and label with patient legal name, medical record number, and date and time of collection. Do not obscure the volume window on tubes when using adhesive labels.
5. Send urine transport tube at room temperature or refrigerated.
 - **NOTE:** Specimen source is required on request form for processing

19.18. Specimens for Tzanck Prep/Direct Examination for Herpes Simplex and/or Varicella Zoster

19.18.1. Proper collection of specimens is essential to provide accurate patient test results. To avoid interferences in laboratory methods, it is imperative that the correct procedure for collection and handling of specimens be followed. Meticulous site preparation is paramount to accurate culture results.

19.18.2. General Considerations

- c. Tzanck preparations can yield a rapid morphologic diagnosis of Herpes Simplex and/or Varicella Zoster infections from skin or mucous membrane lesions by the identification of characteristic viral cytopathic changes in epithelial cells. Both the quality of the specimen and the stage of the lesion sampled influence the sensitivity of this method. Specimens obtained from an early vesicular lesion have a sensitivity of 67% with crusted lesions yielding a sensitivity of only 17%.
- d. This method is not as sensitive as culture; therefore it is recommended that a viral culture swab (with separate order) also be submitted.

19.18.3. Procedure

- a. Obtain collection kit
- b. Verify patient identification using at least two identifiers
 - **Patients with an identification bracelet:** double-check legal name and medical record number and have patient verbally verify their identity by stating legal name and date of birth. Compare with information on identification bracelet, test request and specimen labels.
 1. If the patient is unable to verbally verify, double check legal name and medical record number against the patient bracelet
 2. Notify the patient's professional caregiver (or phlebotomist supervisor) if there are any discrepancies in the legal name or medical record number
 - **Patients without an identification bracelet:** match verbal information to test request and/or specimen labels
 1. Verify identity by asking the patient to state their legal name and date of birth.
 - **Patients who are unable to participate in the identification verification process:** if the patient has a language barrier, or may be semiconscious, unconscious, comatose, or cognitively impaired, ask the patient's health care professional, a relative, or a friend to identify the patient by providing, not affirming, the same information outlined in 19.18.2
 1. Document the first and last name and title of the individual who has identified the patient (if healthcare professional) or relationship to the patient in the specimen or patient record
- c. Open/un-roof a fresh blister with a scalpel or sterile needle. Use the blunt end of a sterile cotton tipped swab on mucous membranes
 - Crusted and healing lesions are rarely positive unless vigorous effort is made to obtain epithelial cells.
 - Exudate, pus and crust are not appropriate specimens. The diagnostic intranuclear inclusions are only presented in epithelial cells.
- d. Thinly spread the material onto two glass slides limiting the distribution of the specimen to the area indicated on the slide by a circle.
 - Prepare additional slides if a large amount of material is obtained.

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

- e. Label slides with patient legal name and identification number.
- f. Place slides in provided container and return to laboratory.

19.19. Vaginal Specimen Collection for Vaginitis Testing

NOTE: The BD Affirm VPIII Ambient Temperature Transport System (ATTS) should be used for collection whenever possible and is in stock in both UH and OSU East Emergency Departments.

- 19.19.1. Label the Sample Collection Tube (SCT) with the patient identification information. Include the time the specimen was collected.
- 19.19.2. Place the patient in position for a pelvic examination.
 - a. Insert an UNLUBRICATED speculum (WITHOUT JELLY OR WATER) into the vagina to permit visualization of the posterior vaginal fornix.
 - b. Using the sterile swab, obtain a specimen from the posterior vaginal fornix. Twist or roll the swab against the vaginal walls two or three times, ensuring the entire circumference of the swab has touched the vaginal wall.
 - c. Swab the lateral vaginal wall while removing the swab.
- 19.19.3. Immediately place the swab in the Sample Collection Tube.
- 19.19.4. With the swab touching the BOTTOM of the collection tube, grasp the pre-scored handle of the swab just above the top of the tube and bend until the swab breaks.
- 19.19.5. When the swab is fully inserted into the collection tube, the score mark on the swab is approximately 1 cm above the top of the collection tube.
- 19.19.6. Discard the broken handle into an infectious waste container.
- 19.19.7. Place the cap over the exposed end of the swab and firmly press the cap onto the tube. The cap will “snap” onto the tube when it is properly seated.
- 19.19.8. Place the capped Sample Collection Tube into a securely sealed biohazard specimen transport bag.
- 19.19.9. **Stability:** Transport the vaginal specimen to the processing area as soon as possible after collection.
 - a. The Affirm VPIII ATTS collection system is designed to stabilize the nucleic acid and inhibit growth of *Candida* sp., *Gardnerella vaginalis* and *Trichomonas vaginalis* during specimen transport at ambient temperature (15-30°C) and has also been qualified for transport use refrigerated at 2-8°C.
 - b. Testing on samples collected in the Affirm VPIII ATTS can be tested up to 72 hours after collection.
 - c. *Exception:* Samples not collected in the Affirm VPIII ATTS must be received and tested within one hour for specimens stored at 15-30°C, or no longer than four hours for specimens stored at 2-8°C.

Affirm VPII Ambient Temperature Transport System Collection (ATTS)

- a. Break the ampule inside the ATTS reagent dropper by firmly squeezing the dropper, **one time only**, close to its center with finger and thumb.

NOTE: After the ampule is broken, do not repeatedly squeeze and release dropper as this may cause injury
- b. Invert dropper and dispense all fluid from the dropper into the Sample Collection Tube. Discard dropper.
- c. Collect patient specimen as described in section 19.19 (Vaginal Specimen Collection).

20. COLLECTION OF FLUIDS

- 20.1. Specimen types for body fluid analysis include (but not limited to) amniotic fluid, CAPD, cerebral spinal fluid, pericardial fluid, peritoneal fluid, pleural fluid, drainage and synovial fluid.
- 20.2. Fluid specimens are accepted in sterile tubes from collection kits or other appropriate containers. Black screw top tubes are the preferred collection vial for most fluid specimens for cell counts and fluid chemistries.
- 20.3. Do not send fluids in syringes with needles attached.

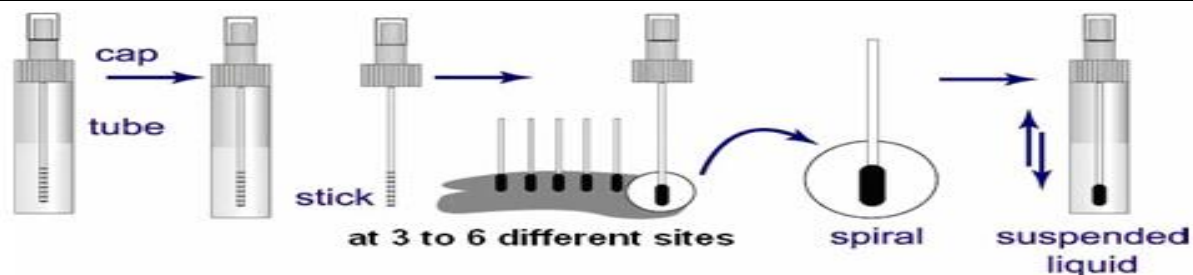
**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

- 20.4. Do not send fluids in transfusion bags, or IV bottles for Hematology or Chemistry analysis.
- 20.5. Do not send large volumes of fluid (more than 500 mL). Pour into appropriate containers or contact laboratory for additional instructions/clarification.
- 20.6. Fluid cannot be collected in special tubes that require a needle to extract for cell counts and fluid chemistries. The laboratory is unable to process these.
- 20.7. Synovial fluids are collected in one green-stopper sodium heparin vacutainer tube and one lavender-stopper potassium EDTA vacutainer tube. If only one of the above tube types is submitted, the specimen is acceptable for fluid analysis.
- 20.8. Fluid specimens are to be tested within 60 minutes after being received in the laboratory. Cells may begin to lyse after this time.
- 20.9. CSF specimens have priority over all other tests in the laboratory.
 - 20.9.1. CSF tubes are distributed as follows
 - a. Tube #1 to chemistry
 - b. Tube #2 to cytology, immunology and/or sendout
 - c. Tube #3 to microbiology
 - d. Tube #4 to hematology
- 20.10. In accordance with Joint Division Leadership Team criterion, the following standard order priority list has been determined.
 - 20.10.1. Notify the lab if the priority needs modified.
 - a. Aerobic culture
 - b. Cell count with differential
 - c. Anaerobic culture
 - d. Synovasure
 - e. Leukocyte esterase
 - f. Fungus culture
 - g. Acid Fast Bacilli (AFB) culture
 - h. Crystal exam
- 20.11. Due to the invasiveness of fluid collection, mislabeled/unlabeled fluids will be processed, but only after the following conditions have been met:
 - 20.11.1. The unit is notified of the mislabeled/unlabeled specimen.
 - 20.11.2. A physician or nurse signs an *Unacceptable Specimen Form*, taking full responsibility for the proper identification of the specimen.
 - 20.11.3. If a physician or nurse does not label or re-label the specimen and sign the *Unacceptable Specimen Form*, results will be filed as .MISLX (MISLABELED) or .UNLX (UNLABELED). The unit must be notified and all pertinent information must be documented on the *Unacceptable Specimen Form* stating that a proper signature was not obtained from the physician or unit nurse.

21. COLLECTION OF SPECIMENS FOR FECAL OCCULT BLOOD TESTING

- 21.1. Collection container is the Hemosure fecal collection tube containing 2.0 mL of extraction buffer.
 - 21.1.1. **NOTE:** If specimen is refrigerated before transfer, allow to come to room temperature.
- 21.2. **Collection on the unit:**

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**



- 21.2.1. Unscrew cap of the fecal collection tube and remove applicator stick.
- 21.2.2. Randomly insert the applicator stick into the fecal sample from three (3) to six (6) times at different sites using only enough stool to cover the grooved portion of the stick. **Do not clump, scoop, or fill the tube.**
- 21.2.3. Return the applicator stick into the fecal collection tube and tighten the cap thoroughly. Shake the tube to mix the sample with the extraction buffer.
- 21.2.4. Label collection tubes with patient legal name, medical record number, as well as date and time of collection.

22. COLLECTION OF SPECIMENS FOR TOXICOLOGY

- 22.1. For specimens regarding the optimal specimen collection time in relation to drug dosing – please refer to the pharmacy policy: *Timing of Blood Draws for Therapeutic Drug Monitoring*.
Pharmacy Policy and Procedures website: <http://www-pharmacy.osumc.edu/>
- 22.2. **Meconium Screen Collection for Drug of Abuse Testing**
 - 22.2.1. Specimen type is meconium. Stool specimens are not acceptable.
 - 22.2.2. A minimum of 1.0 g of sample is required.
 - 22.2.3. Specimen should be transferred to plastic container for submission to lab.
 - 22.2.4. If specimen cannot be tested within eight hours of receipt, store at 2 - 8°C.
- 22.3. **Umbilical Cord Tissue Testing for Drugs of Abuse**
 - 22.3.1. A minimum of 6 inches of umbilical cord is required for testing.
 - 22.3.2. Umbilical cord specimens should be drained of blood, rinsed with saline and transferred into a plastic container for submission to lab.
 - 22.3.3. If specimen cannot be tested within eight hours of receipt, store at 2 - 8°C.

23. COLLECTION OF SPECIMENS FOR ANTICOAGULANT THERAPY

- 23.1. For specimens regarding the optimal specimen collection in relation to anticoagulant therapy – please refer to the OSUWMC Pharmacy Intranet through OneSource for complete information.
Pharmacy Policy and Procedures website: <http://www-pharmacy.osumc.edu/>

24. COLLECTION AND PROCESSING OF NON-HUMAN SPECIMENS

- 24.1. Non-human specimens are collected by OSUWMC Outreach Clients, processed by the University Reference Laboratory (URL) and received by the Central Processing Area (CPA)
- 24.2. Testing of non-human specimens is provided by the Clinical Laboratories. Reference ranges and assay performance are not validated for non-human specimens.
- 24.3. When results are finalized, URL Non-Human Account Types include the comment “*Reference ranges and assay performance not validated for non-human specimens.*”

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

ACCEPTABLE SPECIMENS FOR PATHOLOGY OR CYTOLOGY EXAMINATION

Correct identification of patient specimens is essential for reporting accurate laboratory results. The purpose of this document is to state the standards for identification of specimens and preparation of requisition forms. The Clinical Laboratory Improvement Act (CLIA) outlined in the Federal Register of February 28, 1992 and updated in the January 24, 2003 rule, mandates rules for Patient Test Management.

Requests for Pathology Services

Pathologic or Cytologic examination will be performed at the written or electronic order of a physician or authorized practitioner.

Specimen Containers

All specimens must be submitted in a rigid, puncture resistant, sealed container. Slides must be submitted in a plastic container or cardboard slide folder.

All specimens submitted must have accurate, complete, and legible patient identification on *each primary* specimen container. Identification of the specimen must include **both** the patient's legal name **and** identification number.

For OSU Health System inpatients: the specimen identification label must be generated from the patient wristband.

ALL patient identification and specimen information must be affixed to the body of the container, not the lid.

The tissue type, site, and orientation must also be specified on each container. If the specimen needs orientation, use sutures to clearly indicate margins, i.e. 1 suture = 12:00, 2 sutures = 3:00. Do not use needles or bent needles for orientation or to affix specimen to another object (such as a tongue depressor). Do not use water-soluble ink. Do not incise the specimen.

Any solution / preservative / fixative in which the specimen is submitted must also be specified on the container and requisition form.

Each slide submitted for examination must be labeled with patient's legal name and identification number. Do not label the outside of the container (folder) with patient identification.

Specimen Requisition

A written or electronic request form must accompany every specimen and the information on the specimen and requisition must be identical. The requisition form must be **completely legible** and contain **all** of the following information:

- Patient's legal name
- Date of birth
- Gender
- Identification number
- Location
- Attending physician
- Ordering physician (if different from attending) name and **signature required**
- **For non-OSU practitioners:** Practitioner NPI number
- Collection / procedure date and time
- Service(s) requested
- Source of specimen
- Pertinent clinical history
- For **Gynecologic Pap Exam:** last menstrual period, previous Pap Smear and history of hormone therapy
- **Note-for outpatients also:** diagnosis (ICD-10) code for clinical indications for examination request; i.e. signs, symptoms, diagnosis

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

The tissue type, site and orientation of the specimen must be indicated on the request form. Indicate the total number of containers submitted on the form. When submitting multiple containers, **designate EACH tissue type collected and the site of collection** (i.e. Container A: skin, right forearm; Container B: skin, left upper arm).

For Products of Conception (**POC**) provide a **gestational age** in weeks on the requisition form.

For all cases that are potentially **breast cancer, either primary or metastatic**, the time that the specimen was removed from the patient must be indicated. If the specimen is placed in formalin before delivery to pathology, the time fixation began must be noted, as well.

Pertinent clinical information (i.e. pertinent history, pre-surgical diagnosis) must also be specified on the request form.

The responsibility for labeling a specimen and verifying all information on the requisition is that of the person who collects the specimen.

Specimen Orientation

1. If the specimen requires orientation, use sutures to clearly indicate margins, i.e. 1 suture = 12:00, 2 sutures = 3:00.
2. Do not use needles / bent needles for orientation or to affix specimens to another object (such as a tongue depressor).
3. Do not incise the specimen.

Specimen Transport

In accordance with OSHA safety regulations, all primary specimen containers must be leak proof and placed in a secondary leak proof container for transport to the laboratory. Securely sealed biohazard specimen transport bags are used for this purpose. Requisition forms are to be placed in the *outer* pocket / document pouch.

**For surgical specimens originating at OSUWMC Main Campus Hospital:
Surgical Pathology – 2 Gross Room Laboratories
Courier Delivery, Telephone and Hours of Operation:**

Delivery: Surgical Pathology Gross Room Laboratory at OSUWMC Main Campus
E415 Doan Hall
410 West 10th Avenue
Columbus, OH 42310
Telephone: (614) 293-4875
For results, call: (614) 293-5905
Hours of Operation: Monday – Friday 7:00AM to 7:30PM
On-call Pathologists are available 24 hours / 7 days
Surgical Pathology Resident pager: 293-PAGE (7243) ext. 9870

-OR-

Surgical Pathology Gross Room Laboratory – James CCCT
James CCCT – Room D576
460 West 10th Avenue
Columbus, OH 42310
Telephone: (614) 293-0131
Hours of Operation: Monday – Friday 6:00AM to 6:00PM
On-call Pathologists are available 24 hours / 7 days
Surgical Pathology Resident pager: 293-PAGE (7243) ext. 9870

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

**USE THIS LABORATORY FOR ALL INTRAOPERATIVE CONSULTATIONS
AND LYMPHOMA WORKUPS**

Mailing Address (overnight deliveries):

The OSU Wexner Medical Center
Surgical Pathology Gross Room
E415 Doan Hall
410 West 10th Avenue
Columbus, OH 43210

For surgical specimens originating at OSUWMC East Campus Hospital:

Delivery: UHE Pathology Laboratory

3rd Floor, North Wing, Room N329
1492 East Broad Street
Columbus, OH 43205
Telephone: (614) 257-3980
Processing Lab Hours of Operation: Monday – Friday 7:00AM to 4:00PM
On-call Pathologists are available 24 hours / 7 days
Surgical Pathology Resident pager: 293-PAGE (7243) ext. 9870

**Cytology Processing Laboratory:
Courier Delivery, Telephone and Hours of Operation:**

Delivery: Cytology Processing at OSUWMC

S326 Rhodes Hall
410 West 10th Avenue
Columbus, OH 43210
Telephone: (614) 293-8687
Processing Lab Hours of Operation: Monday – Friday 8:30AM to 6:30PM
Cytology Office Hours: Monday – Friday 8:00AM to 5:00PM

Mailing Address (overnight deliveries):

The OSU Wexner Medical Center
Division of Cytopathology
S305 Rhodes hall
450 West 10th Avenue
Columbus, OH 43210

Collection of Specimens for Surgical Pathology:

Direct Immunofluorescence (IF) Examination

Utilizes antisera directed against the following proteins: IgG, IgA, IgM, C3, C1q, submit specimen in tissue transport medium or Zeus Science Tissue "Fixative". Specimens obtained at OSUWMC Main Campus contact the Surgical Pathology Gross Room at (614) 293-4875 to obtain. Specimens obtained at OSUWMC East Campus; contact UHE Lab at 614-257-3980. Specify "*for IF Only*" in red ink on the request form.

Biopsy, Heart, Diagnostic (Native, Transplant)

- For routine examination by Light Microscopy: submit specimen in 10% neutral buffered Formalin.
- For Immunofluorescence examination of in-house patient specimens: submit specimen in saline moistened gauze.

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

- For Electron Microscopy examination: submit in glutaraldehyde (0.5 to 3% buffered). An acceptable substitute is 10% buffered formalin.

For questions and/or concerns about unusual specimens, please contact the EM Lab at (614) 293-8806.
Deliver all specimens to 415E Doan Hall before 5:00PM Monday - Friday
If closed, notify resident on call pager at 293-PAGE (7243) ext. 9870

Same day processing: if necessary, heart biopsies can be processed the same day if:

- Arrangements have been made through the Pathologist on Transplant Service
- Deliver biopsies directly to the Surgical Pathology Lab, E415 Doan Hall, by 2:00PM Monday – Friday
- **Test not performed at UHE**

Biopsy, Liver Transplant, Diagnostic

Submit liver transplant biopsy in 10% neutral buffered Formalin. Deliver to E415 Doan Hall. If Surgical Pathology is closed, place specimens and paperwork in the refrigerator outside E415 Doan.

After 5:00PM and all hours on weekends, notify the pathology resident on call about the specimen.

Liver transplant biopsies are routinely processed on Saturday if specimens are submitted before 8:00PM on Friday.
For non-routine liver biopsy, the respective Transplant Service fellow must contact the Pathology resident pager at 293-PAGE (7243) ext. 9870. **Test not performed at UHE.**

Biopsy, Renal, Diagnostic

Testing includes light microscopy, immunofluorescence, and electron microscopy. Submit renal biopsy for routine examination in saline moistened gauze. If the physician who performs the biopsy has access to a dissecting microscope, divide and submit the tissues in the appropriate fixatives including 10% buffered formalin, Tissue Transport Medium or Zeus Fixative. Deliver biopsy to E415 Doan Hall. If Surgical Pathology is closed, notify the pathology resident on call to make arrangements for specimen delivery.

Transplant renal biopsies are routinely processed same day (STAT) if received by 2:00PM weekdays.

Saturday and Sunday: stat processing is also provided if necessary. Native kidney biopsies can be processed stat, if

- Arrangements have been made through the Pathologist on renal/transplant service, and
- Deliver biopsies directly to the Surgical Pathology Lab, E415 Doan Hall
- For UHE specimens call the lab at (614) 257-3980 in advance of procedure

Biopsy, Skin Salt Cleaved

Submit specimen in saline soaked gauze (unfixed) or tissue transport medium, Zeus fixative or Michel's medium. The submitting physician should state on the requisition that the specimen should be treated as "skin salt cleaved". Contact the immunofluorescence lab at (614) 293-3572 for additional information.

Bone Marrow, Diagnostic

Specimens must be fixed in 10% buffered formalin. Label specimen container with date and time when the specimen was placed into fixative. Specimens must be properly identified and labeled with patient demographics and specimen type. Deliver to James D576. If Surgical Pathology is closed, place specimens and paperwork in the refrigerator outside James D576. For UH East specimens, refer to *Bone Marrow Specimen Processing* procedure.

Direct Immunofluorescence - Skin Biopsy

Skin or Oral mucosal Biopsy: call Immunofluorescence Lab at (614) 293-3572 for further information.

Frozen Section, Diagnostic

Specimens must be properly identified and labeled with patient demographics and specimen type. Specimens must be fresh or may be in saline. All specimens must be accompanied by appropriate Intraoperative Consultation form.

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

Results will be reported directly to the physician only. Specimens must be hand carried to Surgical Pathology, James D576 or 3rd floor Pathology Lab at UHE. This procedure is offered 24 hours / 7 days. After 6:00PM and all hours on weekends, notify the pathology resident on call at pager 293-PAGE (7243) ext. 9870. UHE frozen sections outside of the hours of 7:30AM to 5:00PM, Monday - Friday, will be transported to OSU Hospital for processing. Contact the Resident on call ahead to make arrangement. Deliver frozen section specimen with the appropriate requisition to CPA, 3rd Floor North Wing at UHE.

Nerve/Muscle Biopsy

At least 24 hours prior to the procedure, contact the Surgical Pathology Gross Room at (614) 293-4875 or for UH East specimen, (614) 257-3980. Relay patient information, ordering physician, expected procedure date / time and specific clinical indications for testing. **NOTE:** In special cases, unique collection instructions and media are required for proper specimen triage prior to transport to Nationwide Children's Hospital for testing. **Nerve and muscle biopsy procedures requested to go to Nationwide Children's Hospital should not be scheduled/performed during weekends and/or holidays.**

Surgical Specimens, Diagnostic

- OSU Health System Inpatient Specimen Requirements: submit fresh specimens on a saline-dampened Telfa or gauze. **Do NOT immerse in saline.**
- Label specimens with patient demographics and specimen type. All specimens must be accompanied by a completed SurgPath requisition.
- Outpatient and Outreach Specimen requirements: submit routine biopsy in 10% Formalin. A requisition form must accompany each specimen.

Collection of Specimens for Cytology:

Gynecologic Pap Smears – Conventional Smears

- Smear the specimen directly on a glass slide and immediately fix with spray fixative. **Label the frosted end of the slide with a lead pencil. Do not use a marker or pen.** Place the slide in a cardboard mailer.

Liquid Based Pap Smears

- **Thin Prep® Collection Kit**

Method for using the Endocervical Brush/Spatula

1. Obtain an adequate sampling from the ectocervix using a plastic spatula. Rinse the spatula into the PreservCyte Solution vial by swirling the spatula vigorously in the vial ten times. Discard the spatula. Obtain an adequate sampling from the endocervix using an endocervical brush device. Insert the brush into the cervix until only the bottom most fibers are exposed. Slowly rotate ¼ or ½ turn in one direction. **DO NOT OVER ROTATE.**
2. Rinse the brush in the PreservCyte Solution by rotating the device in the solution ten times while pushing against the PreservCyte vial wall. Swirl the brush vigorously to further release material. Discard the brush. Tighten the cap so that the torque line on the cap passes the torque line on the vial. Label the vial appropriately.

Method for using the Broom-like device

1. Obtain an adequate sampling from the cervix using a broom-like device. Insert the central bristles of the broom into the endocervical canal deep enough to allow the shorter bristles to fully contact the ectocervix. Push gently and rotate the broom in a clockwise direction five times.
2. Rinse the broom into the PreservCyt solution vial by pushing the broom into the bottom of the vial ten times, forcing the bristles apart. As a final step, swirl the broom vigorously to further release material. Discard the collection device. Tighten the cap so that the torque line on the cap passes the torque line on the vial. Label the vial appropriately.

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

Urine for Cytologic Exam

Collect all urine, including bladder washings, barbotages and catheterized specimens, in a sterile container with cytology fixative if available. Some experts recommend 3 consecutive early morning specimens for the highest yield. (These should not be first morning specimens). The patient may also be hydrated before collection for a better cell yield. Label all specimens with source and whether they are catheterized or voided. Send to lab immediately. In the event of delayed delivery or no fixative available, refrigerate the specimen.

Cerebral Spinal Fluid for Cytologic Exam

Mix the specimen with an equal part of cytology fixative. Fixative used in Cytology is Cytolyt. If fixative is unavailable, send specimen to Cytology immediately or refrigerate. Once fixative is added to the specimen, no other tests can be performed including Flow Cytometry.

Sputum for Cytologic Exam

The patient should be well-informed about producing a deep cough specimen. After rinsing their mouth, they should expectorate into a wide-mouth plastic container, which contains cytology fixative (Cytolyt). If fixative is not available, refrigerate until it can be promptly delivered to the lab. The container should be labeled properly, placed in a securely sealed biohazard specimen transport bags and sealed. The properly completed requisition should be place in the outside pocket / document pouch.

Bronchial Washings and BAL for Cytologic Exam

Label the collection trap with the patient's legal name, medical record number and source. Place it in a securely sealed biohazard specimen transport bag. Place the properly filled out requisition in the outside pocket / document pouch.

Bronchial Brushes for Cytologic Exam

If disposable brushes are being used, cut the brush off into a tube containing cytology fixative. If fixative is not available, make sure the brush is covered with normal saline. Label the tube with source of the specimen. If not using a disposable brush, upon removing the brush from the bronchoscope, rotate it gently on a glass slide and fix immediately with spray fixative or immerse in 95% alcohol.

Body Cavity Fluids for Cytologic Exam

Collect and send as much body cavity fluid as possible and label the container with the patient label **and** source of specimen. Refrigerate until collection container can be sent to Cytology for processing.

Gastrointestinal Specimens for Cytologic Exam

- **Gastric brushings**
 1. Prepare thin smears on labeled glass slides and spray fix immediately. If using disposable brushes, cut the brush into a labeled plastic screw-capped tube containing cytology fixative or normal saline.
- **Gastric washings**
 1. Mix the fluid with equal parts cytology fixative in a labeled plastic screw-capped collection cup.

Fine Needle Aspirations

Collect the fine needle aspiration in a syringe. Prepare glass slides by expressing material from the needle onto a properly labeled slide, one drop at a time for each slide, and then smear together. Allow the slides to air dry. After the slides are made, place any remaining fluid in a tube containing RPMI or Cytolyt. Submit all slides and remaining fluid tube to Cytology.

**ADMIN-91: Laboratory Guide to Services:
Standards for Acceptable Clinical and Anatomic Pathology Specimen Collection
Department of Clinical Laboratories
The Ohio State University Wexner Medical Center**

- If the specimen requires Flow Cytometry testing, collect in RPMI and clearly mark “For Flow Cytometry” on the container and requisition.
- On the OSUWMC campus, Fine Needle Aspiration collection on palpable lesions by a Cytopathologist or Cytology Fellow may be arranged by calling the Cytology department at (614) 293-8687.