Title: Specimen Submission Guidelines
CAP Checklist: GEN.40050
Document Type: Standard Operating Procedure

COMPLIANCE STATEMENT:

To define how to submit surgical pathology and cytology specimens to the University of Colorado Pathology Department and how to arrange for an autopsy examination. The pathology department maintains and reviews an electronic copy at least biennially.

LABORATORY POLICY:

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<th>Phone</th>
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<td>(720) 848-4653</td>
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<tr>
<td>Specimen Transport</td>
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<td>(720) 848-4421</td>
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<td>Surgical Pathology Laboratory, AIP Room 3.124</td>
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I. EXTENT OF SERVICES
Surgical Pathology is that part of Anatomic Pathology concerned with the study of tissue and organ samples removed from patients to obtain diagnosis of a lesion or disease. The pathologist is therefore able to advise the referring physician as to the nature of the disease, the prognosis, and the need for additional sampling or exploration. Cytopathology is the study and evaluation of cells present in smears, fine needle aspirates and body fluids. Analyses of nuclear and cytoplasmic characteristics permit the diagnosis of various disease processes. An autopsy (also known as a post-mortem examination) is a highly specialized surgical procedure that consists of a thorough examination of a deceased patient to determine the cause and manner of death and to evaluate any disease or injury that may be present.

II. SURGICAL PATHOLOGY
Hours of Operation: 7:30 am to 6:00 pm
The Surgical Pathology Laboratory (Gross Room) is open from 7:30 am to 6:00 pm (Monday-Friday) and the Surgical Pathology Office is open from 8:00 am to 5:00 pm (Monday-Friday), excluding holidays. For assistance after hours and/or on weekends, the Surgical Pathology Resident on-call can be reached by pager, and an Attending Surgical Pathologist is always on-call and can be reached through their pager. Pager numbers of the on-call staff and the on-call schedule are available through amion.com..

During normal office hours:

- Specimens may be sent via the tube system to station #833.
- Specimens may be hand delivered to the gross room window AIP Rm 3.124.
- Specimens may be picked up by a courier or hospital transport and delivered to pathology (see Appendix A for delivery schedule).
- Specimens for intra-operative frozen sections, Stat or Rush cases MUST be hand delivered and given directly to gross room staff with verbal indication that the specimen is Rush, Stat or Frozen. The requisition form MUST be labeled Stat, Rush or Frozen with clinician contact information.
- ALL STAT OR RUSH POST-TRANSPLANT BIOPSIES (LIVER, KIDNEY, LUNG AND HEART) MUST BE HAND DELIVERED TO GROSS ROOM STAFF AND THE REQUISITION FORM MUST BE CLEARLY MARKED.
Definitions of Stat, Rush and Routine Specimens:

- **Stat** – Surgical biopsy specimens received in formalin that require same day processing due to an emergent patient care situation and the pathologic diagnosis will immediately impact or alter the plan of treatment. Only small tissues (biopsies) can be processed Stat. Most ancillary special stains and immunostains cannot be performed in a Stat manner. Results are typically reported via phone call within 6 hours of receipt. If results are required in less than 6 hours, a frozen section may be considered, but must be performed on FRESH tissue.
- **Rush** – Surgical biopsy specimens received in formalin that require a 24-hour turnaround time or less due to an urgent patient care situation. If received in the Surgical Pathology lab by late afternoon, these cases are reported out in the morning of the next business day.
- **Routine** – Surgical pathology specimens in which there is no immediate need for patient results. Most routine specimens will have results reported within 2 business days.

**Policy for after-hours Stat, Rush or specimens requiring intra-operative frozen section analysis or other special analysis of non-fixed tissue:**

- For Stat, Rush or specimens which require an intra-operative frozen section or other special analysis of non-fixed tissue, please call on-call resident (303) 266-3983 7pm-7am nights or weekends who will notify the attending pathologist.
- If reaching the on-call resident is unsuccessful, contact attending pathologist by pager or cell on amion.com
- Hand deliver the specimen to the pathology resident at the gross room (AIP Rm 3.124).
- The requisition form MUST be labeled as Rush, Stat or Frozen.

**Policy for After Hours Routine specimens:**

- Send specimen (and accompanying requisition) to the holding refrigerator in the main clinical laboratory (2nd floor of the Leprino Building).
- Transport will deliver the specimen to surgical pathology in the morning of the next working day.

**Order of Specimen Processing**

- Slides from biopsies and small specimens are usually available for review the first working day following receipt in the pathology laboratory. Turnaround time for these specimens is usually between 24 hours and 48 hours, depending on case complexity and whether special stains or ancillary studies are required.
- Larger resection specimens may require more time for processing and may not be available for examination until two or more days after receipt in the pathology laboratory.
- Surgical Pathology Reports are available through EPIC.
If a case is still in progress, you may contact the Surgical Pathology Office (720-848-4421) and ask to speak to the attending assigned to the case.

**Surgical Pathology Requisition Form**

A completed requisition form must accompany each specimen and must have a minimum of two patient identifiers:

- Affix a patient label or
- if hand written, include the:
  - patient’s full name
  - hospital identification number (medical record number)
  - encounter number (visit number)
  - birth date
  - hospital ward or clinic
  - collection time and date
- The clinical history provided must be accurate and complete to aid the pathologist in correlating signs and symptoms to an appropriate diagnosis.
- List the differential diagnosis in the Pre-op diagnosis area.
- The referring attending physician’s name and/or the name of the responsible physicians, as well as clinical service, must be included and must be legible.
- Include pager numbers if you wish to be contacted with results or a fax number if you wish the report faxed to your office.
- List the specimen type (anatomic site) that corresponds to the specimen type listed on the specimen container.
- If the patient has an infectious disease (e.g., HIV, Hepatitis B or C, tuberculosis) indicate this on the form.

**Routine Specimens**

Each specimen must be labeled with:

- Patient’s full name
- Hospital number (medical record number)
- Anatomic source and site of the specimen (i.e., right upper lobe lung nodule)
- This information must be on a label on the container itself, NOT on the lid of the container
- Place additional specimens in separate and properly labeled containers

**Specimen Fixation:**

Exercise universal precautions when handling and transporting all surgical pathology specimens. Place specimens (see exceptions below) in:
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- Appropriately sized, tightly sealed, approved containers.
- With a volume of 10% formalin at least **10 times that of the tissue volume, if possible.**
- Label each container with a biohazard/formalin warning label.
- **Proper and timely fixation is a critical step in tissue preparation for diagnosis and the importance of this step cannot be overemphasized.**

Formalin is available in the Operating Room and most clinics (see Appendix B for supply vendors). After placing the specimen inside of the appropriately labeled formalin container:

- Place in a sealable biohazard bag (and secure requisition within the proper compartment).
- Seal the bag prior to delivery to the laboratory.
- **Failure to do this may result in rejection of the specimen and delay in diagnosis.**

**Specimen Delivery**

- Bring specimens directly to the Surgical Pathology Laboratory (Gross Room), AIP Room 3.124 between the hours of 7:30 am and 6:00 pm.
- Biopsies or other small specimens may be delivered to the Surgical Pathology Laboratory by pneumatic tube (station #833).
- Each hospital transport’s last pickup route begins at 4:30 pm; please refer to Appendix A for the hospital’s daily transport schedule.
- Biopsies will be processed if received before 5:30 pm.
- **PLEASE PUT SPECIMENS IN THE APPROPRIATE DESIGNATED PICKUP SITE AS EARLY AS POSSIBLE TO MAKE CERTAIN SPECIMENS ARE PROCESSED AS QUICKLY AS POSSIBLE.**
- If cases are held within their respective departments and delivered to Surgical Pathology in batches, there is a high likelihood that the specimen will not be processed the same day and the results will be delayed.

**Extra-Large specimens:** (i.e. limb amputations) should be double-bagged into two large red biohazard bags, labeled on the outside with the patient’s name, hospital number and source of specimen as above. The hospital staff should bring the specimen and associated requisition directly to the Surgical Pathology Laboratory (AIP room 3.124) and place in the specimen refrigerator, or specimen storage refrigerator (AIP II room 2.371) near the Operating Rooms and place in the refrigerator. Record the specimen in the “OR Pathology Log Book” and all specimens will be delivered by transport on the first route of the following business day.
Frozen Sections

The intra-operative frozen section is one of the most important procedures that the pathologist performs, and when effectively utilized can influence the course of an operation. The purposes of a frozen section are:

- to establish the presence and nature of a lesion
- to determine the adequacy of surgical margins
- to establish whether the tissue obtained contains diagnostic material (even if the exact diagnosis cannot be made at the time of frozen section) or whether additional sampling is required

The indication and limitations of frozen section diagnosis vary from organ to organ. To request a frozen section on weekdays:

- 7am-5pm: FIRST: call 848-4421 (Surgical Pathology Office). If communication is unsuccessful, then SECOND: page day-shift frozen resident at 266-4341 THIRD: call Gross Room at 84653
- 5pm-7pm: FIRST: page day-shift frozen resident at 266-4341; SECOND - call Gross Room at 84653
- See below for information on requesting ‘after-hours frozen sections’.

Provide the following information:

- OR room number
- requesting surgeon
- type of tissue being sent
- infectious status (e.g., TB, hepatitis B/C, etc.) and
- any other special requests

After-hours Frozen Sections (7pm - 7am on weekdays and all day on weekends and holidays), notify the pathologists in advance (> 30 minutes if possible). Page the On-Call Surgical Pathology resident. The on-call resident will then notify the Surgical Pathology Attending. If you are unable to contact the On-Call Surgical Pathology resident, contact the Surgical Pathology Attending. Pager numbers of the on-call staff are available through amion.com or are available as a recorded message at 720-848-4421.

- Hand deliver the specimen to the pathology resident at the gross room (AIP Rm 3.124).
- Requisition must be labeled as Frozen, with contact information to contact clinical team with results.
Specimens Requiring Special Handling
Several types of specimens should be submitted to the pathology laboratory fresh (without formalin), in a sterile container, so that ancillary studies (i.e. cytogenetics, flow cytometry) may be performed.

Examples include:

- Biopsies and resections/excisions for lymphoma work-up
- Biopsies of tumors with unknown diagnosis (possible sarcoma)
- Any specimen consented for various research protocols (if specified by protocol)
- Any specimen in which ancillary studies are anticipated beforehand

If special arrangements are needed, please discuss the case with the attending pathologist. Bring these specimens fresh to the surgical pathology laboratory (AIP Rm 3.124) for review. If questions arise or arrangements need to be made, call 720-848-4653; after hours please contact the surgical pathology resident on-call by pager (available through amion.com).

Molecular Only Specimens

Please contact Colorado Molecular Correlates Laboratory (CMOCO):

University of Colorado
Anschutz Medical Campus
12705 E. Montview Blvd
Suite 400
Aurora, CO 80045

Phone: (303)724-4754
Fax: (303)724-3096
CMOCO@cuanschutz.edu

Breast Specimens

- Needle Core Biopsies
  - Write the time the tissue is removed from the body and the time the specimen is placed in formalin on the requisition form.
  - Indicate any additional instructions (i.e. the tissue in the cassette contains calcifications).
**Bone Marrow Biopsies and Aspirates**

- Bone marrow biopsies (core and clot) and aspirates should be submitted to the Clinical Laboratory on the second floor of the Leprino Building along with appropriate requisition and orders. Formalin-filled containers for marrow core biopsy and clot specimens may be obtained from the Hematology section of the Clinical Laboratory (86928).

**Renal Biopsies**

- Biopsies from a transplanted kidney are submitted for light microscopy with other stains and procedures being performed at the discretion of the pathologist and/or clinical service.
- Biopsies from a native kidney are typically submitted for evaluation by light microscopy, immunofluorescence and electron microscopy.
- Immediately after a biopsy is obtained, it is examined for adequacy using a dissecting microscope prior to dividing it for each study.
- Adequacy assistance is available from the Surgical Pathology Laboratory by calling 720-848-4653 ahead of time (please call to schedule 24 hours in advance if possible). Provide the following information when requesting assistance:
  - Patient name and MRN
  - Time and location of biopsy
  - Contact name and phone number
- Because of the complicated nature of these specimens, the turnaround time is typically between 2 and 7 business days.

**Infectious Specimens requiring culture for Microbiology**

- These include infectious (Mycobacterium or other microbiologic agents) tissue specimens that may require cultures.
- Microbiology tissue cultures are best collected in the Operating Room and sent directly to the main Clinical Laboratory (Leprino Building) with appropriate Microbiology or Virology Requisition forms.
The Pathology Laboratory is **NOT** a sterile environment and specimens may become contaminated if cultures are collected at this location.

- Use universal precautions when handling and transporting of all surgical pathology specimens.
- For infectious specimens requiring routine surgical pathology evaluation, *clearly indicate the infectious nature of the specimen and the presumed microorganism on the requisition.*
  - Place the specimen in a formalin container and transport in a sealed biohazard bag.

### Radioactive Seed Specimens
- These include some breast, prostate, and associated sentinel lymph node specimens
- To ensure that amount of residual radiation is minimized before the specimen is processed the specimen:
  - Label the container as radioactive and document a seed is present
  - Send fresh with accompanying requisition and radioactive seed worksheet
  - Document out of body time on requisition

### Medical Legal Cases
- These may include, but are not limited to:
  - breast implants
  - orthopedic hardware
  - bullets
  - foreign bodies
- Surgical Pathology requisition pertaining to medical legal cases should be clearly marked as such.
- Please hand-deliver the specimen to the surgical pathology lab (AIP Room 3.124) to maintain a legal “chain of custody.”
- Pathology holds medical legal specimens for at least six months and can release specimens to a member of the clinical team when the appropriate consent form is completed and

### Submitting Tissue for Electron Microscopy
Ultrastructural analysis can be invaluable in the examination of unusual tumors, renal biopsies, ciliary dysmotility syndromes and in specimens suspected of harboring unusual pathogens.

- Place minute fragments (averaging 1 cubic mm or approximately one-half the size of a grain of rice) of fresh tissue in 3% buffered glutaraldehyde, with a tissue volume: fixative volume of approximately 1:30.
- Pre-measured vials of 3% buffered glutaraldehyde are available in the Surgical Pathology Laboratory (AIP Room 3.124).
- Tissue submitted for ultrastructural analysis should be accompanied by a properly completed Surgical Pathology Requisition Form. If additional tissue submitted for routine light microscopy add as additional specimen on requisition and send both to surgical pathology in one sealed biohazard bag.
Submitting Prostate Mapping Biopsies

- The Histology Subspecialty Lab must be notified by email or phone at least 24 hours prior to prostate mapping biopsy collection in order to prepare the collection kit. Contact Phil.Faulkner@ucdenver.edu at 720-848-4281.
- HSL personnel will supply a collection kit containing 6 racks of 25 vials in tamper resistant bags. Please contact the lab for additional materials.
- Identify each container with a patient label and hand-write where the biopsy was obtained.
- Prostate mapping biopsy specimens must be collected on sterilized blue biopsy sponges and placed face down into screw cap plastic specimen collection containers with a volume capacity of at least 15 mL.
- Include a surgical pathology request form when returning the collection kit.
- Return all unused collection materials with the collection kit.
- Contact the lab at 720-848-4281 for pick-up of completed cases. Do not send through hospital transport.

Products of Conception (POCs) and Fetuses

- Submit in formalin (unless cytogenetics is requested), with proper patient identification on the container, including mother’s name and hospital number (MRN).
- A completed Surgical Pathology requisition form must accompany the specimen, which provides gestational age (or clinicians’ best estimate).
- Fetuses of 12 weeks gestational age and greater must be accompanied by a disposition form signed by the mother (can be scanned into EPIC).
- All intact fetuses 20 weeks gestational age and greater are sent to the pathology morgue (AIP Rm B2309).
- If Cytogenetic studies are requested, please call the Colorado Genetics Lab (303-724-5701) for assistance after hours.
- Tissue for cytogenetics can be collected from a fresh specimen in the Surgical Pathology Laboratory (AIP Rm 3.124) and sent to the Colorado Genetics Laboratory.
- Contact the Office of Decedent Affairs for specific details regarding disposal and examination of perinatal tissues (303-848-4356).

Policy for Rejection of Specimens

All specimens received by Surgical Pathology are examined for the following deficiencies:

1. Absence of a Requisition Form
2. Absence of Two Patient identifiers on container and Requisition Form
3. Mislabeling of container or specimen designation that differs from the requisition
4. Missing specimen container
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5. No tissue in the container
6. Requisition missing physician’s name
7. No clinical history provided
8. Incomplete requisition (specimen sites not listed)
9. Inadequate amount of fixative
10. Container lid improperly sealed/fluid spill

- To prevent specimens from being lost during the transport process, cases with deficiencies will not be returned.
- Instead, those specimens with deficiencies 2 or 3 will require a clinical staff member come to the Surgical Pathology lab (AIP Room 3.124) to correct the discrepancy.
- Clinical specimens that are deficient in areas 1, 4, 5, 6, 7, 8 may be handled as follows:
  - The clinic may fax over the Requisition Form with the required information
  - Surgical pathology may call the submitting department and talk to a member of the clinical team.
  - If the specimen with discrepancies is from an out of state or out of town clinic, an attempt to rectify the situation via fax or phone will be made. The specimen may have to be shipped back to the clinic for correction.
- A Radicalogic (RL) incident report will be submitted for any discrepancy and filed with Risk Management. A copy of the requisition with the documented error will be kept in Surgical Pathology.

III. CYTOLOGY

- The University of Colorado Hospital Cytology Lab is located in AIP (1), third floor, Room 3.000. Cytology Laboratory is open from 8:00 am to 5:00 p.m., Monday through Friday.
- The Cytology lab is closed on weekends and holidays.
- Routine specimens received after-hours or on weekends should be sent to, and will be stored in, the main Clinical Laboratory, second floor, Leprino Office Building. They will be delivered to the Cytology Laboratory the next business day.
- To contact Cytology Lab call: 720-848-4361.

General Considerations for Cytology Specimens

- Specimens should be sent to the cytology lab as quickly as possible after removal from the patient.
- Keep specimens refrigerated if a time lapse of one (1) hour or more is expected before delivery to the cytology lab.
- Each specimen must be labeled with:
  - Patient’s full name
  - Hospital number (medical record number)
  - Anatomic source and site of the specimen (i.e., right pleural fluid; peritoneal fluid.) This information must be on a label on the container itself, NOT on the lid of the container
  - Place additional specimens in separate properly labeled containers.
Hospital transport delivers specimens from the main clinical lab to the cytology lab every hour between the hours of 8:00 am and 4:30 p.m.

- STAT specimens must be delivered directly to Cytology Lab AIP (1), 3rd. floor, Room 3.000.
- Routine specimens can be tubed to Cytology (tube station 661 or 681). Specimens must be double-bagged. Insert completed requisition form into side pouch of bag. Make sure all lids are securely tightened. Please indicate on the bag that the specimen is for the Cytology Lab (not Surgical Pathology).
- Fixatives are always added in equal volume to the volume of specimen (i.e., for 5 mL of specimen, add 5 mL of fixative).
- The requisition MUST be marked to indicate the type of fixative (if any) that was used. If the slide is improperly stained based on incorrect information, it may be rendered unreadable.
- PLEASE USE PROPERLY LABELED CONTAINERS SEALED AND PACKAGED PER UNIVERSAL PRECAUTIONS

**Stat, Rush and Routine Specimens**

- STAT cytology specimens require immediate processing due to an emergent patient care situation and the cytologic diagnosis will immediately impact or alter the plan of treatment. Ancillary special stains (most), immunostains, and cell block preparations cannot be performed in a Stat manner. Results are typically reported via phone call within 2 hours of accessioning.
- **STAT specimens must be walked directly to Cytology Lab, AIP (1), 3rd. floor, Room 3.000 and the Cytology Lab must be notified by phone (x 84361) that a STAT specimen is being sent.**
- All STAT specimens must include the name and phone number of the clinician who will receive the results.
- After hours (outside 8 am - 5 pm, and weekends) STAT specimens or bronchoalveolar lavage (BAL) specimens which must be urgently evaluated for Pneumocystis jiroveci (carinii) will be processed by an on-call staff and read out by the surgical pathologist on-call.
- Page the on-call surgical pathology resident (available through amion.com) to alert of the Stat specimen.
- **Rush** cytology specimens require expedited processing due to an urgent patient care situation. If received in the cytology lab by late afternoon, these cases are reported out in the morning of the next business day.
- Routine cytology specimens are those in which there is no immediate need for patient results. Most routine specimens will have results reported within two business days.

**Cytology Requisition Forms**

A completed requisition form must accompany each specimen and must have a minimum of two patient identifiers. Forms must be filled out, to include:

a. Patient’s full name  
b. Hospital number (medical record number)  
c. Date of birth  
d. Patient’s encounter number (visit number)
e. Ward/Clinic
f. The referring physician’s name or the name of the responsible physician, and the pager number for physician requesting lab work must be included and must be legible.
g. Date and time the specimen was collected
h. Specimen source
i. Referral Number - if required by patient’s insurance.
j. Pertinent clinical history, including history of malignancy and any radiation or chemotherapy, infectious disease (i.e., HIV, Hepatitis B or C, tuberculosis)

Cytology requisition forms may be filled out and printed from Epic. Paper forms are available in the Cytology Laboratory, x 84361, AIP (1) Room 3.000.

**Non-Gynecological Specimens**

**A. Bronchus, Esophagus or Gastric Specimens**
- Washings: Deliver unfixed specimen as soon as possible to Cytology Lab (AIP (1) third floor, Room 3.000), or refrigerate until it can be delivered. If specimen is held over a weekend, add sputum fixative to container (Fixative available in Cytology Lab or main clinical lab) and indicate on requisition form that the specimen has been fixed.
- Brushings: Submit brush or brushes to the Cytology Lab in 20 mL of CytoLyt fixative or normal saline. The brush should be completely submersed in the liquid and the brush handle should be cut off a few centimeters above the brush bristles.

**B. Cerebrospinal Fluid**
- The specimen tube should consist of at least three (3) mL of CSF. The specimen tube should consist of at least three (3) mL of CSF.
- Specimens MUST be delivered as quickly as possible to the main Clinical Laboratory (Leprino Office Building Room 253).
- CSF specimens are initially processed by the Hematology section of the main Clinical Laboratory and then sent to Cytology for review.
- In case of an after-hours STAT CSF, page the on-call surgical pathology resident to notify them of the STAT specimen (pager number available through amion.com).

**C. Effusions**
- Specimens types include:
  a. Ascites or peritoneal fluid
  b. Pleural or thoracentesis fluid
  c. Pericardial fluid
  d. Synovial fluid
  e. Cyst fluid
- Specimens may be sent to cytology in a plastic 60 mL capped syringe (no needle), a 120 mL screw top specimen cup, an 80 mL screw top urine cup, or other non-glass container.
- If specimen is collected in a larger container and must be divided. Gently agitate the specimen by inverting the container 5-10 times prior to aliquoting for cytology testing.
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- Do not add anticoagulant or fixative.
- Deliver fresh to Cytology Lab (AIP (1), 3rd Floor, Room 3.000) as soon as possible.
- Refrigerate if specimen cannot be delivered fresh.
- Volume of at least 150 mL of specimen is optimal.
- Specimens in excess of 500 mL will not be accepted.
- Specimens in Pleur-Evac containers will not be accepted.
- Specimens in glass containers will not be accepted.
- Specimens with needles will not be accepted.

D. FNA (Fine Needle Aspiration)

- Call the Cytotechnologists (720-848-1793), pager (303-266-0570) with the following information:
  a) patient name
  b) medical record number
  c) specimen type
  d) procedure room number
  e) contact information

- The Resident and Pathologist on service will be contacted.
- Aspirates to be performed by non-pathologists (i.e., CT, EUS, Ultrasound), must be scheduled in advance (at least one hour) with the Cytotechnologist by calling (720-848-1793), pager (303-266-0570).
- A cytotechnologist will attend the aspiration procedure to prepare the slides, whenever possible.
- If an aspirate must be done after normal working hours (after 6 p.m. or on weekends), with no cytology assistance, use the AFTER HOURS FNA COLLECTION KIT, whenever available.
  o Please use one kit per site sampled
  o Place 2-3 FNA passes into 10% Formalin vial
  o Place 2-3 FNA passes into CytoLyt™ vial
  o Label each conical vial and the requisition with the patient's sticker
  o Label each specimen conical vial with the site from which the FNA sample was taken
  o Label the requisition with the site from which the FNA is taken, the performing physician, and the date and time the specimen was collected.
  o Deliver completed kit to the Clinical Laboratory in the Leprino Bldg.
  o If lymphoproliferative disorder is suspected by the performing clinician, please obtain a tube of RPMI/Flow transport media and a requisition from the clinical lab at 8-4401, place one or two FNA passes into RPMI, and send to clinical laboratory.
  o *Note: It is OK to rinse the sample out of the FNA needle with minimal amount of sterile saline into formalin, CytoLyt™, or RPMI tubes.
  o For Emergent FNA after hours add-on-procedures please, contact the Cytopathology Fellow, pager: 303-266-3649 and/or scheduled resident to arrange coverage for the procedure.
  o For weekend coverage, please call the scheduled On-Call cytopathologist and resident. Alternatively, the specimen may be collected in a container with 10% formalin and sent to
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the cytology lab (AIP (1), 3rd Floor, Room 3.000). The specimen must be labeled with patient identifiers, specimen source, and accompanied by the Non-Gyn Cytology Request Order.

E. Sputum Collection

- An early morning deep cough specimen is to be collected in a container with sputum fixative. Sputum cups with a fixative are available in the Cytology Lab (AIP (1), 3rd Floor, Room 3.000); phone 720-848-4361.
- Sputum specimens received without fixative will be rejected.

F. Urine Specimen

- The second voided specimen in the morning is preferred, after the patient has been up and active. For males, a simple voided specimen is satisfactory. For females, a mid-stream clean catch (after cleaning urethra with alcohol wipe) specimen is preferred.
- If specimen cannot be refrigerated, add equal volume of cytology fixative to specimen to preserve until delivered. Fixative should only be added as a last resort. Adding fixative dilutes the specimen and may result in a less than satisfactory reading. Patients should be encouraged to come to the hospital to void a fresh specimen for best results.
- 50-80 mL of urine is considered optimal.
# Cytology Non-Gyn Specimen Collection Guidelines—Quick Reference

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<thead>
<tr>
<th>Specimen</th>
<th>Fixative</th>
<th>Quantity</th>
<th>Storage</th>
<th>Deliver To</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSF</td>
<td>None</td>
<td>3-5 mL</td>
<td>Refrigerate</td>
<td>Clinical Laboratory—Attn: Hematology (within 30 min)</td>
</tr>
<tr>
<td>Ascitic (Peritoneal) Fluid</td>
<td>None</td>
<td>150 mL</td>
<td>Refrigerate</td>
<td>Cytology Lab, M-F, 8:00 am – 4:30 p.m. AIP (1) – Rm. 3.000 Tube station 661 or 681</td>
</tr>
<tr>
<td>Bronchial Brushing</td>
<td>CytoLyt</td>
<td>Brush in 5-10 mL Fluid</td>
<td>Refrigerate</td>
<td>Cytology Lab, M-F, 8:00 am – 4:30 p.m. AIP (1) – Rm. 3.000 Tube station 661 or 681</td>
</tr>
<tr>
<td>Bronchial Washing</td>
<td>None</td>
<td>20 mL</td>
<td>Refrigerate</td>
<td>Cytology Lab, M-F, 8:00 am – 4:30 p.m. AIP (1) – Rm. 3.000 Tube station 661 or 681</td>
</tr>
<tr>
<td>Sputum</td>
<td>CytoLyt</td>
<td>5-10 mL</td>
<td>Refrigerate</td>
<td>Cytology Lab, M-F, 8:00 am – 4:30 p.m. AIP (1) – Rm. 3.000 Tube station 661 or 681</td>
</tr>
<tr>
<td>Cyst Aspiration</td>
<td>None</td>
<td>n/a</td>
<td>Refrigerate</td>
<td>Cytology Lab, M-F, 8:00 am – 4:30 p.m. AIP (1) – Rm. 3.000 Tube station 661 or 681</td>
</tr>
<tr>
<td>Brushing Slides</td>
<td>CytoLyt or Normal Saline</td>
<td>Brush in 20 mL</td>
<td>Refrigerate</td>
<td>Cytology Lab, M-F, 8:00 am – 4:30 p.m. AIP (1) – Rm. 3.000 Tube station 661 or 681</td>
</tr>
<tr>
<td>Body Fluids (Pericardial, Pelvic, etc.)</td>
<td>None</td>
<td>150 mL</td>
<td>Refrigerate</td>
<td>Cytology Lab, M-F, 8:00 am – 4:30 p.m. AIP (1) – Rm. 3.000 Tube station 661 or 681</td>
</tr>
<tr>
<td>Urine / Bladder Washings</td>
<td>None</td>
<td>50-80 mL</td>
<td>Refrigerate</td>
<td>Cytology Lab, M-F, 8:00 am – 4:30 p.m. AIP (1) – Rm. 3.000 Tube station 661 or 681</td>
</tr>
<tr>
<td>Pleural Fluid</td>
<td>None</td>
<td>150 mL</td>
<td>Refrigerate</td>
<td>Cytology Lab, M-F, 8:00 am – 4:30 p.m. AIP (1) – Rm. 3.000 Tube station 661 or 681</td>
</tr>
</tbody>
</table>
Gynecological, Pap Test Specimen Collection

Each specimen must be accompanied by a printed out GYN Cytology Order Form, available in Epic, or a Cervical/Vaginal Cytology Requisition. Use pre-printed patient labels if possible.

Information required on a Gyn Cytology Requisition:

- Patient’s full name
- Patient’s date of birth
- Specimen collection date
- Specimen source (Endocervical/Cervical or Vaginal)
- LMP (Last Menstrual Period)
- Previous history: abnormal paps, STD, cancer with dates of surgery, radiation treatment or chemotherapy
- Birth control method
- Reason for Cytology (Screening or Diagnostic)
- Requested Procedure (Pap Test only or Pap Test with reflex HPV, etc)
- Requesting clinic
- Requesting clinician
- Pap Test Liquid Base Technology collection method (ThinPrep or SurePath)
- Hospital number (medical record number)
- Encounter number (visit number)
- Patient’s insurance payer code
- Referral Number - if required by insurance

A. Conventional Gynecological Smears (rare)

Protocol for Endocervical, Ectocervical, Vaginal and combined Smears

- Each slide must be labeled with patient’s name, site of smear, and hospital number.
- Smears must have cells from the squamo-columnar junction to be adequate.
- If a lesion is visible, a slide should be made of this area first.
- Spread cells evenly and quickly over the slide and fix by immersing the slide IMMEDIATELY in 95% ethanol. Cytology spray fixative may be used instead. When spraying, the aerosol can, should be held about twelve (12) inches from the slide to avoid damaging the cells. If a pump spray is used, pump 3-4 times at a distance of 6-8 inches.

Protocol for Vulvar, Labial Smears

- A good scrape should be made of the specified area, smeared and labeled as above.
- Requisition filled out as indicated above.
B. Collection of Thin Prep Gynecological Specimens

General considerations for collecting ThinPrep Gynecological Specimens

- Collect samples in the routine manner (e.g., NCCLS guideline GP-15A) and follow appropriate collection techniques.
- The patient should be tested 2 weeks after the first day of her last menstrual period, and definitely not when she is currently menstruating. Excessive amounts of blood may compromise the test and possibly lead to an unsatisfactory result.
- The patient should not use vaginal medication, vaginal contraceptives, personal lubricants or douches during the 48 hours before the exam.
- If desired, use lukewarm water to warm and lubricate the speculum.
- Use a lubricant compatible with ThinPrep Pap Test as recommended by Hologic, Inc. Excessive amounts of the lubricant may compromise the test and possibly lead to an unsatisfactory result.
- Remove excess mucus or other discharge present before taking the sample. If there is excess mucus or other discharge present, remove it gently with a cotton swab. Excess cervical mucus, inflammatory exudates and blood is essentially devoid of meaningful cellular material and may contribute to an unsatisfactory test result.
- Cervix should not be cleaned by washing with saline prior to taking sample or it may result in a relatively acellular specimen.
- The cytology sample should be obtained before the application of acetic acid.

Endocervical Brush/Spatula Protocol

A. Obtain an adequate sampling from the ectocervix using a plastic spatula.
B. Select contoured end of plastic spatula and rotate it 360 degrees around the entire exocervix while maintaining tight contact with exocervical surface.
C. Rinse the spatula as quickly as possible into the PreservCyt® Solution vial by swirling the spatula vigorously in the vial 10 times and pressing the sides of the spatula on the sides of the collection container.
D. Discard the spatula.
E. Obtain an adequate sampling from the endocervix using an endocervical brush device.
F. Insert the brush into the cervix until only the bottom-most fibers are exposed.
G. Slowly rotate 1/4 or 1/2 turn in one direction. DO NOT TWIRL OR OVER-ROTATE.
H. Rinse the brush as quickly as possible in the PreservCyt Solution by rotating the device vigorously in the solution 10 times while pushing against the PreservCyt vial wall (paint the side of the container vial with the brush). Press the brush vigorously to the sides of container to further release material.
I. Discard the brush.
J. Tighten the cap so that the torque line on the cap passes the torque line on the vial.
K. Label the vial with the patient’s sticker or record the patient’s name and ID number on the vial.
L. Record the patient information and medical history on the cytology requisition form.
M. Place the vial and requisition in a specimen bag for transport to the laboratory.
Broom-Like Device Protocol

A. Obtain an adequate sampling from the cervix using a broom-like device.
B. If desired, use lukewarm water to warm and lubricate the speculum. Water-soluble gel lubricant sparingly applied to the posterior blade of the speculum can be used if necessary.
C. Insert the central bristles of the broom into the endocervical canal deep enough to allow the shorter bristles to fully contact the ectocervix.
D. Push gently, and rotate the broom in a clockwise direction five times.
E. Rinse the broom as quickly as possible into the PreservCyt® Solution vial by vigorously pushing the broom into the bottom of the vial 10 times, forcing the bristles apart.
F. As a final step, swirl the broom vigorously to further release material.
G. Discard the collection broom.
H. Tighten the cap so that the torque line on the cap passes the torque line on the vial.
I. Label the vial with the patient’s sticker or record the patient’s name and ID number on the vial.
J. Record the patient information and medical history on the cytology requisition form.
K. Place the vial and requisition in a specimen bag for transport to the laboratory.

C. Collection of SurePath Gynecological Specimens

Sample Collection Using Cervical Sampling Device(s) with Detachable Head(s):

A. Obtain a sample from the cervix according to the standard collection procedure provided by the manufacturer of the sampling device(s).
B. Using the thumb and forefinger of gloved hand(s), disconnect the head of the device from the handle and insert the head in the collection vial.
C. Discard the handle of the sampling device. Do not touch head of device(s).
D. Cap the vial tightly.
E. Label the specimen vial with the patient’s sticker.
F. Send the specimen containing the head(s) of the sampling device(s), with appropriate paperwork, to the cytology laboratory.

D. Human Papilloma Virus (HPV) Testing, GC/Chlamydia Testing

- Collect a gynecologic sample by one of the methods described above
- Select a testing option:
  A. Pap with HPV- High Risk Testing (Reflex) if diagnosis is ASCUS
  B. Pap with HPV- High Risk Testing Requested if diagnosis is ASCUS or Above
  C. Pap with HPV- High Risk Typing (Co-test)
  D. HPV- High Risk Typing Only
  E. Include GC/Chlamydia to Above
  F. GC/Chlamydia Only
Reasons for Specimen Rejection

- Specimens received from unknown clinics or facilities are rejected. Only legally authorized physicians and facilities may submit specimens for processing.
- Specimens received without Requisition Form/Epic order form.
- Unlabeled specimens, received without patient identification on the specimen container are rejected.
- Miss-matched specimens, received with the vial and the Requisition Form/ Epic order having different patient names are rejected.
- Specimens received in leaking or unsealed containers are rejected.
- Specimens received with attached needles, in a glass bottle, in a Pleur-Evac container or in greater than 500 mL in volume are rejected.
- Sputa not fixed in cytology fixative are rejected. If a concurrent sputum microbiology culture is required, two (2) separate specimens must be obtained.

Procedure for Rejected Specimens

- The clinic or nursing station will be called, up to two times, to report the problem so the specimen can be repeated or properly submitted. Due to the fragile nature of the cellular material, we will not attempt to recover a specimen that is over 7 days old.
- All Rejected Specimens are recorded in the computer system, and Rejected Specimen Log.
- Information concerning the reason for rejection, contacted staff and clinic is available for review by appropriate personnel.
- Unlabeled, mislabeled, or mismatched specimens require an incident report to be completed within 24 hours of discovery of the problem Via”RadicaLogic” (RL).

**WE WILL NOT PROCESS**

SPECIMENS WITH NEEDLES

SPUTA RECEIVED WITHOUT FIXATIVE

SPECIMENS RECEIVED IN GLASS BOTTLES

SPECIMENS IN PLEUR-EVAC CONTAINERS

SPECIMENS IN EXCESS OF 500 ML IN VOLUME
V. Autopsy Service

General Information

The autopsy service’s hours of operation are 8:00 am through 5:00 pm (Monday-Friday). Post-mortem examinations are not performed after hours, on weekends or Holidays except in exceptional circumstances. With questions regarding autopsy matters, please call either the Office of Decedent Affairs (720-848-4356) or the Autopsy Coordinator (720-848-4387).

The Department of Pathology may decline to perform an autopsy examination or limit the examination based upon the discretion of the attending Pathologist or the Director of Autopsy.

Reporting to Coroner’s Office

• It is hospital policy to report all deaths to the Adams County Coroner’s Office (303-659-1027), regardless of the circumstances of the death.

• Most cases will be released by the Coroner’s Office back to the hospital for an autopsy to be performed if consent is obtained.

• Coroners or Medical Examiners from ANY county have the right to remove a body from the University of Colorado Hospital at any time.

• Any unexplained death, or death that results from equipment failure or malfunction must be reported to the University Hospital Risk Management Office (303-724-7475) in addition to being reported to the Coroner’s Office.

Requesting an Autopsy

When an adult patient expires in University of Colorado Hospital, a Patient Service Coordinator (PSC) or nurse on that unit should initiate the “Discharge by Death Procedure Packet (Adult).” These packets are available through the UCHealth Print Center Portal for either Youth/Adult or Infant. Autopsy examinations can and should be requested for all eligible deaths. The Decedent Affairs Office (staffed 7 days per week, excluding hospital holidays) are experienced in discussing the autopsy procedure with families and documenting consent from the legal next of kin. If the death occurs outside of office hours, the Office of Decedent Affairs will contact the family on the next business day to confirm autopsy wishes and to assist the family with navigating the next steps required for final disposition.
Who Can Give Consent for Autopsy
When a person dies, his/her body becomes the property of the legal next-of-kin or the person charged within the duty of burial. If an autopsy is performed without the permission of this legal next of kin, all involved parties may be sued for unauthorized assault upon the body. The descending order in determining and verifying the legal next-of-kin is listed below and must be adhered to in each and every case. Note: If someone of equal class objects to an autopsy, the autopsy should not be performed, even if a valid permit exists. If there are any doubts about the validity of an autopsy permit, the UCH Legal Office should be contacted at 720-848-7815.

1. Surviving Spouse (not legally separate or divorced)
2. Adult Children (oldest to youngest, including adopted)
3. Father or Mother
4. Brother or Sister
5. Grandfather or Grandmother
6. Uncle or Aunt
7. Legal Guardian
8. Other person accepting legal responsibility for funeral arrangements

Note: Per Colorado Code "153-2-107 Kindred of Half Blood," relatives of the half-blood inherit the same share they would inherit if they were of the whole blood.

Autopsy Arrangements for Off-site Deaths

Who is Eligible for UCH Autopsy
University of Colorado Hospital may provide an autopsy for any deceased patient who has been seen by a physician at the University of Colorado Hospital within 5 years of death.

Who is Not Eligible for UCH Autopsy
University of Colorado Hospital will not provide autopsies for non-University patients. Families of non-University patients should seek an autopsy at the hospital where the patient’s physician has privileges, or for a private pathologist to perform an autopsy.
Costs

The autopsy examination will be performed at no charge, but the legal next of kin must arrange and pay for the transportation of the body to and from the morgue at University of Colorado Hospital.

Coroner Notification

If the patient's death is reportable to the coroner, you must notify the coroner in the county where the patient died. The call must be documented in the Coroner Notification section of the Disposition Permit.

Obtaining Autopsy Consent

It is preferred that consent for an Autopsy examination be obtained by a member of the Office of Decedent Affairs. The legal next of kin must be identified and listed on the Autopsy Authorization section of the Disposition Permit. Be sure to have them clearly and in detail list any limitations such as "no thorax" or "brain only" directly on the autopsy consent. Autopsy permits can be obtained only after the patient has died. Pre-authorized permits are not acceptable. If a patient has declared that they wish to undergo an autopsy examination, consent must still be obtained from the legal next-of-kin after the patient's death to verify that an autopsy is still desired and to confirm any limitations.

Phone Consent

Permission by telephone is legal, provided (a) the person giving permission is the proper individual to do so; (b) he/she can be identified and (c) the permit is properly completed. If you are dealing with the family by phone, simply write "Phone Consent" on the signature line of the Autopsy Authorization section of the Disposition Permit, and sign as a witness to the consent.

Mortuary Designation

The Office of Decedent Affairs will request that the legal next of kin decide upon a funeral home. The next-of-kin must fill out and sign the Release of Mortuary section of the Disposition Permit. Phone consent is also acceptable when obtaining mortuary information.
Title: Specimen Submission Guidelines

Transportation

Transportation of the body to University of Colorado Hospital must be arranged with a funeral home. If families need assistance in locating transportation, it should be explained that they may use any funeral home of their choice and that all of them may be found in the telephone directory. Note: The legal next-of-kin must arrange and pay for the transportation of the body to and from the morgue at University of Colorado Hospital, except in cases of unusual neurological conditions for which a special fund may be used with Departmental approval.

Who Can Help

The Office of Decedent Affairs (720-848-4356) will assist with arranging the autopsy as much as possible. However, many of the details (i.e., arranging transportation to UCH, completing the death certificate, etc.) will be left to the Clinical Physician and the next-of-kin.

Directions to the University of Colorado Hospital Morgue

Directions to the Morgue (AIP Room B2309): Take I-225 to Colfax, west to Quentin Street, right on Quentin to 17th, right on 17th to the dock area (behind the hospital). Morgue phone number is 720-848-7001 or 720-848-7004.

For Nighttime and Weekend Drop-offs, mortuaries should take bodies to the loading dock on the north (back) side of the hospital. Call Hospital Security (720-848-7777) for entry. You will need to fill out a blue card with all pertinent patient information. Security will then escort you to the morgue, compare the blue card info with tags, and assist with getting the body into refrigeration.

IMPORTANT: Mortuaries MUST bring the patient in a body bag!

Mortuaries will be contacted for pickup when the autopsy examination is complete.