

Specimen Submission Guidelines

Purpose 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.*

Responsibility All Clinic, Operating Rooms and Pathology Personnel

Body

I. GENERAL INFORMATION

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Supervisor, Surgical Pathology Stefanie Stephan, PA(ASCP) ^{cm}	(720) 848-4641
Renal Biopsy Contact	(720) 848-4653
Specimen Transport	(720) 848-4048
Surgical Pathology Office, AIP Room 3.001	(720) 848-4421
Surgical Pathology Laboratory, AIP Room 3.124	(720) 848-4653
Cytopathology Laboratory, AIP Room 3.106	(720) 848-4361



II. EXTENT OF SERVICES

Surgical Pathology is that part of Anatomic Pathology concerned with the study of tissue and organ samples removed from patients in an attempt 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.

III. SURGICAL PATHOLOGY

Hours of Operation: 7:30 am to 5:30 pm

The Surgical Pathology Laboratory (Gross Room) is open from 7:30 am to 5:30 pm 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 through pager. An Attending Surgical Pathologist is always on-call and can be reached through their personal pager. Pager numbers of the on-call staff and the on-call schedule are available through the hospital operator.

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.**
- **ALL POST-TRANSPLANT BIOPSIES (LIVER, KIDNEY, LUNG AND HEART) MUST BE HAND DELIVERED TO GROSS ROOM STAFF AND THE REQUISITION FORM MUST BE CLEARLY MARKED AS RUSH, STAT, OR ROUTINE.**

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. Ancillary special stains (most) 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 turn-around-time or less due to an urgent patient care situation. If received in the Surgical Pathology lab by later 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 720-848-4421.
- Please **listen to the recorded message** for the pager # of the pathology resident on call and contact them to alert them of a case.
- You may also call the hospital operator or go to amion.com to locate the pager for the on call surgical pathology resident.
- 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 to the holding refrigerator in the main clinical laboratory (2nd floor of the Leprino Office 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 accessioning. Turnaround time for these specimens is usually between 24 hours and 48 hours, depending on case complexity and whether special stains or studies are required.
- Larger resection specimens may require more time for proper fixation and may not be available for examination until two or more days after



accessioning.

- 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 in order for the pathologist to come 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 (i.e., 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, properly labeled containers

Specimen Fixation:

Exercise universal precautions when handling and transporting all surgical pathology specimens. Place specimens (see exceptions below) in:



- 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 putting specimen inside of the appropriately labeled formalin container:

- Place in a sealable biohazard bag (with a requisition 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 5:30 pm.
- Biopsies or other small specimens may be delivered to the Surgical Pathology Laboratory by pneumatic tube (station #833).
- Hospital transport's last pickup route each 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 orderly should bring this and associated requisition directly to the Surgical Pathology Laboratory (AIP room 3.124) and place in the specimen refrigerator, or specimen storage refrigerator (AIP room 2.337) near the Operating Rooms and place in a plastic storage bin or on the shelf. Record the specimen in the "OR Pathology Log Book" and specimen 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 can't get through, 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; THIRD - (if after 6pm) - call on-call resident at 266-3983; FOURTH (if after 6pm) - page/call on-call pathology attending using pager or cell # on amion.com

Provide the following information:

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

After-hours Frozen Sections (7pm -7am, including 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 the hospital operator, 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 provided for clinical team.

Specimens Requiring Special Handling

Several types of specimens should be submitted to the pathology laboratory



fresh (without formalin), in a **sterile container**, in order that special studies (i.e. cytogenetics, flow cytometry) may be performed.

Examples include:

- Biopsies and resections/excisions for lymphoma work-up**
- Lung resection specimens for tissue banking**
- Biopsies of tumors with unknown diagnosis (possible sarcoma)**
- Various research protocols (if specified by protocol)**
- Any specimen in which a diagnostic problem is anticipated beforehand**

If special arrangements are needed, please discuss the case with the attending pathologist. Bring these specimens to the surgical pathology laboratory (AIP Rm 3.124) for review. If questions arise or arrangements need to be made, call **720-848-4421**; after hours please contact the surgical pathology resident on-call by pager (available through hospital operator).

Molecular Only Specimens

Please contact Colorado Molecular Correlates Laboratory (CMOCO):

University of Colorado
Anschutz Medical Campus
12801 E 17th Avenue,
Aurora, CO 80045

Phone: (303)724-4754

Fax: (303)724-3096

CMOCO@ucdenver.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 contain calcifications).
- Large Breast Cases/Mastectomies/Lumpectomies/Any Specimen related to the breast including plastic surgery specimens/Ovaries and tubes in a patient with known breast cancer/sentinel lymph nodes/axillary dissections
 - Rapidly transport all breast specimens to pathology immediately upon removal from the patient.
 - To achieve less than an hour of ischemic to in formalin time, pathology sections the specimens when they arrive and places them in formalin.

- **Do not batch specimens!**
- Record the time the tissue is removed from the patient on the requisition form.

Bone Marrow Biopsies and Aspirates

- Bone marrow biopsies and aspirates should be submitted to the Clinical Laboratory on the second floor of the Leprino Building. 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 native kidney are typically submitted for evaluation by light microscopy, immunofluorescence and electron microscopy.
- Biopsies from a transplanted kidney are submitted only for light microscopy with other stains and procedures being performed at the discretion of the pathologist and/or clinical service.
- Immediately after a biopsy is obtained, it is examined for adequacy using a dissecting microscope prior to dividing it for each study.
- Assistance is available from the Surgical Pathology Laboratory by calling 720-848-4653 ahead of time. 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 Office 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 there.
- 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

sealable biohazard bag.

Radioactive Specimens

- These include some breast, melanoma and associated sentinel lymph node specimens
- To ensure that amount of residual radiation is minimized before the specimen is processed the specimen:
 - Place specimen in a formalin container
 - Place in a secondary 175 oz. container
 - Label with the date that the specimen was removed

Medical Legal Cases

- These may include, but are not limited to:
 - breast implants
 - orthopaedic hardware
 - bullets
 - foreign bodies
- Surgical Pathology paperwork 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 when the appropriate consent form is completed.

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 buffered glutaraldehyde, with a tissue volume: fixative volume of approximately 1:30.
- Pre-measured vials of Glutaraldehyde are available in the Surgical Pathology Laboratory (AIP Room 3.124).
- Tissue submitted for ultrastructural analysis should be accompanied by a properly filled out Surgical Pathology Requisition Form in addition to a **Department of Pathology Request for Diagnostic Electron Microscopy** form, the latter of which is available in the Surgical Pathology Laboratory (AIP Rm 3.124).

Products of Conception (POCs) and Fetuses

- Submit in formalin (unless cytogenetics are requested), with proper



patient identification on the container, including mother's name and hospital number.

- 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.
- 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 (303-315-7249) for assistance.
- 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 (303-266-7259).

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
 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 department and talk to an assigned



- 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 Safety Intelligence (SI) 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.

IV. CYTOLOGY

- The University of Colorado Hospital Cytology Lab is located in AIP (1), third floor, Room 3.000 and 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 (2nd floor, Leprino Office Building) and will be delivered to the Cytology Lab on the next business day.
- To contact **Cytology Lab call: 720-848-4361.**

Non-Gynecological Specimens

(refer to the [Cytology Specimen Collection Guidelines](#) for a quick reference)

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 and properly tightened. Please indicate on bag that specimen is for the Cytology Lab (not Surgical Pathology).

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 (x84361) 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 8am -5pm, and weekends) STAT specimens or bronchoalveolar lavage (BAL) specimens which must be urgently evaluated for *Pneumocystis jirovecii* (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 the hospital operator or 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 later 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 2 business days.

Cytology Requisition Forms

- a. A completed requisition form must accompany each specimen and must have a minimum of two patient identifiers. Forms must be completely filled out, to include: 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 attending 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 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, x84361, AIP (1) Room 3.000.

Non-Gynecological Specimens

(refer to the Cytology Specimen Collection Guidelines for a quick reference)

A. Bronchus, Esophagus or Gastric Specimens

- Washings: Deliver unfixed specimen as soon as possible to Cytology Lab (AIP (1) 3rd 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 submerged 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.
- 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 hospital operator or 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.

- 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) 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, the following steps must be adhered to:
 1. The specimen may be collected in a container with 10% formalin and sent to the cytology lab (AIP (1), 3rd Floor, Room 3.000).
 2. The specimen must be labeled with patient identifiers, specimen type, source, and fixative used, if any.
 3. For best results, a series of air-dried slides can be prepared and shipped to the cytology laboratory. Slides prepared in this manner are adequate for staining for up to 30 days.
 4. Some slides may be fixed by immediately submerging them in 95% ethanol, or spray fixed with Pro-Fix or another cytology fixative. Fixative must be used immediately and liberally without allowing slides to air-dry, as this will render them unreadable.



5. Prepare the slides as you would a blood smear. Use the entire slide and spread the material a thinly as possible.
6. Prepare 2-4 slides per FNA pass.
7. Complete a cytology requisition form and send the slides to the cytology lab as soon as possible.
8. DO NOT ship cytology slides and formalin fixed specimens in the same container. If ANY formalin fumes contaminate the cytology material, it will be unreadable.

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).
- 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.

Gynecological Specimen Collection

Each specimen must be accompanied by a Cytology Requisition Form. These forms are available in Epic, all clinics and nursing stations, and the Cytology Lab (AIP (1), 3rd Floor, Room 3.000). Use pre-printed patient labels if possible.

Information required on a Gyn Cytology Requisition:

- a) Patient's full name
- b) Patient's date of birth
- c) Specimen collection date
- d) Specimen source (Endocervical/Cervical or Vaginal)
- e) LMP (Last Menstrual Period)
- f) Previous history: abnormal paps, STD, cancer with dates of surgery, radiation treatment or chemotherapy
- g) Birth control method
- h) Reason for Cytology (Screening or Diagnostic)



- i) Requested Procedure (Pap smear or Pap with reflex HPV, etc)
- j) Requesting clinic
- k) Requesting clinician
- l) Pap collection method (ThinPrep or SurePath)
- m) Hospital number (medical record number)
- n) Encounter number (visit number)
- o) Patient's insurance payer code
- p) 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 as in above and labeled as to site of smear.
- 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.
- Water-soluble gel lubricant sparingly applied to the posterior blade of



the speculum can be used if necessary. Excessive amounts of jelly 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 when present in the sample vial may yield a slide with little or no diagnostic material present.
- The cervix should not be cleaned by washing with saline 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. 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. Select contoured end of plastic spatula and rotate it 360 degrees around the entire exocervix while maintaining tight contact with exocervical surface.
- D. Rinse the spatula as quickly as possible into the PreservCyt® Solution vial by swirling the spatula vigorously in the vial 10 times.
- E. Discard the spatula.
- F. Obtain an adequate sampling from the endocervix using an endocervical brush device.
- G. Insert the brush into the cervix until only the bottom-most fibers are exposed.
- H. Slowly rotate 1/4 or 1/2 turn in one direction. **DO NOT TWIRL OR OVER-ROTATE.**
- I. 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.
- J. Discard the brush.
- K. Tighten the cap so that the torque line on the cap passes the torque line on the vial.
- L. Record the patient's name and ID number on the vial.
- M. Record the patient information and medical history on the cytology requisition form.
- N. Place the vial and requisition in a specimen bag for transport to the laboratory.



Broom-Like Device Protocol

1. Obtain an adequate sampling from the cervix using a broom-like device.
2. 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.
3. Insert the central bristles of the broom into the endocervical canal deep enough to allow the shorter bristles to fully contact the ectocervix.
4. Push gently, and rotate the broom in a clockwise direction five times.
5. 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.
6. As a final step, swirl the broom vigorously to further release material. Discard the collection broom.
7. Tighten the cap so that the torque line on the cap passes the torque line on the vial.
8. Record the patient's name and ID number on the vial.
9. Record the patient information and medical history on the cytology requisition form.
10. 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):

1. Obtain a sample from the cervix according to the standard collection procedure provided by the manufacturer of the sampling device(s).
2. 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.
3. Discard the handle of the sampling device. Do not touch head of device(s).
4. Cap the vial tightly.
5. 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

- Collect a cervical sample by one of the methods described above
- Select High-Risk HPV testing option:
 - 1) "HPV reflex" – HR-HPV testing will only be done on samples diagnosed as "Atypical Squamous Cells of Undetermined Significance" (ASCUS)
 - 2) "HPV if Abnormal" – HR-HPV will be done on specimens

- diagnosed ASCUS or above
- 3) “HPV typing” – HR-HPV testing will be done on all samples regardless of the diagnosis

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.
- Specimens received without patient identification on the specimen container are rejected.
- Specimens and request sheets 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 greater than 500 mL in volume are rejected.
- Sputums 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 specimen rejections are recorded in the computer system.
- Information concerning the reason for rejection and the ward or clinic contacted is available for review by appropriate personnel.
- Unlabeled, mislabeled, or mismatched specimens require an incident report to be completed. This must be completed within 24 hours of discovery of the problem.
- All discrepancies are submitted via ”Safety Intelligence” (SI).

Cytology Specimen Collection Guidelines—Quick Reference

Specimen	Fixative	Quantity	Storage	Deliver To
CSF	None	3-5 mL	Refrigerate	Clinical Laboratory— Attn: Hematology (within 30 min)
Ascitic (peritoneal) Fluid	None	150 mL	Refrigerate	Cytology Lab, M-F, 8:00 am – 4:30 p.m. AIP (1) – Rm. 3.000

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					Tube station 661 or 681
	Bronchial Brushing	CytoLyt	Brush in 5-10 mL Fluid	Refrigerate	Cytology Lab, M-F, 8:00 am – 4:30 p.m. AIP (1) – Rm. 3.000 Tube station 661 or 681
	Bronchial Washing	None	20 mL	Refrigerate	Cytology Lab, M-F, 8:00 am – 4:30 p.m. AIP (1) – Rm. 3.000 Tube station 661 or 681
	Sputum ¹	CytoLyt	5-10 mL	Refrigerate	Cytology Lab, M-F, 8:00 am – 4:30 p.m. AIP (1) – Rm. 3.000 Tube station 661 or 681
	Cyst Aspiration ²	None	n/a	Refrigerate	Cytology Lab, M-F, 8:00 am – 4:30 p.m. AIP (1) – Rm. 3.000 Tube station 661 or 681
	Brushing Slides	CytoLyt or Normal Saline	Brush in 20 mL	Refrigerate	Cytology Lab, M-F, 8:00 am – 4:30 p.m. AIP (1) – Rm. 3.000 Tube station 661 or 681
	Body Fluids (Pericardial, Pelvic, etc.)	None	150 mL	Refrigerate	Cytology Lab, M-F, 8:00 am – 4:30 p.m. AIP (1) – Rm. 3.000 Tube station 661 or 681
	Urine / Bladder Washings	None	50-80 mL	Refrigerate	Cytology Lab, M-F, 8:00 am – 4:30 p.m. AIP (1) – Rm. 3.000 Tube station 661 or 681
	Pleural Fluid	None	150 mL	Refrigerate	Cytology Lab, M-F, 8:00 am – 4:30 p.m. AIP (1) – Rm. 3.000 Tube station 661 or 681

NOTES: Fixatives are always added in equal volume to the volume of specimen (i.e., for 5 mL of specimen, add 5 mL of fixative).

¹Sputums received without fixative will **NOT** be processed. Contact the Cytology Laboratory (720-848-4361) if you need CytoLyt fixative.

²Specimens received with **NEEDLES** attached will **NOT** be processed. 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.

WE WILL NOT PROCESS

ANY SPECIMEN RECEIVED IN A GLASS BOTTLE, SPECIMENS WITH NEEDLES, SPECIMENS IN A PLEUREVAC CONTAINER, OR IN EXCESS OF 500 ML IN VOLUME. PLEASE USE PROPER CONTAINERS, SEALED AND LABELED FOR UNIVERSAL PRECAUTIONS.

V. Autopsy Service

General Information

The autopsy service's hours of operation are 8:00 am through 5:00 pm (Monday-Saturday). Post-mortem examinations are not performed after hours, on Sundays or Holidays except in exceptional circumstances. With questions regarding autopsy matters, please call either the surgical pathology office (720-848-4421) or the **Office of Decedent Affairs (720-848-8453 or 720-848-4367)**.

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 on all nursing units, as well as in the Emergency Room, Operating Room and Day Surgery. They can be found in the file cabinet at each unit’s PSC station. When a packet is used, additional copies will be replaced by the Decedent Affairs Office as soon as possible.

Autopsy examinations can and should be requested for all deaths.

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 (separated is OK, divorced is not)
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 will provide an autopsy for any deceased patient who has been seen by a current staff physician at UCHSC regardless of when or where they die.

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. They may also arrange for a private pathologist to perform the autopsy via Dr. Michael Dobersen at Arapahoe County Coroner's Office (720-874-3625) or Dr. Mike Arnall at (303-945-9890).

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

You must have the legal next-of-kin fill out and sign 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 consent has been pre-authorized, phone consent must still be obtained (and witnessed) 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; (c) the telephone permission is witnessed by at least two parties, and (d) 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, have another party listen in on the conversation, and then sign as witnesses. **Two witnesses are mandatory for all telephone consents.**

Mortuary Designation

You must request that the legal next-of-kin decide upon a funeral home. At the time you obtain the autopsy consent, the family must designate a mortuary. 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.

Transportation



Transportation of the body to UCH 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.

Pathologist Notification

You must notify the Department of Pathology (720-848-4421) that you have obtained autopsy consent. Be sure to provide the following information: decedent's name, medical record number, any autopsy limitations, and presumed cause of death.

Who Can Help

The **Office of Decedent Affairs (720-848-8453 or 720-848-4367)** and the Medical Records Department (720-848-1287) at UCH will provide blank Disposition Permits and 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.

APPENDIX A

DAILY COURIER TRANSPORT SCHEDULE (EFFECTIVE 9/29/11)

- *Courier runs begin at 7 am, 9am, 11am, 1pm, 3pm, and 4:30pm.*



1. 5th Floor Birth
2. 4th Floor WMCC
3. ACP Derm 3rd Fl
4. ACP 2nd Fl
5. ACP 2nd Fl BIC
6. AOP 6th Endocrin
7. AOP 6th GI
8. AOP 4th Rheumatology
9. AOP 3rd Cytology
10. AOP 2nd Day Surgery
11. AOP 2nd GI Lab
12. AOP 1st Lab Express
13. AIP 2 Frozen Section
14. Leprino 2nd Lab

APPENDIX B

Vendors for Surgical Pathology Specimen Supplies:

- McKesson (1-800-446-3008)
- StatLab Medical Products (1-800-442-3573)
- Starplex Scientific (1-800-665-0954)
- Fisher Healthcare (1-800-640-0640)

Related Documents N/A

Distribution Anatomic Pathology and Cytopathology