Bronchoalveolar Lavage (BAL)

COLLECTION PROCEDURE:

1. Submit specimen in two containers, one in CytoLyt or 95% alcohol and one without fixative, labeled appropriately.
2. Complete and submit appropriate requisitions with specimens.
3. Send immediately to the laboratory.

SPECIMEN TRANSPORT:
Specimen should be transported immediately to the laboratory. The anatomic pathologist on call should be notified if a STAT result is required.

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Body Cavity Fluids

COLLECTION PROCEDURE:

Pleural Fluid, Peritoneal Fluid, Pericardial Fluid:

1. Collect specimen in a clean, properly labeled container.
2. Collection kits may be provided by the lab. In lieu of a kit, submit at least 50 mL of specimen.
3. If there will be a delay in transporting the specimen to the lab, it is recommended that CytoLyt or 95% alcohol be added to the specimen in order to prevent degradation of specimen.
4. Send immediately to Cytopathology Lab with a completed requisition.

Peritoneal Washings, Gutter Washings, etc:

1. Using normal saline, the specimen is collected in a clean, properly labeled container.
2. If there will be a delay in transporting the specimen to the lab, it is recommended that CytoLyt or 95% alcohol be added to the specimen in order to prevent degradation of specimen.
3. If possible, at least 50 mL of fluid should be collected for proper cytologic preparation.
4. Send immediately to Cytopathology Lab with a completed requisition.

NOTE: Microbiology tests cannot be performed on samples collected or received in fixative such as CytoLyt. Send specimens for microbiology and hematology testing in separate collection containers.

SPECIMEN TRANSPORT:

Fresh specimens (not in preservative) should be taken directly to the laboratory. If that is not possible refrigerate the specimen until transport, and request refrigeration during courier transport. Cells remain interpretable in body fluids for several days with refrigeration. Cells in washings are much more fragile. Specimens in preservative may be transported at room temperature.

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Bronchial Brushings & Washings

COLLECTION PROCEDURE:

Bronchial Washings:

Specimen is collected by clinician in a clean "specimen trap". Do not add preservative.

1. Collect separate sterile specimens (without preservative) for culture studies, molecular studies, and other studies, as appropriate.
2. Do not submit bilateral samples in the same container.
3. Label container/s and send immediately to Cytopathology Lab with a completed requisition.

Bronchial Brushings:

The preferred collection method varies by hospital.

Intermountain Medical Center, St George Regional Hospital, LDS Hospital, Alta View Hospital, Riverton Hospital, Utah Valley Hospital and Park City Hospital:

1. Rinse the brush in preservative solution by rotating the brush in the solution 10 times while pushing against the vial wall. Swirl the brush vigorously in solution to further release cells.
2. Cut off the brush leaving approximately one and one-half inches of wire and drop into preservative container.
3. Do not collect bilateral samples into the same container.
4. Collect separate sterile specimens (without preservative) for culture studies, molecular studies, and other studies, as appropriate.
5. Send immediately to Cytopathology Lab with completed requisition.
6. Do not place specimen into formalin.

McKay-Dee Hospital and Logan Regional Hospital:

1. Cut off brush leaving approximately one and one-half inches of wire and drop brush into a 15-20 mL tube of cytopathology preservative obtained from the laboratory. (Formalin is never an appropriate cytopathology preservative.)
2. Do not submit bilateral samples into the same container.
3. Separate appropriate sterile specimens that need to be submitted for culture studies, molecular studies, and other special studies.
4. Send immediately to laboratory with completed requisition.

SPECIMEN TRANSPORT:

There is no time limit on transport of fixed slides or brushes placed in cytopathology preservative obtained from the laboratory. (Formalin is never an appropriate cytopathology preservative.) However, disposable brushes placed in saline should immediately be sent to the laboratory.

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Cerebrospinal Fluid (CSF)

COLLECTION PROCEDURE:

1. Collect specimen in a clean, properly labeled container.
2. Fill out requisition indicating site of tap (lumbar, ventricle, Ommaya reservoir) and relevant clinical information.
3. Send specimen immediately to the laboratory.

SPECIMEN TRANSPORT:

CSF specimens should be taken to the laboratory immediately since cells are often few and are not well preserved in this specimen. **If samples are being transported to another facility, the specimen should be placed in CytoLyt or 95% alcohol.**

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Fine Needle Aspirates (FNA)

If an adequacy check is requested, the procedure *must be scheduled, and cytology adequacy must be requested.*

COLLECTION PROCEDURE:

NOTE: When more than one anatomical site is sampled, multiple thyroid nodules, for example, submit each anatomical site specimen separately. Label the slides or containers to indicate which site the slide or container represents: for example, a left thyroid sample could include "L Thy" on the slide or container label.

Aspirates of Superficial Sites:

1. Label two clean glass slides/ pass, and/or label cytopathology collection bottle with the patient's legal name and another unique identifier such as patient's date of birth.
2. Wipe the skin over the lesion with an alcohol swab. Local anesthetic may be used but is not usually needed.
3. Attach a 22-gauge (or 25 gauge in certain sites such as thyroid) needle to a 10-20 mL syringe.
4. Pass the needle through the skin and into the lesion.
5. After the needle is in the lesion, draw back the plunger of the syringe.
6. Move the needle back and forth several times in the lesion. A "jack hammer" motion is often effective.
   NOTE: With solid lesions, material should be aspirated only into the needle and not into the syringe. Once material appears in the hub of the needle, aspiration should be discontinued. Blood is undesirable. In the case of cystic lesions, the syringe may be filled with fluid. This fluid may be submitted for cytologic examination.
7. Once aspiration is completed, release the plunger and allow it to fall back to a "neutral" position.
8. Remove the needle and syringe from the patient.

If using glass slide method, follow these steps:

1. Remove the needle from the syringe.
2. Draw air into the syringe.
3. Replace the needle onto the syringe.
4. With the bevel pointed down, express the material in the needle onto the center of a slide using firm but not excessive pressure on the plunger.
5. Immediately place the second slide over the slide with the specimen.
6. Allow the specimen to spread between the two slides without any smearing motion (other smearing methods can be used but require experience).
7. Separate the slides by gently pulling them across each other and immediately fix one slide using a spray fixative or by placing the slide in 95% alcohol. Allow the other slide to air dry. ***Make 1 fixed and 1 airdried slide/pass. Express additional material into cytology fixative.***

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8. The procedure may be repeated several times.
9. Apply pressure to the aspirated site to minimize hematoma.
10. Place the slides in a carrier and send with a completed requisition (clinical information is required) to the laboratory.

If using CytoLyt method, follow these steps:

1. Remove the needle from the syringe.
2. Draw air into the syringe.
3. Replace the needle onto the syringe.
4. Express the material in the needle into the CytoLyt. (obtained from the laboratory)
5. Thoroughly rinse the syringe by aspirating at least 2 mL of preservative and expressing it back into solution. Repeat as needed.

NOTE: Do not use Formalin

Aspirates of Deep Sites:

Deep sites are aspirated under radiologic guidance using a technique similar to that for superficial sites (see above).

A cytotechnologist or pathologist will suggest additional passes if the cellularity does not meet a minimum standard for adequacy. Once adequacy is determined additional specimen may be collected and either expressed into a CytoLyt container, 95% alcohol or onto a slide depending on laboratory preference.

1. If the lab prefers specimen in CytoLyt the specimen should be expressed into the container.
2. Do not rinse the needle using the preservative ***if the practitioner plans to re-use the needle,*** as the needle cannot be used again on the patient if it has been rinsed with preservative.
3. If needed the needle can be rinsed with sterile saline, ***or a fresh needle can be used for each additional pass***.
4. For labs that prefer specimen submitted on fixed/air dried slides, express the specimen onto a sterile slide and then spread the specimen between two slides by gently pulling them across each other. Then fix or air-dry as appropriate prior to submission to the laboratory. Make sure to indicate on the requisition whether the slides are fixed or air-dried.
5. If tissue cores are obtained, they may be rolled across a glass slide to obtain a touch imprint. Cores of tissue can then be fixed for histologic sectioning. Immunohistochemistry (for estrogen receptor, prostate specific antigen, leukocyte common antigen, keratin, etc.) can be performed on cell block and cores of tissue. Particles can be saved for electron microscopy.

SPECIMEN TRANSPORT:

There is no time limit on receipt of fixed or air-dried slides. Do not submit aspirates to the laboratory in a syringe with a needle attached.

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Gastrointestinal Tract

COLLECTION PROCEDURE:

1. Use Collection system with brush.
2. Rinse the brush in cytology preservative solution (CytoLyt) by rotating the brush in the solution 10 times while pushing against the vial wall. Swirl the brush vigorously in solution to further release cells.
3. Cut off the brush leaving approximately one and one-half inches of wire. Drop into preservative container.
4. Replace cap tightly and label container.
5. Send immediately to Cytopathology Lab with completed requisition.

- **NOTE:** a brushing can be submitted on a slide using the steps immediately below. However, this is not the preferred method and should be submitted in addition to a specimen in preservative solution as described above.
  1. Roll the contents of the brush onto a clean, labeled glass slide and fix immediately with spray preservative (within one to two seconds).
  2. Send immediately to Cytopathology Lab with completed requisition.

SPECIMEN TRANSPORT:

Brushes in saline should be immediately delivered to the laboratory. There is no time limit on receipt of specimens in preservative.

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Nipple Discharge

COLLECTION PROCEDURE:

1. Express secretion by gently compressing the full circumference of the areola between thumb and index finger. When a mass is palpable, the area between the mass and nipple may be compressed.
2. Smear secretion on a clean, labeled (patient name and date of birth), glass slide. If secretion is scanty, the slide may be touched to the nipple. If secretion is thick, it may be smeared between two slides. Spray fix slides immediately ***by either spraying the slides with an aerosol fixative (***hold aerosol spray four to six inches from slide and apply for one to two seconds) ***or immersing the slide into 95% alcohol****.*
3. Place slides in carrier and send to Cytopathology Lab with a completed requisition. Indicate right or left on the requisition.

SPECIMEN TRANSPORT:

There is no time limit for transport of fixed slides.

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Sputum Cytopathology

COLLECTION PROCEDURE:

Inpatient sputum:

1. Be sure that the specimen collected is an early morning, deep cough specimen (preferably before breakfast) and not saliva.
2. Have patient cough into a clean, labeled specimen container. Do not add preservative.
3. Send specimen with completed cytopathology requisition to the laboratory.

Outpatient sputum collected at clinical office:

1. Specimen must be collected in labeled sterile container.
2. Be sure that the specimen collected is an early morning, deep cough specimen (preferably before breakfast) and not saliva.
3. After patient expectorates into container, clinician staff should add CytoLyt, then replace lid and shake container to distribute preservative.
4. Send properly labeled specimen with completed cytopathology requisition to the laboratory.

Post-bronchoscopy sputum (24-hour post-bronchial sputum):

1. Collect ONE good, deep cough specimen at any time during the 24 hours following bronchoscopy. Pooled 24-hour continuously collected sputa are not suitable for cytopathology.
2. Send specimen with completed cytopathology requisition to the laboratory.

Induced Sputum:

1. A heated aerosolized solution of 15 percent NaCl and 20 percent Propylene Glycol is inhaled by the patient for 20 minutes.
2. Have patient cough into a clean, labeled specimen container. Do not add preservative.
3. Send specimen with completed requisition to the laboratory.

SPECIMEN TRANSPORT:

Fresh sputum specimens should be sent immediately to the laboratory. There is no time limit on receipt of fixed outpatient sputum in preservative solution.

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Urine, Renal Pelvic Washings & Bladder Washings

COLLECTION PROCEDURE:

Urine:

1. Collect at least 50 mL of specimen either via catheter or as a clean catch (voided) urine in a clean appropriately labeled power cup.
2. For optimal cytologic evaluation of urine, first-voided morning specimens should not be used.
3. Send immediately to the cytopathology laboratory with completed requisition making sure to indicate collection method (voided or catheterized).
4. If specimen cannot be sent immediately to the cytopathology laboratory, please refrigerate or pour fresh urine into an appropriately labeled CytoLyt container (obtainable from the lab).

   NOTE: Do not use Formalin. Specimens may not be used for culture if CytoLyt has been added. If the patient is unable to produce 50 mL, you may send the sample for processing, but it may be limited by scant cellularity.

Renal Pelvis and Bladder Washings:

1. Using normal saline, collect the washing specimen in a clean, labeled specimen container.
2. Indicate the specimen type/source on both the container and the requisition. If a renal pelvic washing, include right or left as part of the specimen source.
3. Send immediately to the laboratory with the completed requisition. Indicate on the requisition that the specimen is a washing.
4. If the specimen cannot be taken to the laboratory immediately after collection, pour fresh specimen into a CytoLyt container (obtainable from the lab).

   NOTE: Do not use Formalin. Specimens may not be used for culture if CytoLyt has been added

SPECIMEN TRANSPORT:

Unpreserved refrigerated urines and washings are viable for Cytologic evaluation for 24 hours and should be sent directly to the laboratory. Preserved specimens are viable for Cytologic evaluation for 7 days.

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Anatomic Pathology

The following information for Pathology tissue specimens does not apply to pediatric specimens. Please call the Primary Children's Pathology Office for proper handling and submission of pediatric specimens, M-F, 8am-5pm, 801-662-2150.

For other site-specific special handling instructions, see contact information below.

CONTACT INFORMATION

Central Region Pathology	801-507-7970
Central Lab EM	801-507-2171
Central Laboratory EM Technician on-call pager	801-249-4230
Central Lab Flow Cytometry	801-507-2276 801-507-2217
Logan Regional Hospital	435-716-5203
Cedar City Hospital	435-868-5090
St George Regional Hospital	435-251 2208
Utah Valley Hospital	801-357-2364
McKay-Dee Hospital	801-387-7338 after hours 801-387-7366