Bronchoalveolar Lavage (BAL) Collection

COLLECTION PROCEDURE:

1. If testing for both microbiology and cytology are desired, the Microbiology Department and the Cytopathology Department should each receive a separate specimen.
2. For Microbiology, collect the specimen in a sterile, labeled container. Do not add preservative. Complete appropriate microbiology requisition.
3. For Cytology, the specimen may be collected in a sterile container with or without preservative. Formalin is never an appropriate cytopathology preservative. Complete a cytopathology requisition.
4. Send immediately to the laboratory.

NOTE: For specimens referred to Dixie Regional Medical Center and Utah Valley Hospital, it is preferred that cytopathology specimens be collected with preservative.

SPECIMEN TRANSPORT:

Specimen should be transported immediately to the laboratory. The anatomic pathologist on call should be notified if a STAT result is required. Specimens should be submitted for both cytologic examination and culture.

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Body Cavity Fluids Collection

COLLECTION PROCEDURE:

Pleural Fluid, Peritoneal Fluid, Pericardial Fluid:

1. Collect specimen in a clean, properly labeled container.
2. Add five units of heparin for each mL of fluid. Gently agitate the specimen. Do not add preservative.
3. If at all possible, at least 50 mL of fluid should be collected for proper cytologic preparation.
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.
   Due to the time required to transport specimens to the laboratory it is recommended that cytopathology preservative be added to the specimen in order to prevent degradation of specimen.
2. If cytopathology preservative is not available, add five units of heparin for each mL of fluid. Gently agitate the specimen. Specimen should be refrigerated in order to maintain cellular integrity.
3. If at all 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: We recommend providing separate specimens for microbiological and/or hematological studies.

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

COLLECTION PROCEDURE:

Bronchial Washings:

1. Specimen is collected by clinician in a clean "specimen trap". Do not add preservative.
2. We recommend collecting separate sterile specimens (without preservative) for culture studies, molecular studies, and other studies, as appropriate.
3. Label container and send immediately to Cytopathology Lab with a completed requisition.

Bronchial Brushings:

The preferred collection method varies by hospital.

Intermountain Medical Center, LDS Hospital, Alta View Hospital, Riverton 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. Collect separate sterile specimens (without preservative) for culture studies, molecular studies, and other studies, as appropriate.
4. Send immediately to Cytopathology Lab with completed requisition.

Utah Valley Hospital and Dixie Regional Medical Center:

1. Cut off brush leaving approximately one and one-half inches of wire and drop into a 15-20 mL tube of saline. If the specimen cannot be taken immediately to the laboratory, drop it into a 15-20 mL tube of cytopathology preservative obtained from the laboratory. (Formalin is never an appropriate cytopathology preservative.)
2. Send immediately to Cytopathology Lab with completed requisition.

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. Separate appropriate sterile specimens that need to be submitted for culture studies, molecular studies, and other special studies.
3. 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

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 in number and are not well preserved in this specimen.

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Fine Needle Aspirates (FNA) Collection

COLLECTION PROCEDURE:

Aspirates of Superficial Sites:

1. Label two clean glass slides 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:

9. Remove the needle from the syringe.
10. Draw air into the syringe.
11. Replace the needle onto the syringe.
12. 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.
13. Immediately place the second slide over the slide with the specimen.
14. Allow the specimen to spread between the two slides without any smearing motion (other smearing methods can be used but require experience).
15. 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.
16. The procedure may be repeated several times.
17. Apply pressure to the aspirated site to minimize hematoma.
18. Place the slides in a carrier and send with a completed requisition (clinical information is required) to the laboratory.

If using cytopathology preservative method follow these steps:

19. Remove the needle from the syringe.
20. Draw air into the syringe.
21. Replace the needle onto the syringe.

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22. Express the material in the needle into the cytopathology preservative obtained from the laboratory. (Formalin is never an appropriate cytopathology preservative.)
23. Thoroughly rinse the syringe by aspirating at least 2 mL of preservative and expressing it back into solution. Repeat as needed.

Aspirates of Deep Sites:

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

If an adequacy check is requested express the first pass onto a sterile slide for rapid staining and adequacy evaluation by a cytotechnologist or pathologist. Additional passes may be collected for adequacy evaluation if needed to obtain an adequate sample. Once adequacy is determined additional specimen may be collected and either expressed into a cytopathology preservative container or onto a slide depending on laboratory preference.
If the lab prefers specimen in cytopathology preservative the specimen should be expressed into the container. Do not rinse the needle using the preservative as the needle cannot be used again on the patient if it has been rinsed with preservative. If needed the needle can be rinsed with sterile saline.

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.

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.

Gastrointestinal Tract Collection

COLLECTION PROCEDURE:

The preferred collection method varies by hospital.

McKay-Dee Hospital, Intermountain Medical Center, LDS Hospital, Alta View Hospital, Riverton 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. Drop into preservative container.
3. Replace cap tightly and label container.
4. Send immediately to Cytopathology Lab with completed requisition.

NOTE: At LDS Hospital, Alta View Hospital, Riverton Hospital, Park City Hospital and Intermountain Medical Center 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.

Utah Valley Hospital and Dixie Regional Medical Center:

1. Cut off brush leaving approximately one and one-half inches of wire. Drop into a 15 mL tube of saline. If the specimen cannot be taken immediately to the laboratory, drop it into a 15 mL tube of cytopathology preservative obtained from the laboratory. (Formalin is never an appropriate cytopathology preservative.)
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

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, 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 (hold aerosol spray four to six inches from slide and apply for one to two seconds). (For Logan Regional Hospital place the slide immediately into a bath of 95% alcohol to fix cells.)
3. Place slides in carrier and send to Cytopathology Lab.

SPECIMEN TRANSPORT:

There is no time limit for transport of fixed slides.

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Sputum Cytopathology Collection

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:

1. Specimen must be collected in labeled container with CytoLyt™ preservative. CytoLyt™ preservative is available from Laboratory Client Services, **801-507-2110** or **877-353-1106**.
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, replace lid and shake container to distribute preservative.
4. Send 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

COLLECTION PROCEDURE:

Voided Urine:

1. Specimen is collected by patient. Be sure all specimens are collected "clean catch" and in properly labeled containers.
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. **Make sure to note that specimen is a voided urine.** If specimen cannot be sent immediately to the cytopathology laboratory, please refrigerate.
4. An alternative (especially if a delay in transport to the laboratory is anticipated) is to collect the specimen in a container of cytopathology preservative obtained from the laboratory. (Formalin is never an appropriate cytopathology preservative.) This is the preferred method at LDS Hospital, Alta View Hospital, Riverton Hospital, Park City Hospital, Intermountain Medical Center, Utah Valley Hospital and Dixie Regional Medical Center.

Catheterized Urine:

1. Specimen is collected by clinician or nursing staff in a clean, properly labeled container and sent immediately to the Cytopathology Laboratory with completed requisition. **Make sure to note that specimen is a catheterized urine.**
2. An alternative (especially if a delay in transport to the laboratory is anticipated) is to collect the specimen in a container of cytopathology preservative obtained from the lab. (Formalin is never an appropriate cytopathology preservative.) This is the preferred method at LDS Hospital, Alta View Hospital, Riverton Hospital, Park City Hospital, Intermountain Medical Center, Utah Valley Hospital and Dixie Regional Medical Center.

Renal Pelvis and Bladder Washings:

1. Using normal saline, the washing specimen is collected by a clinician in a clean, labeled specimen container. Specifically designate right or left pelvis washing.
2. Send immediately to the laboratory with a completed requisition. Indicate that the specimen is a washing.
3. At Utah Valley Hospital, add an equal volume of cytopathology preservative (obtainable from the lab) to the specimen. (Formalin is never an appropriate cytopathology preservative.)

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SPECIMEN TRANSPORT:

Urine specimens without preservative should be sent directly to the laboratory or refrigerated if any delay is anticipated. Unpreserved refrigerated urine is suitable for cytologic examination for 24 hours. If specimens cannot be refrigerated or if a long delay in transport is anticipated, the specimen should be collected in an equal volume of cytopathology preservative obtained from the laboratory. (Formalin is never an appropriate cytopathology preservative.) This is the method preferred at Utah Valley Hospital. There is no time limit in transport of these preserved specimens. Washings should be sent directly to the laboratory.

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