Respiratory Specimens

*Expectorated Sputum*
The optimum number of specimens submitted for Cytopathology examination to diagnose cancer is three. The optimum number to rule out cancer is five. A first morning specimen is ideal for mycobacterial culture or Cytologic examination. Have the patient rinse his/her mouth and gargle with water prior to sputum sampling. The patient coughs deeply and expectorates directly into the specimen container. Collect at least 15 mL of sputum. The specimen will be unsatisfactory for Cytologic examination if the patient is unable to cough deeply.

*Tracheotomy and Endotrachael Aspirates*
Tracheotomy colonization with bacteria usually follows within 24 hours of tube insertion. Results of these specimens must be correlated with gram stain, x-ray and clinical findings. Aspirate the specimen into a sterile sputum trap.

*Nasotracheal Aspiration*
Send the specimen obtained to the laboratory in sterile container or use appropriate transport media (see Table 2) for cultures.

*Bronchoscopy Specimens*
Bronchoscopy specimens include bronchoalveolar lavage, bronchial washing, bronchial brushing and transbronchial biopsy specimens.

**Bronchial Wash or Bronchoalveolar Lavage**
These specimens are generally obtained before brush or biopsy specimens to avoid contamination with blood.
1. Keep the aliquots from each site separate unless the physician wishes them to be combined.
2. For cytology pathology examination send a fresh, unfixed specimen to the laboratory.

**Bronchial Brush**
- Cultures - After brushing has been completed, place the brush tip into a 1.0-ml aliquot of thioglycollate broth obtained from the laboratory. Send the specimen to the laboratory as soon as possible for processing.
- Cytology examination – Apply specimen to a clean and labeled slide by gently pressing and rolling the brush across the slide. Immediately fix the slide to prevent drying which severely impairs evaluation of the specimen. Spray fix the slide or place it into a jar of 95% alcohol. As an alternative, place the brush into a container of Cyto Lyt (obtain Cyto Lyt container from the Cytology laboratory).

**Transbronchial Biopsies**
- Cultures - Place the sample in a small amount of nonbacteriostatic isotonic saline and transport to the laboratory as soon as possible for processing.
- Pathology examination – Place a separate portion of tissue in 10% neutral buffered formalin and send to the laboratory.

**Lung Aspirations**
- Cultures – Place specimen into the appropriate transport media for aerobic and/or anaerobic cultures. If this is not possible, transport the specimen directly to the laboratory within 20 minutes of collection.
- Cytology examination - See **Fine Needle Aspirate** procedure outlined in later sections (page 80).
Lung Biopsies
Surgically obtain a 1-3 cm square piece of tissue if possible. If the lesion is large or there are multiple lesions, collect samples from each representative area.

- Cultures - Submit specimens in a small amount of saline in a sterile container. Do not add formalin for microbiologic examinations.
- Pathology examination - Submit a separate portion of tissue in 10% neutral buffered formalin and send to the laboratory.