

COLLECTION OF CLINICAL SPECIMENS FOR MYCOBACTERIAL TESTING

For diagnostic purposes, wherever possible, all clinical specimens should be collected before the initiation of chemotherapy. All clinical specimens should be collected, transported to the laboratory, and processed in a single container. The recommended container is a sterile 50 ml, leak-proof, disposable, graduated screw top conical tube.

Specimen containers sent out of the laboratory for the purpose of collecting specimens should be sterile with caps tightened.

An appropriate requisition, F-40B Specimen Submission Form should accompany all clinical specimens.

SPUTUM

The specimen should be collected only in an appropriate container clearly labeled with the patient's name, date of birth, case number, site of specimen, and date of collection.

A series of single specimens (minimum of three), each not to exceed 10ml in volume, should be collected from productive patients on successive days.

Preferably collect an early morning sample of sputum. Refrigerate the specimens between collection and processing to suppress contaminants and reduce odors.

For patients who have difficulty in raising sputum, several other methods may be used to obtain secretions from the lung for the culturing of mycobacteria.

1. NEBULIZED – Saline solutions have proved to be excellent means of inducing sputum.
2. LARYNGEAL SWAB – Should only be employed with small children.
3. BRONCHOSCOPY – Aspiration of secretions obtained at time of examination.
4. POST-BRONCHOSCOPY SPUTUM – Patients may be self-productive for several days due to bronchoscopy procedure.
5. TRANSTRACHEAL ASPIRATION – Especially productive in small children.
6. GASTRIC CONTENTS - Aspiration that contains swallowed sputum.

GASTRIC WASHINGS

The specimen should be collected early in the morning on a fasting stomach, preferably while the patient is still in bed.

Since mycobacteria may die rapidly in gastric washings, these specimens should be processed as soon as possible after collection.

If prompt processing (within 4 hours) is not possible, neutralization should be attempted with buffer tablets, and/or the addition of 10% sodium carbonate until a pH of 7 or 8 is achieved using phenol red as an indicator.

A minimum of three specimens should be submitted.

URINE

The recommended collection time is the first-passed early morning voided (“clean catch”) or catheterized urine.

The entire volume of voided urine is collected in a sterile container. The laboratory volume requirement is 20-40 ml in a sterile 50 ml conical tube (primary receptable), leak-proof, disposable, with tight screw cap.

A minimum of three individual urine specimens should be submitted (one specimen per day for 3 consecutive days). Refrigerate between collections.

A 24-hour pooled urine specimen is not recommended and should be discouraged because it is likely to be contaminated and to contain fewer viable tubercle bacilli.

OTHER MATERIAL

Specimens of CSF, Pleural and Pericardial Fluid, Pus, Joint Fluid, Bronchial Secretions, Feces, Resected Lung Tissue, and Autopsy Material may be submitted for study.

Tissue specimens may be frozen when a delay in processing is necessary. All tissue specimens must be thoroughly ground in the grinder or with sterile scissors before being processed.

Stool specimens recommended collection volume is a minimum of 1g in a sterile 50 ml, leak-proof, disposable, graduated screw top conical tube.

When necessary, sterile anticoagulants, such as heparin or ammonium oxalate, may be used to keep the specimen fluid.

UNACCEPTABLE SPECIMENS

- **Swabs** are not recommended for the isolation of mycobacteria since they provide limited material. They are acceptable only if a specimen cannot be collected by other means.
- **24-hour pooled Sputum** specimens. A large percentage of these specimens consist of saliva and contain fewer viable tubercle bacilli.
- **Blood collected in EDTA**, which greatly inhibits mycobacterial growth even in trace amounts.
- Specimens submitted in **Formalin**, which is a tuberculocidal agent.

TRANSPORTATION AND STORAGE OF SPECIMENS

Specimens collected at Regional Health Departments must be refrigerated upon collection and transported by courier, on ice packs/ice, within 24 hours of collection.

PROCEDURE FOR REJECTION OF SPECIMENS

1. The submitter will be notified by phone as soon as possible that the specimen is unacceptable and explained the reason. Also, explained what specimen(s) would be acceptable for the given clinical situation.
2. Rejected specimens not processed should be held for a minimum of 3 days at 2-8°C.