MYCOLOGY SPECIMEN COLLECTION PROTOCOL

All efforts should be made to collect specimens for fungal culture as free from bacterial contamination as possible.

HAIR, SKIN AND NAILS

The scalps of patients with suspected tinea capitis may be examined with a Wood's lamp. Fluorescent distorted or fractured hairs should be removed with forceps. Infected hairs can easily be removed, but normal hairs are more difficult to dislodge. A comb or brush may be used to collect loose hair and skin squames.

Skin, when involved, should be cleansed with an alcohol wipe before a specimen is collected. Epidermal scales at the active border of a lesion should be removed with a scalpel. Nails should be cleansed with alcohol wipe, and the outermost layer should then be removed by scraping with a scalpel. Deeper scrapings, debris from under the edges of the infected nails, and nail clippings from infected areas are also suitable for culture.

Samples of hair, skin and nails should be collected and placed in a sterile culture dish for transport to the Laboratory. Storage of 4°C is not recommended since at least one dermatophyte is susceptible to cold temperatures. In addition, storage in closed containers is unsuitable due to overgrowth of contaminating bacteria and saprobic fungi in a moist environment.

Nail clippings may be ground in a mortar before being inoculated onto culture media. Skin scrapings and hair may be inoculated directly onto the surface of appropriate culture media.

BODY FLUIDS INCLUDING CEREBROSPINAL FLUID

All body fluids are collected aseptically by needle aspiration and should be sent to the Laboratory in a sterile container as quickly as possible. **However, if a delay is unavoidable, CSF should NOT be refrigerated, since it is an excellent culture medium and fungi will continue to replicate at 25-30°C.**
Other body fluid specimens may be stored at 4°C overnight, if necessary before culturing. All body fluids should be concentrated by centrifugation for 15 minutes at 1000 x g, and a minimum of 0.5 ml of sediment should be inoculated onto the surface of media. Small volumes of CSF not suitable for centrifugation may be dropped directly on media surface.

BLOOD AND BONE MARROW

As with the collection of other sterile body fluids, good skin antisepsis should be practiced for blood sample collection. Ten milliliters of blood should be collected at periodic intervals as determined by the physician. Blood is inoculated to Blood Culture bottles at bedside. Bottles should be returned immediately to Laboratory for incubation at 35°C for 28 days.

Bone marrow aspirates and biopsies are collected after good skin antisepsis and are commonly submitted to the Laboratory in a sterile syringe or tube containing EDTA. The collected specimen should be transported to the Laboratory as soon as possible; however, it may be refrigerated for no longer than 12 hours, if immediate culturing is impossible. Direct plating on mycology media can be done at bedside. Media may be obtained from the Microbiology department (ext. 2408)

URINE

The urinary meatus must be adequately cleansed if a clean-catch or catheterized specimen is to be submitted for culture. Suprapubic aspirates are obtained after good skin antisepsis is used in the area of aspiration. Specimens should be cultured promptly since bacteria and yeasts replicate rapidly in specimens kept at room temperature. If specimens cannot be cultured soon after receipt, they should be refrigerated at 4°C for no longer than 12 to 15 hours. Twenty-four-hour specimens or those collected from indwelling catheter collection bags are not suitable for culture.

VAGINAL SECRETIONS

Vaginal and cervical specimens collected by a physician are usually submitted on a swab. Transport to the Laboratory should be rapid; however overnight refrigeration before culturing is satisfactory. Specimens should not be stored at room temperature.

RESPIRATORY SPECIMENS

Specimens from the ear, nose, nasopharynx, and mouth are usually submitted on a sterile swab.

All specimens from the lower respiratory tract should be collected in a sterile wide-mouth bottle or sputum cup. A first morning expectorated sputum specimen is optimal. Before a sputum specimen is collected the patient's teeth must be extensively brushed or his or her dentures be removed. The mouth should be cleansed by a mouthwash or several rinses of sterile water of saline. Only a specimen expectorated from deep within the lungs if satisfactory. For those patients incapable of expectoration, sputum induction is necessary.

Specimens should be transported to the Laboratory as soon as possible to ensure maximum recovery of fungi. If culturing is delayed, specimens may be refrigerated at 4℃.

TISSUES/BIOPSIES

Tissue should be divided aseptically by the surgeon in the operating room, and material respresentative of the infectious process should be submitted to the Surgical Pathology lab for culture and direct microscopic examination. All biopsy tissues should be placed in a sterile container containing a small amount of saline without a preservative. When an abscess is drained, a portion of the abscess wall should be submitted for culture. The surgical pathologist will visually examine specimens prior to submission to the Microbiology lab.

Surgical specimens should be transported to the Surgical Pathology laboratory as soon as possible after collection. If immediate culturing is impossible, specimens should be stored at 4℃ for no longer than 8-10 hours.

Reference: Manual of Clinical Microbiology, Fourth Edition, Lennette, Balows, Hausler, Shadomy, page 504-513.