

## B. Central Nervous System (CNS) Specimens

### 1. CSF

Suggested volumes are 1ml, 2ml, and 2 ml for routine, fungal, and mycobacterial cultures, respectively.

#### a) Lumbar puncture

- (1) Clean the puncture site with antiseptic solution and alcohol before needle insertion to prevent introduction of infection.
- (2) Insert a needle with stylet at the L3-L4, L4-L5, or L5-S1 interspace. When the subarachnoid space is reached, remove the stylet and spinal fluid will appear in the needle hub.
- (3) Slowly drain the CSF into the sterile leakproof tubes. Three tubes are generally required for microbiology, hematology, and chemistry testing. The second tube drawn will generally go to microbiology, and the last tube drawn will generally go to hematology. (In traumatic taps, the CSF will often clear as the later tubes are collected.)

#### b) Ommaya reservoir fluid

- (1) Clean the Ommaya reservoir site with antiseptic solution and alcohol prior to removal of Ommaya fluid to prevent introduction of infection.
- (2) Remove Ommaya fluid via the Ommaya reservoir unit, and place it in a sterile tube.

### 2. Other CNS specimens

#### a) Brain abscess

- (1) Ninety percent of brain abscesses will grow anaerobic bacteria (8). Transport the specimen without delay in a sterile screw-cap cup to the microbiology laboratory for **IMMEDIATE** processing.
- (2) A physician aspirates material from a lesion and sends it to the microbiology laboratory in a sterile screw-cap cup or syringe. See Table 1 for transport of specimens in a syringe.

#### b) CNS biopsy samples

- (1) Obtain a biopsy sample from the lesion at surgery and send it to the microbiology laboratory in a sterile screw-cap cup for immediate processing. **DO NOT ADD FORMALIN.**

### 3. CNS specimen collection considerations are outlined in Table 4.

**Table 4: Collection Considerations for CNS Specimens**

Culture	Vol (ml) <sup>a</sup>	Comments
Bacteria	1	Send cloudiest CSF specimen to microbiology laboratory immediately; <b>(Tube no. 2 is preferred).</b>
Fungi	2	Rule out <i>Cryptococcus</i> spp., <i>Coccidioides immitis</i> Mycobacteria: <i>Mycobacterium tuberculosis</i> , <i>Mycobacterium Avium</i> , <i>Mycobacterium intracellulare</i>
Mycobacteria	2	Brain abscess or CNS biopsy specimens
Anaerobes	NA	Brain abscess or CNS biopsy specimens
Parasites	NA	Brain abscess or CNS biopsy specimens for <i>Entamoeba histolytica</i> , <i>Toxoplasma gondii</i> , <i>Naegleria</i> species <sup>b</sup> , <i>Acanthamoeba</i> spp. <sup>b</sup>
Virus	1-2	Send to laboratory on ice.

<sup>a</sup> Amounts are guidelines applicable. Greater volumes increase the chance of organism recovery. NA, not applicable.

<sup>b</sup> CSF can be submitted.