

Clinical laboratory specimens

Before receiving any sample we must be sure of the followings:

1. The patient did the right during giving sample (like giving urine sample during midstream).
2. The sample is labeled with name, date and test and well sealed or closed in appropriate containers to avoid samples contamination especially those for culturing.
3. The time for operating tests is important because some samples will be useless when stored for long time like swabs for culturing.
4. The environmental conditions of storage for samples are important to notice.
5. The quantity of specimen if it is enough to do the ordered test, e.g. blood for serological tests.

Specimens Types:

Any clinical laboratory expects the following specimens:

1. Urine sample.

Can be used for general urine examination GUE, urine culture and antibiotic sensivity tests or for sugar test.

2. Blood sample.

Can be classified for to types:

A. Whole blood:

When the blood was collected in tubes with anticoagulant e.g. EDTA and Heparin, the blood will not be clotted whole blood is

usually used for total W.B.C count, complete blood film or differential W.B. Count, ESR (erythrocytes sedimentation rate), the work with whole blood need for gentle because R.B.C.s are able to be broken easily and cause hemolysis then sample will be useless.

Sometimes whole blood collected in special containers with EDTA and iodide will be used for decontaminate containers surface. This sample will be used for blood culturing in bacteremia cases e.g. *Brucellosis*.

B. Serum:

When the blood is collected in ordinary tubes without anticoagulant, then blood will be clotted, serum (yellow liquid) will be separated by centrifugation and moved to other clean tube, serum is the most common sample used in clinical laboratories tests, it can be used for wide broad of tests e.g. Serum Sugar (fasting or random), Creatinine, Rose Bengal, widal, and others.

3. Stool sample (feces):

The most common test ordered for feces samples is General Stool Examination (GSE), mainly for diarrhea and dysentery cases, sometimes physician needs stool culture for antibiotic sensitivity test, in addition, some specialized clinical laboratories generate parasite detection tests using feces samples for detecting parasitic stages like ova, trophozoite, cyst.

4. Cerebrospinal fluid (CSF):

Using of this sample is limited with some laboratories and used for CSF film or culture and these tests are ordered in some cancer cases, encephalitis and meningitis.

5. Seminal fluid:

This specimen used for seminal fluid test (SFT), usually during male infertility cases for counting number and detecting viability, activity and abnormal forms, also other items involved in this test, and rarely need culturing .

6. Organs and tissue for histopathology:

These samples are limited with special laboratories and ordered for the diagnosis and identification of cancer and malignant tumors and usually performed by specialized physician with histopathology.

7. Swabs:

A wooden cotton stick satirized or a disposable one with special container. These swabs are usually used for culture and antibiotic sensitivity test to determine the most effective antibiotic for treatment. Abscess and exudates from infected area like tonsils, middle ear, wounds, nose, etc. The most important part during taking swab samples is to serialize the skin or neighboring area (if possible) before take the swab to avoid contamination with normal flora or other organisms like fungi.

8. Sputum:

This sample usually used for culturing and antibiotic sensitivity test during pneumonia and other respiratory tract infections (RTI). This sample can be used for smear preparation also.

9. Skin scales:

These samples can be taken by infected skin scratch and usually used for slides preparations using special stains for fungi and molds detection. Sometimes they are used for culturing in special media for further diagnosis.