ALMUSTAQBAL UNIVERSITY

College of Health and Medical Techniques
Medical Laboratories Techniques Department

Stage : Fourth year students
Subject : Laboratory Management - Lecture 10

Lecturers:

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Medical Sample collection requirements

Sample collection and preservation will vary, depending on the test and the type of sample to be collected. The laboratory must carefully define a sample collection process for all tests it performs.

The following should be considered when preparing instructions.

1. Patient preparation:

Some tests require that the patient be fasting. There may also be special timing issues for tests such as blood glucose, drug levels and hormone tests.

2. Patient identification:

The person collecting the sample must accurately identify the patient. This might be done by questioning the patient, by questioning an accompanying family member, or by the use of an identifying wristband or other devices.

3. Type of sample required:

Blood tests might require serum, plasma or whole blood. Other tests might require urine or saliva. Microbiology testing deals with a variety of sample types, so specific information as to what is required for the test is needed.

4. Type of container:

The container for the sample is often very important, as it will affect the volume and any needed additives such as anticoagulants and

preservatives. Some microbiology samples will require specific transport media to preserve microorganisms.

5. Sample labelling:

All requirements for labelling of the sample at the time of collection will need to be explained in detail in the instructions for collection. Each sample should be clearly labelled with:

a. The patient's name;

b. A unique identification number—this might be a hospital number or a number assigned by the laboratory;

c. The test that has been requested;

d.The time and date of collection;

e. The person collecting the sample.

6. Special handling:

Some samples may require special handlings, such as immediate refrigeration, protection from light or prompt delivery to the laboratory. Any important safety precautions should be explained.

The patient themselves sometimes collects patient samples; for example, faecal parasitological samples. The laboratories must set protocols to ensure that appropriate collection kits with instructions for collection, safety precautions and labelling are available for their patients. It is suggested that instructions for the patients be in the languages of the community the laboratory is serving, or presented as simple, easy-to-understand graphics**.**

Outcomes of collection errors

Proper sample collection is an important element of good laboratory practice. Improper collection of samples can lead to poor outcomes, such as:

1. Delays in reporting test results
2. Unnecessary redraws/retests
3. Decreased customer satisfaction
4. Increased costs
5. Incorrect diagnosis or treatment

Standard Precautions to prevent contamination of specimen and technician

a. General Precautions

1. Always wash hands before and after the collection of specimens.

2. Wear gloves when necessary.

3. Disposal of needles, syringes and sharps must be into sharps containers.

b. precautions on Sample Collection

1. Always identify the patient information.

2. Select the right equipment required to collect the specimens (blood tubes, swabs etc.).

3. Once the sample is collected, dispose of any sharps objects immediately.

c. Containers used

There is a great variety of containers in which microbiological samples can be collected, with a common characteristic of all of them being that they are sterile and with a leak-proof seal. The swabs can be made of different materials The size and shape of the swab will vary depending on the anatomical location and the type of sample to be taken. Blood culture bottles, tubes and bottles with screw closure, sterile petri dishes and syringes can also be used.

Consequences of poor Sample collection

The consequences of a poorly taken, poorly preserved or poorly transported sample, can result in a failure in the isolation of the causing agent or the isolation of possible contaminating microorganisms that can generate unnecessary or inappropriate treatments.

The Microbiology laboratory should prepare a clear and concise manual with the rules for collecting and transporting samples which is available to all professionals who may request samples for microbiological study

Microbiology Specimens storage

To ensure the quality of results, specimens should be transported to the laboratory as soon as possible. However, if there is a delay, to minimise deterioration it is recommended that the following guidelines be followed. In general, samples collected for microbiological studies should be sent as quickly as possible to the Microbiology laboratory.

1. Specimens of swabs, Urine, Faeces, Body fluids/aspirates, Sputa, and Tissue samples should be stored at refrigerator temperature until transport to the laboratory.

2. Some specimens should be stored at room temperature such as Blood Cultures and Mycology skin scraping

3. Seminal Fluids for Infertility is to be kept at body temperature (within 1 hr.).

4. For Chemistry, Haematology, and Immunology tests it is preferable and ideal to have all blood specimens sent to the lab as soon as possible.

5. Histology Specimens are to be fixed in Formalin at Room temperature.

6. Cytology Smears Fixed slides are transported to the Lab in slide holders after fixing and air-drying.

Storage of samples after processing

The storage of processed samples must include sufficient time to resolve any type of complaint or to extend any request by the responsible clinician or the microbiologist who is processing the sample. Most samples (sterile and non-sterile) should be stored at 4°C, with the sterile samples left for a minimum of seven days and storage between two and four days sufficient for the rest of the samples.