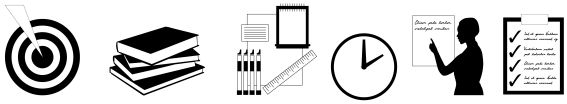
THE REPUBLIC OF UGANDA
MINISTRY OF HEALTH

UGANDA Supranational® Reference Laboratory
Timely Accurate Diagnostics for a TB-Free Africa

Laboratory Quality management system

MODULE: 2
Facility and Safety

Part 9.0: Facility and Safety



Scenario—Need for Biosafety Management

Objective

To allow participants to identify the need for biosafety management.

Suggested Time 10 minutes

Problem solving: use as an individual or group activity, or as a class discussion.

Instructions Give the participants a copy of the following scenario and/or show it as a slide (Presentation 2, slide 3). Allow 2 minutes for them to read.

Your laboratory specializes in Bacteriology. There is an epidemic of MDR and XDR TB in your country and the Ministry of Health names your laboratory as the reference laboratory for processing all samples.

What are the elements to consider for ensuring biosafety in your laboratory?

Ask the question:

What are the elements to consider ensuring biosafety in your laboratory?

Expected Results

Try to direct the discussion so that participants list the main elements of protection that are described in the contents sheets for this module.

MATERIALS:

1. Handouts,
2. Slides
3. Computer
4. Over head projector
5. Flip chart
6. Markers and pens

7. Note books
8. Exercise: stickers for equipment placement and lab flow diagram.

TIMELINE: 180 Minutes

METHODOLOGY:

1. Lectures
2. Discussion
3. Group exercise

ADVANCE PREPARATION:

1. Ensure that adequate exercise materials are available, i.e each group should have at least two exercise materials/ drawings
2. Make sure that adequate instructions are printed and issued out to the various groups, i.e. each group member should have a copy of the exercise instructions.
3. Confirm that the stickers are appropriate and adequately stick onto the diagrams prior to starting the class

FACILITATORS STEP-BY STEP INSTRUCTIONS:

1. Welcome and Introduction
2. Present module overview
3. Involve participants in a discussion about basic safety measures and personal protective equipment (PPE) used in laboratories.
4. Proceed with presentation
5. Recap presentation using assessment questions
6. Ask if there is any question

FACILITATORS NOTES

1. This session should be handled by at least more than one facilitator such as to guide the various groups during the exercise.
2. Encourage active participation
3. Use various illustration and examples from laboratory practices

SLIDE OF POWERPOINT PRESENTATION

SITUATION ANALYSIS/ EXERCISES

Critical Analysis of a Simple Laboratory Plan

Purpose; To analyze a laboratory plan.

5 minutes

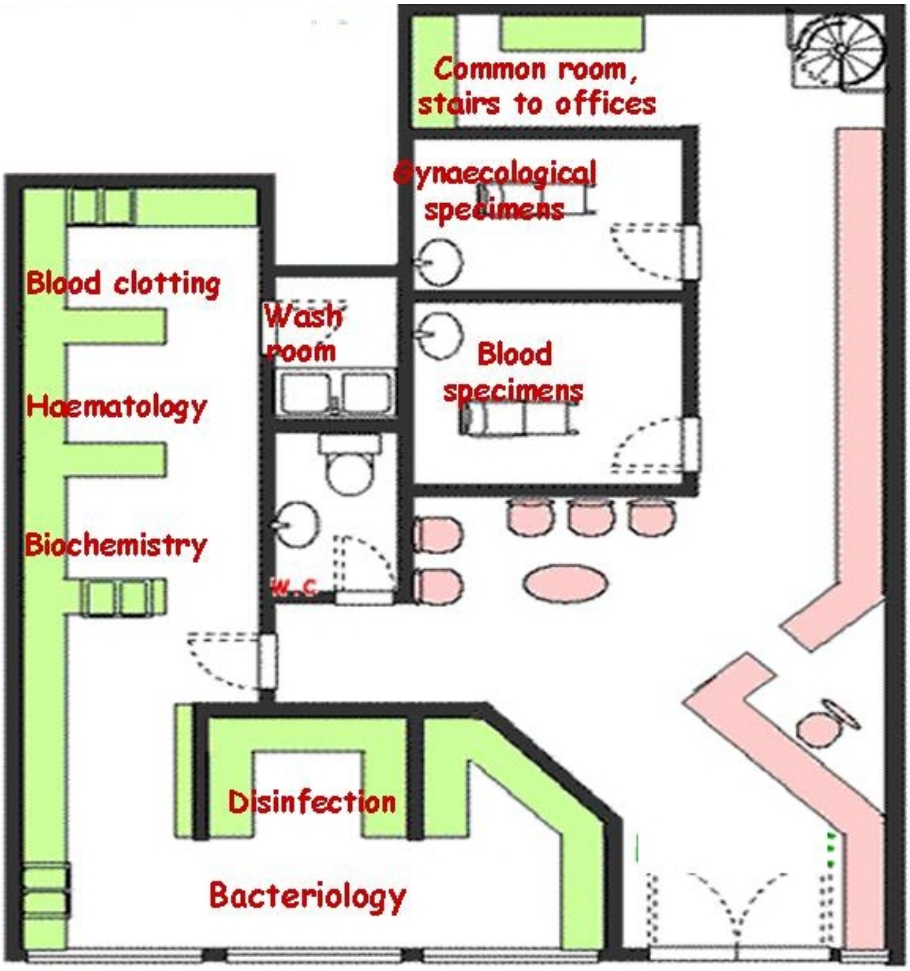
Instructional Method; Brainstorming (entire group).

Instructions; Give the participants a copy of the laboratory plan.

Ask the questions:

Do you have any comments about this laboratory plan?

How are the pathways organized for patients, biological samples, clean and dirty glassware, contaminated waste, and other areas?



Expected Results

In this plan, participants have access to the reception and the sampling rooms, but not to the laboratory where the examinations take place. Stress the fact that if possible, samples and patients should have separate paths.

Inside the laboratory, samples should have separate paths, or paths organized in a way to minimize risks of cross-contamination between samples and/or working places. For this reason the bacteriology section is separated from the other types of analysis to avoid contamination with waste.

However one can identify one problem in this plan, all samples and materials will go through the bacteriology section prior to go to disinfection.

Ask participants the following question. Can you see similar problems in your own laboratories?

Refer to Presentation 2, Slides 9, 13, 14, 15, 18, and 19.

ASSESSMENT REVIEW

1. **Why is infrastructure arrangement key in assuring laboratory safety**
2. **Who is responsible for safety in the laboratory**
3. **What measures should be in place to ascertain safety**

Show the participants this picture or view it using Presentation 2, Slide 36.

Ask the participants to point out the errors and which PPE should be used.

Answers should include:

manipulation without gloves;

uncapped needle on the bench;

uncapped syringe on the bench;

Needle in the flask upper right corner of picture, ready for reuse.

Are PPE available in the participant's laboratories?

Are PPE used as a general procedure, or only for specific manipulations?

Are PPE reused in the participant's laboratories?

REFERENCES

- CLSI – Standards, guidelines, and best practices for quality in medical testing
- WHO – Laboratory Quality Management System - Handbook

- ISO 15189 – Medical laboratories – Requirements for quality and competence