



Medical Laboratory

NTQF Level III

Learning Guide #47

Unit of competence: performing parasitological tests

Module Title: performing parasitological tests

LG Code: HLT MLT3 07M07 LO2-LG47

TTLM Code: HLT MLT3 TTLM 0919v1

LO5: Maintain a safe environment



Instruction Sheet 5

Learning Guide #5

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics –

5. Maintaining safe work environment

- 5.1. Safe work practice in parasitology
 - 5.1.1. Using of PPE
 - 5.1.2. Ensuring safety of self and others
- 5.2. Cleaning of splashes
- 5.3. Waste minimization
- 5.4. Laboratory waste disposal

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to –

- Ensure personal safety and that of other laboratory personnel by using safe work practices and PPE.
- Clean up spills using appropriate techniques to protect personnel, work area and environment from contamination
- Minimize generation of wastes
- Ensure safe disposal of biohazardous materials and other laboratory wastes are in accordance with enterprise procedures



Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described in number 3 to 17.
3. Read the information written in the “Information Sheets 1”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-check 1” in page 7.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-check 1).
6. If you earned a satisfactory evaluation proceed to “Information Sheet 8”. However, if your rating is unsatisfactory, see your trainer for further instructions..
7. Submit your accomplished Self-check. This will form part of your training portfolio.
8. Read the information written in the “Information Sheet 2”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
9. Accomplish the “Self-check 2” in page 8.
10. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-check 2).
11. Read the information written in the “Information Sheets 3. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
12. Accomplish the “Self-check 3” in page 10.
13. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-check 3).
14. Read the information written in the “Information Sheets 4. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
15. Accomplish the “Self-check 4” in page 12.
16. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-check 4).



17. Request your trainer to evaluate your performance and outputs. Your trainer will give you feedback and the evaluation will be either satisfactory or unsatisfactory. If unsatisfactory, your trainer shall advise you on additional work. But if satisfactory you can proceed to Learning Guide # 48.

Information Sheet-1	Safe work practice in parasitology
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5.1. Safe work practice in parasitology

Introduction

In parasitology laboratory the laboratory personnel should consider all the following conditions

- Consider all stool samples as highly infectious.
- Avoid contact with bare fingers, wear gloves if possible or handle with care.
- Do not reuse stool containers, burn stool sample containers and wooden applicators.
- Soak glass slides in 5 % Phenol solution (e.g. Lysol) at least overnight.
- Cover slips break easily and may cause injuries, therefore soak in a separate container in 5 % Phenol solution (e.g. Lysol) at least overnight.

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- Chemical waste disposal
- Pour old and used chemicals into the sink and flush with water if the sink is connected to a soak pit.
- Otherwise, pour chemicals directly into the soak pit. Ensure that the soak pit is not near a natural water source.
- Formalin is irritating to the skin and the vapor should not be inhaled.

5.1.1. Using of PPE

Recommended activities to improve Infection in the parasitology laboratory are:

- Using appropriate hand hygiene techniques.
- Wearing Personal Protective Equipment (PPE): some of the personal protective equipment that should be used in parasitology lab are:
 - Gown
 - Gloves
 - Eye google
 - Apron specially if you wash slides for reusing purpose
 - Waste disposal container and etc.....

Table 5.1. types of PPE

Type of PPE	Must be used for	Primarily protects
Caps, Gowns/scrub suits, masks, aprons, drapes	Invasive procedure where tissue beneath the skin is exposed	Service provider and client
Closed boots or shoes (open sandals are not acceptable)	Situation involving sharp instruments or contact with blood and/or body fluids is likely	Service provider
Goggles or glasses, Masks, Apron or Mackintosh	Situation were splashing or blood, body fluids, secretions or excretions is likely	Service provider
Apron or Mackintosh	Situation were splashing or spillage of blood, body fluids, secretions or excretions is likely	Service provider
Masks	Situation which call for air borne or droplet transmission precaution	Service providers



5.1.2. Ensuring safety of self and others

Laboratory facilities are ideal settings for the transmission of infections because;

- procedures during sample receiving and processing are the potential to introduce microorganism as the service providers and support staff are constantly performing these procedures or other activities
- And Clients receiving services and their parents could be infected.
- The community: Members of the community are also at risk of infections, particularly from inappropriate disposal of medical waste.

So, laboratory personnel have responsibility to follow standard precautions during specimen receiving, processing and waste disposal.

Self-check 1	Written test
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Write True if the statement is correct and False if it is incorrect

1. Laboratory personnel have no any responsibility during specimen reception. (2 points)
2. Laboratory personnel should use appropriate PPE during laboratory working hours. (2 points)
3. The community could be easily infected by improper waste disposal(2 points)

Note: satisfactory rating is 4 points, unsatisfactory <4 points. You can ask your instructor for copy of correct answer.

Answer Sheet

1. _____
2. _____

Score = _____
Rating: _____



3. _____

Name: _____

Date: _____

Information sheet 2	Cleaning splashes
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5.2. Cleaning of splashes

A splash is a tiny amount of a liquid that is formed during specimen processing in laboratory. It could be a potential source of infection whenever it get in to our body .Splashes could contaminate working area the table, floor or the other equipment during preparation of stool smear, blood film and urine or other body fluids for parasitological examination. So laboratory personnel should properly use eye protections such as eye glasses and goggles always during these procedures. In some cases there must be eye wash stations.

The splashes must be cleaned properly by decontaminating the area with 1% hypochlorite.



Self-check 1

Written test

Answer the following questions

1. What is a chemical that could be used to clean and disinfect laboratory splashes?

Note: satisfactory rating is 4 points, unsatisfactory <4 points. You can ask your instructor for copy of correct answer.

Answer Sheet

1. _____

Score = _____

Rating: _____

Name: _____

Date: _____

Information sheet 3

Waste minimization

5.3. Waste minimization

The total volume of medical waste generated can vary depending on the volume of the tests generated. Waste minimization is a set of processes and practices intended to reduce the amount of waste produced. By reducing or eliminating the generation of harmful and persistent wastes, waste minimization supports efforts to promote a more sustainable society. Waste minimization creates benefits. Smaller quantities of waste mean less compromise of the environment at disposal sites. Waste minimization leads to safer laboratory conditions and lessens employee exposure to hazardous chemicals. Waste minimization also promotes safer waste handling and transporting. It also reduces disposal costs which benefits the whole community.

Waste minimization activities include:



- Treatment to reduce hazards.
- Substitutions of less hazardous materials.
- Procedural changes to minimize generation.
- Improved laboratory management practices.

Self-check 3

Written test

Answer the following questions

1. List waste minimization activities. (4 points)

Note: satisfactory rating is 4 points, unsatisfactory <4 points. You can ask your instructor for copy of correct answer.

Score = _____

Rating: _____

Answer Sheet

1. _____



Name: _____

Date: _____

Information sheet 4	Laboratory Waste disposal
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5.4. Laboratory waste disposal

Disposal is a process of eliminating health care wastes without posing any risk to health facility workers and the general public.

The following Infectious wastes may be produced in parasitology laboratory.

- Blood, blood products & other body fluids or items contaminated with similar fluids & other contaminated material infected with human pathogens are classified as high risk wastes and laboratory personnel should dispose them properly.

Infectious wastes can be disposed as follows:

- On-site burial



- On site incineration provided that the incinerator is standard and capable of destroying such wastes
- Transport of offsite treatment/disposal site, if there is the service



Fig. 5.4. Yellow waste bean for infectious

waste

Self-check 4

Written test

Answer the following questions.

1. List infectious wastes produced in parasitology lab. (3 points)
2. List three ways of waste disposal.(3 points)

Note: satisfactory rating is 3 points, unsatisfactory <3 points. You can ask your instructor for copy of correct answer.

Score = _____

Rating: _____

Answer Sheet



1. _____

2. _____

Name: _____

Date: _____

List of Reference Materials

- Cheesbrough M, 1998. District Laboratory Practice In tropical countries.
- Jeffrey H.C and Leach R.M. 1975. Atlas of Medical Helminthology and Protozoology
- Parasitology Handbook, 1998. London School of Hygiene and Tropical Medicine.
- Smith JW, et al. Diagnostic Medical Parasitology. Chicago: American Society of Clinical Pathology, 1976.
- Strickland GT. Hunter's tropical medicine. 7th ed. Philadelphia: WB Saunders, 1991.
- Sullivan J.T, 1997. A color Atlas of Parasitology. Taticheeff , Seyoum, Yahya A,



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