Ministry of Health and Sports
Department of Medical Services

Medical Laboratory Waste Management Instruction

National Health Laboratory
June, 2016

Introduction

Laboratory waste are harmful to hospitals, clinics and environment. Medical laboratory waste management committee must be organized and this committee lead proper laboratory waste management and disposal.

Objective

To reduce laboratory associated infection

Medical Laboratory Waste Management Committee

Chairman - Microbiologist / Pathologist in charge

Secretary - Laboratory officer / Medical Technologist

Members - Medical technologists / medical laboratory technicians

Task of Committee

- To set up management plan suitable for own medical laboratory.
- Delegate tasks to every staff.
- Segregate Different types of waste.
- To provide guidelines for highly infectious waste handling and preventive vaccination.
- To provide training.
- Cooperate with other departments.
- To estimate and plan for budget with hospital management committee.
- To evaluate and implement according to requirement and barriers.

Medical Laboratory Waste

- Waste generated within health-care services related to medical laboratory procedures. (including those contaminated with biological agents and all sharps, whether contaminated or not)

Categories of medical laboratory waste

1. **Non-hazardous waste**
    - General waste
    - Communal waste
    - Domestic waste
2. **Hazardous waste**
    - Infectious waste
    - Sharp waste
    - Chemical waste
    - Pathological waste

1. Non-hazardous waste

Two types

- Dry- paper, leaves, plastic, can, wood
- Wet- chemicals, washing solutions

Sources - laboratory room, staff room, admin room

2. Hazardous waste

Infectious waste

- Gloves, blood and blood products, used alcohol pads

Sources - laboratory, sample collection room

Sharp waste

- Needles and syringes, vacutainer, blades, contaminated broken glass, blood collection tubes / bottles

Sources - laboratory, sample collection room

Chemical waste

- Solvents, reagents, corrosive or explosive chemicals and acids

Sources - laboratory room

Pathological waste

- Tissues, organs, body parts, cytology fluids

Sources - Histopathology section, Cytopathology section

FIVE ELEMENTS OF MEDICAL LABORATORY WASTE MANAGEMENT

(1) Separation

(2) Identification

(3) Handling: - Collection

- Measurement
- Storage
- Transport

(4) Treatment

(5) Disposal

Separation

- Laboratory waste shall not be mixed with other wastes.
- They must be separated at the point of waste generation.

Identification

- **WHO color coding**
  - Yellow - infectious wastes and sharps
  - Red - highly infectious waste
  - Black or Blue - non-hazardous (communal waste)
  - Green - anatomical waste

Handling

Handling includes collection, measurement, storage and transport.

Collection of Waste

- Start immediately after laboratory procedure.

Measurement

- Daily output of waste should be measured to estimate future waste load.

Storage and Transport

Transport of waste from sources to interim storage.

Should be completely closed system.

- Interim storage area
  - ❖ Storing waste within the facility for final treatment of disposal.
  - ❖ Should not be stored beyond 48 hours.

Treatment

There are four principal medical laboratory waste treatment technologies.

1. Incineration
2. Autoclave
3. Boiling
4. Chemical disinfection
   a. 5% Lysol solution (lycresol)
   b. Hypochlorite solution (0.5%, 1%, 10%).

Disposal

Final disposal is done by following methods

1. Incineration
2. Digging – must be 3 meter deep and 50 meter away from water source
3. City Development Committee

Summary of Guidelines for Medical Laboratory Waste

I. Sharps (needles, syringes, scalpel blades, etc.)

1. Place intact "sharps," whether contaminated or not, in a puncture resistant "sharps" container. The containers can be purchased from the Chemistry Stores or laboratory safety equipment vendors.
2. Do not recap needles.
3. Fill 3/4 full, snap the lid closed and secure with tape. Overfilling or forced filling may result in puncture wounds. Do Not Overfill.

II. Non-Sharp Solid Waste for Autoclave

1. Collect non-sharp solid biological waste in autoclavable bags. It is preferable that autoclave bags be white or clear and without the word "biohazardous" or the universal symbol for biohazardous material.
2. Place filled bags into the autoclave pan for transport from the laboratory to the autoclave.
3. Add 250 mL of water to the bag and close loosely to allow the steam to escape and air to enter.
4. Autoclave the pan and bag at 121°C, 15 lb/cm^3 for 15 minutes.
5. Allow the pan and autoclaved material to cool.
6. Put autoclaved bags into trash cans lined with heavyweight, opaque plastic bags, and then transport them to the building dumpster.

III. Non-Sharp Solid Waste for Incineration

1 Twist the plastic bag(s) at the top; bend the twisted portion to form a loop and seal with tape. Seal bags individually when double bagging.

2 Place the waste material in a plastic liner inside a biohazardous waste box ("burn box"). Double bag wet material with absorbent material in the inner bag.

3 Secure the waste box with tape.

IV. Contaminated Glass and Pasteur Pipettes

Contaminated glass may be treated by one of the following two methods

1. Decontaminate the glass by autoclaving, or by soaking in 10% bleach for 30 minutes, then place in sturdy cardboard box, tape closed, and put the box in the building dumpster; or,
2. Contaminated glass may be discarded into a sharps container and handled according to the instructions for "Sharps."

V. Liquid Wastes

1. As a general rule, add household bleach to a final concentration of 10%, wait 30 minutes, then rinse down the sink with copious amounts of water.
2. Alternatively, a disinfectant that is known to be effective against the organism may be added to an appropriate concentration, wait 30 minutes, then rinse down the sink with copious amounts of water.

Remark

"Medical Laboratory Waste Management Instruction" will be updated and distributed occasionally by National Health Laboratory, Yangon.

Please contact us on any inconveniences and suggestions:

National Health Laboratory, Yangon

Phone - 01-371957

Fax - 01-371925

Email - nationalhealthlaboratory@gmail.com

Dr. Ohn Mar Lwin

Biosafety Officer, National Health Laboratory, Yangon

Phone - 09 5013592

Email - ohnmarlwin501@gmail.com