

Technical assistance on sustainable Medical Waste Management Activity No: N-E-PS-1

Consultation and Training Workshop
16 – 18 May 2023

Effective procedures standard operations



Conditions to be met at the storage area:



**Water and
Environment Support**
in the ENI Southern Neighbourhood region

- 1- The size of the area shall be in agreement with the volume of waste produced in the facility.
2. The storage area is separate and far from the supply room or food preparation areas.
3. Be easy to access by health-care cleaners in the facility.
4. Its floor is solid, easy to clean and sterilize, with proper water sources and sewage facility.
5. It is a closed area and unauthorized persons are not allowed to enter.
- 6.



Primary storage area:



**Water and
Environment Support**
in the ENI Southern Neighbourhood region

7. Animals such as dogs, cats, birds, and insects such as mosquitoes, etc. cannot reach them.

Other
conditions?

8. It should have good lighting and ventilation, and it should be provided with an air conditioning device suitable for the temperature (15-18 °C).

9. It should be close to the room that contains the materials and means of cleaning (the housekeeping room).

10. If it is known to everyone as a staged collection point for hazardous and infectious wastes, it is indicated by the internationally recognized marks.

11. It is prohibited to store any materials other than waste at the temporary storage area.

12. The floor, walls and surfaces must be cleaned and sterilized regularly.





Medical waste collection master rules

- A. The medical waste collection unit is responsible for the medical waste management unit within the health facility.
- B. Waste must be collected daily from the laboratory and medical wards and transported to the temporary collection point.
- C. No type of bags should be transported without the international biohazard signs, which shows the type of waste and the place of its production.
- D. After completing the collection of medical waste, it must be kept at the interim (temporary) storage area, pending its transportation for the purpose of treatment and final disposal.



HCW Transportation planning:



**Water and
Environment Support**
in the ENI Southern Neighbourhood region

HCW transporters must have a written operation plan/procedure, this plan must include the following:

1. A method of handling medical waste separately from other waste which prevents unauthorized persons from having access to or contact with the waste.
2. A method of loading and unloading of medical waste which limits the number of persons handling the waste and minimizes the possibility of exposure of employees and the public to medical waste.
3. A method of decontaminating emptied reusable medical waste containers, transport vehicles or facility equipment which are or are believed to be contaminated with medical waste.
4. The provision and required use of personal protective equipment for persons manually loading or unloading containers of medical waste on or from transport vehicles.
5. A description of the means of decontamination of any person having had bodily contact with medical waste while transporting the waste or while handling or disposing of the waste.
6. A procedural plan for handling any transportation incidents involving containers or vehicles transporting commercial medical waste, including notification of the right authorities.





Off-site Transportation of Health-Care Waste: Responsibilities:

- A. **The waste generator** is responsible for the proper packaging and labelling of the containers that are transported.
- B. **The “contractor”** is responsible for providing all labor, tools, materials, supplies, equipment, supervision and personnel required to transport medical waste. The contractor shall adhere to these requirements in accordance with all terms, conditions, provisions, schedules, and specifications of this SOP, in addition to all local regulations and guidelines



Responsibilities: Cont.



**Water and
Environment Support**
in the ENI Southern Neighbourhood region

Transporting staff should ensure that the following points are met before transporting waste:

1. The staff handling waste must use PPE.
2. The bags must be at a maximum $\frac{3}{4}$ th full.
3. The waste bag is tied up, and may be put in a larger bag of the same color with an appropriate label.
4. The label must at least contain the following information: Date, Area, Floor, and Unit Shift.
5. In case any bags have a cut or tear, ensure that double bagging is done before moving it.





The housekeeping staff is to ensure that:

1. All bags are tied when being transported and there is no spillage or leakage.
2. Weighing done at the central area and weight mentioned on a register maintained for this purpose.
3. When the container/bags are to be transported from the premises where the HCW is generated to the authorized waste treatment facility outside the premises, the container/bag should be labeled accordingly and carry all necessary information.
4. At the time of collection of HCW by the waste removal authority, security supervisor or housekeeping supervisor must be present and ensure that there is no mixing of different types of waste.





Vehicle requirements :

- A. The body of the vehicle should be of a suitable size commensurate with the design of the vehicle.
- B. There should be a bulkhead between the driver's cabin and the vehicle body, which is designed to retain the load if the vehicle is involved in a collision.
- C. There should be a suitable system for securing the load during transport.
- D. Empty plastic bags, suitable protective clothing, cleaning equipment, tools, and disinfectant, together with special kits for dealing with liquid spills, should be carried in a separate compartment in the vehicle.
- E. The internal finish of the vehicle should allow it to be steam-cleaned and internal angles should be rounded to eliminate sharp edges to permit more thorough cleaning and prevent damage to waste containers.
- F. The vehicle should be marked with the name and address of the waste carrier.
- G. An international hazard sign should be displayed on the vehicle and containers, as well as an emergency telephone number



Examples of non-compliance



**Water and
Environment Support**
in the ENI Southern Neighbourhood region

- a. Falsification of application or medical waste manifest/tracking forms;
- b. Delivery of untreated medical waste to a facility not authorized to handle the waste;
- c. Failure to maintain complete and accurate records as required;
- d. Failure to maintain vehicles involved in the transportation of medical waste in safe working order;
- e. Failure to submit an annual report;
- f. Illegal disposal of untreated or treated medical waste.



Staff (Drivers)



**Water and
Environment Support**
in the ENI Southern Neighbourhood region

Logistic staff drivers of vehicles carrying hazardous health-care waste should have appropriate training about risks and handling of hazardous waste. Training on the following issues should be included:

1. Relevant legal regulations.
2. Waste classifications and risks.
3. Safe handling of hazardous waste.
4. Labelling and documentation.
5. Emergency and spillage procedures.

Drivers must abide by the following requirements:

- The driver should be provided with details of the waste being carried.
- Vehicles or containers used for transporting health-care waste should not be used for transporting any other material.
- Vehicles should be kept locked at all times, except when loading and unloading, and kept properly maintained.





Cleaning of container and vehicle

- A. Vehicles and transporting containers used for the transportation of waste should be cleaned and disinfected daily after use.
- B. Mechanical cleaning, combined with soaps and detergents, which act as solubility promoting agents, can be used.
- C. Cleaning and disinfection have to be carried out in a standardized manner, automated means that will guarantee an adequate level of cleanliness.
- D. A standard operating procedure for cleaning should be prepared and explained to cleaning staff.
- E. A schedule for preventive maintenance should be set up for all equipment and vehicles used in the transportation process.





Transport documentation

The **consignment note** should include the following information in case of accidents or official inspection:

- A. Waste classes
- B. Waste sources
- C. Pick-up date
- D. Destination
- E. Driver name
- F. Number of containers or volume and weight
- G. Receipt of load received from responsible person at pick-up areas.





Waste treatment: responsibilities:

Facility management team responsibilities

1. Provide the waste treatment equipment, fuel, and operational budget.
2. Provide vaccinations for the “incinerator” operators.
3. Ensure there is adequately trained manpower.

B. Waste management officer responsibilities:

1. Ensure that healthcare waste is segregated, stored, and transported to the treatment facility before disposal.
2. Secure site and final disposal of ash.
3. Monitor waste emissions and residue.





Waste treatment: responsibilities:

Waste handler responsibilities

1. Remove waste from generation points and transport it to the incinerator site.

Operator responsibilities

1. Operate the incinerator, autoclave, shredder and maintain records of waste treated and disposed.
2. Ensure proper maintenance of sanitation within the area.
3. Report any malfunctions of the incinerator or Autoclave to the maintenance officer.





Autoclave, Possible Risks:

1. Substantial heat and pressure generated by the autoclave.
2. Heat from steam, hot liquids, and other materials (including containers, the autoclave chamber and door).
3. Falling items e.g., heavy containers of waste being put into/removed from autoclave.
4. Failed treatment cycle and inclusion of untreated waste that may cause contamination to workers and environment.
5. Broken glassware that has been placed in bags rather than puncture-proof containers.
6. Possible explosion of the autoclave.





Incinerator Possible risks

1. Burns – The incinerator operator must follow operation guidelines and wear appropriate PPE (Leather Gloves).
2. Spillages – Spillage of health-care waste may occur when loading the waste in the incinerator. Spill kit and training on management on spillages must be provided at incineration area.
3. Explosions – Care must be taken to ensure explosive materials are not incinerated.
4. Smoke and fumes – Incineration produces smoke and fumes; therefore, the Incinerator operator must be provided with adequate and recommended PPEs at all-time i.e., fume masks.





Disposal:

Open dumps:

Health-care waste should not be deposited on or around open dumps. The risk of either people or animals coming into contact with infectious pathogens is obvious, with a further risk of subsequent disease transmission, either directly through wounds, inhalation, or ingestion, or indirectly through the food chain or a pathogenic host species.





Sanitary landfills: requirements:

1. Access to site and working areas possible only for waste delivery and site vehicles.
2. Presence of site personnel capable of effective control of daily operations.
3. Organized deposit of wastes in a small area, allowing them to be spread, compacted, and covered daily.
4. In the absence of sanitary landfills, any site from a controlled dump sites could accept health-care waste and avoid any measurable increase in infection risk.





Sanitary landfills: requirements:

It is further recommended that health-care waste be deposited in one of the following ways:

1. In a hollow excavated in the municipal waste area and immediately covered by a 2-metre layer of the municipal waste. (Scavenging in this part of the site must be prevented).
2. in compliance to religion, human organs are collected from different departments, transported to the graveyard, and buried.





Best Practices for Working Around Infected Waste:

- Limit the number of workers who handle HCW.
- Whenever gloves are removed or changed, wash hands with soap and water for at least 20 seconds.
- Avoid touching the face or other exposed parts of the body while wearing gloves or before washing/sanitizing bare hands.
- Change clothing and shower as soon as possible if work clothing becomes soiled.
- Discard soiled work clothing and PPE with other contaminated waste.
- Wear dedicated, washable footwear while on the job.
- Notify a supervisor immediately if exposed to potentially infectious material or waste on the job.
- Consider vaccination to protect workers from diseases for which a vaccine exists.

