Infectious Medical Waste

GDIPC

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Element : E-8

- **Sub- Element (14)**
- **Activities for auditing:**

✓**(D)** documentation

✓**(SI)** staff interview

✓**(O)** observation

✓**(MR)** Medical record

- **Score** (0-1-2)

Sub- Element (E-8.1)

There is a written policy and procedures infectious waste management that covers (sorting, collection, transport, storage, PPE, etc.) according to the updated national guidelines. (D)

- Infectious waste (also called medical, biomedical, regulated or biohazard waste) is defined as materials generated as a result of the diagnosis or treatment of a patient and that is capable of producing an infectious disease.
- Infectious waste should always be segregated, collected, transported and stored in a safe manner with consideration of the risk, occupational safety rules and should be in accordance with local regulations.
- Staff should be knowledgeable about the risks and safety operating procedures of the waste they are handling.
- The risk of acquiring an infection from medical waste is extremely remote.
- No waste disposal worker or member of the general public has ever acquired an infection from medical waste.
- Medical wastes require careful disposal and containment before collection and consolidation for treatment. Strict adherence to safety measures should be ensured in order to protect the workers who generate medical wastes and who manage the wastes from point of generation to disposal.
- Infectious waste has been specifically defined as any infectious waste to be capable of causing infection, a susceptible host must be exposed to a pathogen in the waste and must have a portal of entry, and the pathogen must be of sufficient virulence and quantity.
- If Medical waste is not properly managed and disposed of, it can result in injury by contaminated sharps and infection with Blood borne pathogens Careful handling, sorting, and appropriate disposal of waste from these settings is important to prevent transmission of infection.

Review:

Policies & Procedures for **management of infectious waste** which should be

1. **Comprehensive** incorporating all aspects of waste management program as follows:

A. Types of infectious waste:

Infectious waste is categorized as:

- Blood and blood products:

Bulk blood, blood-tinged suctioned fluids, excretions, secretions are considered infectious waste.

- Pathology waste:

includes human or animal tissues such as placenta, uteruses, organs, and body parts that are collected at autopsy or during surgery

- Microbiological cultures:

stocks and microbiological waste: items containing blood or other potentially infectious materials, as well as, discarded live and attenuated vaccines.

- Sharps:

used or unused sharps (e.g., hypodermic, intravenous or other needles; auto disposable syringes; syringes with attached needles; infusion sets; scalpels;

B. **Sorting of Infectious Waste:**

Four (4) methods of waste segregation must be followed at the point of generation (i.e., by the end user):

-Black bags: Used to dispose of general hospital waste.

-Yellow bags: Used to dispose of infectious waste. Refer to categories of infectious waste

-Red Bags Use to transport body parts, organs, or fetuses for burial.

-Sharp Containers Used to dispose all used and unused sharps (e.g., Hypodermic, intravenous or other needles, auto-disable syringes, syringes with attached needles, scalpels, glass pipettes, knives, blades, broken glass).

C. Specifications of waste containers:

1.Sharps containers:

-Must be rigid, puncture-proof, leak-proof and closable.

-Equipped with a hermetical seal with an opening aperture which allows insertion of sharp items (e.g., needles and lancets).

-Has a biohazard logo and labeled as “Sharp Items” which must be printed in both Arabic and English. etc.

2.Plastic bags:

-Should be tear-resistant and leak proof

-Must not contain Polyvinyl Chloride (PVC).

-Thickness must not be less than 70 microns thick.

-All designated infectious waste containers should have a biohazard symbol or labeled with the word “Infectious” both in Arabic and English or be color- coded (i.e., yellow bags), rendering them identifiable by hospital staff.

D. Collection of infectious waste:

-Collect waste at least once per day and as needed.

-Wear personal protective equipment (PPE).

-Handle bags at the top so that the bags do not come in contact with your body.

-Do not use hands to compress (squeeze) waste in containers/bags.

-Tie all bags securely when ¾ full and remove to storage containers.

-Avoid overfilling carts with waste bags for transport to general storage room.

-Wash hands after handling waste. etc.

-Label the infectious waste bags or sharp containers with the following information

E. Transportation of infectious waste:

- Internal & external systems used for the transportation of infectious waste must maintain integrity of packaging & protect handlers.
- Use leak-proof carts that are readily cleanable to transport infectious waste from the point of generation or storage to the point of disposal and treatment.
- Decontaminate carts used for transporting waste within the hospital daily using a hospital approved disinfectant solution
- Place yellow bags in a holding area for incineration

F. Storage of infectious waste:

There could be 2 types of storages in the hospital:

1. **Temporary storage area:**

- Storage in the wards located in the dirty utility which are used to hold infectious waste temporarily to be collected and transported to the central storage area every after end of the shift or as needed.

2. **Central storage area:**

-Used to hold infectious waste for not more than 24 hours to be eventually collected and transported off-site for treatment.

-The room must have a concrete floor and be well-sealed to protect it from water leakage, rain, spread of odor, from rodents, insects, birds and stray animals.

-Dispose infectious waste as soon as possible after generation.

-Minimize the storage time to reduce the risk of potential exposure and reduce odor.

-Limit access to storage areas and have a biohazard symbol labeled with the word “storage area” in both Arabic and English; and posted where it is readily visible to anyone.

Sub- Element (E-8.2)

All non-sharp generated medical waste is disposed in black bags as general waste except that heavily soiled with liquid blood or other body fluid (dripping) should be considered infectious medical waste and discarded in yellow bag or based on the national medical waste updated guideline & regulations. (O, SI)

Observe:

In all patient care areas (ER, ICU, HDU etc.):

1. Availability of different sizes of color-coded waste bags.

- Black Bags for disposing all medical waste not heavily soiled

- Yellow Bags for disposing medical waste heavily soiled with liquid blood.

2. If the number of waste receptacles are adequate according to amount of waste g generated in specific unit.

3. Color-coded bags & sharp containers must meet the regulations of Ministry of Health as mentioned below

Specifications of Waste bags & Waste containers:

- Should be tear-resistant and leak proof
- Must not contain Polyvinyl Chloride (PVC).
- Thickness must not be less than 70 microns thick.
- All designated infectious waste containers should have a **biohazard symbol** or labeled with the word “Infectious” both in Arabic and English or be color-coded (i.e., yellow bags), rendering them identifiable by hospital staff.

Interview:

1. Ask staff during audit visit in different patient care areas (ER, ICU, HDU etc.) about the protocols of waste management i.e. waste segregation & disposal.
2. Ask about the last training & education received from infection prevention & control team about the infectious waste management.
3. Interview any staff in any unit e, g ICU, ER etc and ask specific scenario-based questions such as:

You are the assigned nurse for a COVID-19 patient in the morning shift in ICU. Patient is on mechanical ventilation. You have to enter patient's room to provide oral care & suctioning for the patient. After completion of task, in which waste receptacle will you dispose off your PPE which is not soiled & when heavily soiled with body fluid.

Sub- Element (E-8.3)

Disposal of waste from isolation rooms is done properly based on patients' diagnosis as general waste or medical waste according to updated national medical waste regulations (O)

Observe:

Collected medical waste from occupied isolation rooms, waste should be segregated in yellow bags or in black bags as in the latest update of waste segregation in national healthcare guidelines (as in the following table)

Wastes from patients on isolation	
Patient isolated for MDROs	All wastes should be disposed in black bag (general wastes); except dressings from infected or surgical wounds, and the items heavily soiled with blood or other body fluids
Patient isolated for highly infectious diseases (confirmed and suspected) e.g. Ebola, Smallpox, Anthrax , and other diseases decided by the infection control team to be a highly infectious diseases	Manage used disposable PPE and all other patient care items as Hazardous Medical Waste and dispose in the yellow bag.
Patient isolated for suspected pulmonary TB	Manage used disposable PPE and all other patient care items as Hazardous Medical Waste and dispose in the yellow bag.

Wastes from patients on isolation	
Patient isolated for confirmed infective TB: e .g. Open pulmonary TB, Laryngeal TB, extra pulmonary draining infection	Manage used disposable PPE and all other patient care items as Hazardous Medical Waste and dispose in the yellow bag.
Patient isolated for confirmed non-infective TB: e.g. Non- Open pulmonary TB, Peritoneal TB with no drain, TB from non- draining infection	All wastes should be disposed in black bag (general wastes); except dressings from infected or surgical wounds, and the items heavily soiled with blood or other body fluids
Patient isolated for not highly infectious communicable disease e.g. H1N1, MERS CoV , n corona 2019, and other respiratory viruses	All wastes should be disposed in black bag (general wastes); except dressings from infected or surgical wounds, and the items heavily soiled with blood or other body fluids
Measles (Confirmed and suspected)	Manage used disposable PPE and other patient care items for measles patients as Hazardous Medical Waste and dispose in the yellow bag.
All PPEs from patient isolated for infection other than what was mentioned in the above table should be disposed in black bag (general wastes); except those heavily (dripping) soiled with blood or other body fluids.	

Sub- Element (E-8.4)

In general wards, all clinical procedures are performed using procedural trolley equipped with biohazard waste bag and sharp container. (O, SI)

Observe:

- **<u>During visit of general wards (Medical wards, surgical wards, Maternity wards etc.:</u>**
- If they are using procedural trolley for performing all bed side clinical procedures like wound dressing, changing IV cannulas, etc.
- Observe the availability of sharp container and biohazard waste bag of appropriates size hanging with the procedural trolley.
- *Location of sharp container & waste bag should be at level that should not contaminate the clean / sterile supply.*
- *Position of waste bag and sharp container must be at different levels*.

Interview:

- Staff in general wards regarding their practice in terms of waste disposal.
- Ask If they are using procedural trolley equipped with sharp container and biohazard waste bag for discarding waste and sharps.

Scenario:

During audit visit of surgical ward, ask any staff to simulate dressing change for a post op patient and observe the procedural trolley being used and staff awareness.

Sub- Element (E-8.5)

Sharp containers are wall mounted or placed on a stand and available inside the patient zone. (O, SI)

Observe:

In all Critical care areas (ER, ICU, HDU etc.) & Isolation Rooms:

Location: sharp containers should be wall mounted or placed on stand.

- Observe if height of sharp container is meeting the international standards. (You may observe sharp containers placed directly on floor, mounted very high above the eye level & at locations inaccessible for the healthcare workers.)

- Healthcare workers should be able to view the entire opening of the sharps disposal container while comfortably standing within arm's reach.

NIOSH provides an ergonomically ideal formula by establishing the eye-level height, maximum thumb tip reach of the worker population, and including a drop angle drop 15 degrees (see illustration below).

- Sharps disposal container height should be:

- Standing workstation: 52 to 56 inches above the standing surface of the user

- Seated workstation: 38 to 42 inches above the floor on which the chair rests these height installation suggestions will “comfortably accommodate 95% of all adult female workers,” according to NIOSH.

Sub- Element (E-8.6)

No bent, broken, or recapped needles are observed inside the sharp containers. (O, SI)

Observe:

- **During visit of all patient care areas general wards, Critical care units etc.**

- Open lid of sharp containers at random and check if any broken, bent, recapped or separated needles are present.

- **Sharp containers are used:**

- To dispose all used and unused sharps (e.g., Hypodermic, intravenous or other needles, auto-disable syringes, syringes with attached needles, scalpels, glass pipettes, knives, blades, broken glass).

- Blades or needles should not be disassembled from the equipment.

- Recapping, bending needles etc. pose healthcare workers to significant risk of acquiring Needle stick Injuries from accidental exposure to sharps.

Interview:

- The staff about safe handling of sharps.
- Ask her / him to simulate how to discard the used syringe after use.
- The staff about the safe zone movement of handling sharps
- Ask if she find any sharp item on floor **(e.g., broken glass, guide wire etc.) how she will safely discard. ****

****Must be picked up and discard broken glass or any sharp using a mechanical device such as forceps or a brush and dust pan.**

- Broken glass should never be handled with gloved or non-gloved hands

Sub- Element (E-8.7)

No infectious medical waste or sharps are observed outside specified containers. (O)

Observe:

During hospital visit of all patient care areas like general wards, Critical care units, dental, lab, etc.

- Observe if the healthcare workers are discarding the waste in specified containers or not.
- Randomly open the containers to observe if discarded waste is appropriate for that receptacle.
- Observe if HCWs are compliant with waste segregation Protocols.

- **Black**: To dispose general waste
- **Yellow**: To dispose infectious waste, heavily soaked items with blood or body fluid
- **Red**: To dispose body parts and organs
- **Sharp Containers**: To dispose all kinds of sharps (needles, broken/ glass, syringes with attached needles, blades; etc.)

Sub- Element (E-8.8)

Medical waste bags are collected after being securely closed when filled to 3/4 of its maximum capacity and labelled with the date and place of production. (O,SI)

Observe:

- Medical waste bags in the temporary holding areas in & Infectious waste room which shouldn’t be overfilled.
- If waste bags are well secured & tied with a **self-lock plastic tie** before placing them in a temporary holding area such as a dirty utility room.
- Observe the label of infectious waste bags with the following information:

A. Generating department

B. Date collected

C. Time etc.

Interview:

- Housekeeping / waste collection staff about the Procedure / mechanism of waste collection.
- Ask at which level / capacity/level are they going to remove waste bag from the specified receptacles/containers. **(Should be collected when filled to 3/4 of its maximum capacity.**
- Ask if they have tags / stickers for labeling the waste bags & what is the necessary information that needs to be recorded **(Date / Department /unit etc.)**
- Ask what they are using to tie the waste bags at the time of collection.

Sub- Element (E-8.9)

Sharp boxes are collected after being securely closed when filled to 3/4 of its maximum capacity and labelled with the date and place of production. (O,SI)

Observe:

- Sharp containers in the temporary holding areas / Infectious waste room & assess the levels.

- If sharp containers are being replaced promptly when container is ¾ filled (and reaches the fill line)

- Observe the label on the sharp container with the following information:

A. Generating department

B. Date collected

C. Time etc.

Interview:

1. Nursing staff:

- About their responsibility regarding sharp containers & at which level / capacity / level are they going to close the sharp container.

(Nurses are responsible to close the sharp containers when ¾ full or reaches the fill line and to inform the medical waste staff to replace)

- Ask if they have tags / stickers for labeling the sharp containers & what is the necessary information that needs to be recorded (Date / Department /unit etc.)

2. Waste Collection staff:

- Ask about the Procedure / mechanism of collection of sharp containers.

- Assess if they are aware about their responsibility to collect the sharp containers and to replace it immediately with a new one.

Sub- Element (E-8.10)

Collection & transportation of medical waste are done by medical waste workers wearing proper PPE at fixed time and on demand.

(D,O,SI)

Review:

- Schedule of waste collection within the units and verify the frequency of waste collection.

- (Frequency of waste collection should be clearly specified in the schedule / log sheet that must be at fixed intervals. (Every 2 hours, once per shift etc.)

-Any evidence of collection protocols e.g. contacts numbers to call the medical waste staff when needed (In case of increased demand etc.)

Observe:

- In the temporary holding areas i.e. dirty utility rooms etc. if collection frequency is matching with what is specified in schedule. (You may observe large number of waste bags and sharp containers not collected as per schedule)
- The practice of waste collection staff waste regarding using appropriate PPEs. (PPE must be changed frequently when moving from one station to another station. Staff must perform hand hygiene after removing PPE. This has been
- observed that waste collection staff use on set of PPE throughout the hospital and
- use elevators with same gloved hands contributing / posing to infection risk)

Interview:

- Waste collection staff about frequency of waste collection from different units. (ER, ICU, etc.).
- Where they keep the waste/ for how long it stays.
- Ask about the appropriate PPE and frequency of changeling PPE?
- Ask them at random to simulate PPE donning and doffing and assess their performance.
- Ask if they have received any infection control training?

Sub- Element (E-8.11)

Infectious medical waste is transported in closed and impervious specified carts with biohazard sign. Carts are cleaned after each use or at least daily. (O, SI)

Observe:

- Availability of carts used for transportation of Infectious medical waste and assess if meeting the specifications.

- Closed
- Impervious
- Leak proof & readily cleanable
- Clearly visible Biohazard Signage

- Observe if transportation carts are regularly cleaned and well maintained (Free from dust / Blood stains etc.)

Interview

- Ask waste collection staff about frequency of cleaning the transportation carts.
- Where & how carts are being cleaned?
- Which disinfectant they are using?

Transportation carts used for transporting waste within the hospital must be decontaminated after each use or daily using a hospital approved disinfectant solution

Sub- Element (E-8.12)

The medical waste store is consistent with the approved national specifications (adequate in space, away from traffic, secured, well ventilated with controlled temperature). (D, O, SI)

Review:

- Log for temperature control **(Check for any fluctuations in the log sheet)**
- Cleaning schedule / checklist

Observe:

Medical Waste store is fulfilling the following specifications:

- Secured and locked (away from traffic)
- Biohazard signage posted
- Adequate space
- Clean and well maintained. Walls and floors are smooth and of easily cleanable material. No cracks, openings etc.
- Well ventilated with temperature monitor **(displaying temperature <18°C)**
- The room must have a smooth floor (easy cleanable) and door well-sealed to protect it from water leakage, rain, and spread of odor, rodents, insects, birds and stray animals.
- Equipped with hygiene washing sink with required supplies like soap paper tissues etc. sewage hole must be well sealed. etc.

Interview:

- Responsible staff about engineering controls of waste room. What would be the actions taken in case of fluctuations / failure etc.??
- Frequency of cleaning and disinfection of the room & type of disinfectants used.

Sub- Element (E-8.13)

Infectious medical waste is transported outside the hospital every 24 hours for final disposal. (D, O, SI)

Review:

- Daily collection log sheet / or any document provided by company for transportation & waste disposal outside the hospital with date and time.

- Infectious medical waste is transported outside the hospital every 24 hours

Observe:

- Check the label on medical waste bags & sharp containers to confirm if exceeded 24 Hours collection time or as per standard.
- Observe the number of available waste bags and assess if its matching with policy of daily collection. ***(Huge number would reflect lack of compliance)***

Interview:

- Responsible staff regarding frequency of waste collection by the designated waste management company.
- Ask on which day & time company is collecting waste for purpose of verification.

Sub- Element (E-8.14)

Medical waste workers are vaccinated against blood borne pathogens and trained on hand hygiene, use of PPE, appropriate steps required post exposure to sharps or blood or bodily fluid, and safe handling of waste. (D, MR, SI)

Review:

- Evidence of training conducted for infectious waste workers. (Check for frequency)
- Review the content of training provided.

Training activities include but not limited to:

- Hand hygiene
- PPEs use including N - 95 mask
- Safe handling & other waste management protocols during collection, transportation etc.
- Labeling / coding that designates an item as infectious waste
- Sharp injuries & post exposure protocols etc.
- Cleaning & disinfection procedures etc.

Review:

- Medical records of infectious waste workers & check if they have received vaccination against Hepatitis B. (Review files in unit or copies in Employee health clinic etc.)
- Verify if they have completed the required dosing schedule.

Interview:

- Infectious waste workers regarding vaccination against hepatitis B.
- Ask if they have received any prior training from infection control team.
- Ask them to simulate hand hygiene & PPE donning / doffing.

Scenario:

Ask waste collection staff about post exposure protocols in case of exposed to sharps by giving a scenario:

If you experienced a needle stick or sharps injury during the course of your work, what immediate steps should be followed?

First Aid:

- Wash needle sticks and cuts with soap and water
- Then apply isopropyl alcohol 70%
- Bandage appropriately
- Reporting the injury to immediate his supervisor
- Fill & submit and complete a reporting form (OVR: Occurrence Variance report)
- The report should include:

- Staff Information
- The date and time of the incident
- The location where the incident occurred
- Details of exposure type.