Water and Environment Support

in the ENI Southern Neighbourhood region

Technical assistance on sustainable Medical Waste Management



HCW Monitoring







The goal of monitoring HCWM is to ensure that healthcare waste is safely handled and disposed of without or with minimum health and or environmental risk.



Sources of HCW



Primary Sources:

- 1. Hospitals of all kinds, such as university and central hospitals, and others.
- 2. Private clinics and centers, whether specialized or multidisciplinary.
- 3. Emergency services such as ambulance.
- 4. Dispensaries and primary health centers specialized in vaccinations.
- 5. First aid.
- 6. Pharmacies.
- 7. Blood banks.
- 8. Military medicine services.
- 9. Medical analysis laboratories.
- 10.Medical research institutions and centers.

- Primary Sources:
- 10.Medical research institutions and centers.
- 11.Animal research centers and veterinary colleges and laboratories.
- 12.Elderly Care Center.
- 13.Departments of nuclear medicine.
- 14.Centers for the disabled and people with special needs.
- 15.Small dental clinics.
- 16.Pharmaceutical factories.
- 17.Cupping centers.
- 18.Stores and warehouses of medicines.



Secondary sources



- 1. Separate and used doctors' offices for routine examination of patients.
- 2. Psychiatric clinics.
- 3. Home treatment.
- 4. Beauty centers.
- 5. Offices to provide health services.
- 6. Medical waste disposal companies.
- 7. Any other medical sources

• What Additional sources are there in Palestine?







- 1. Workers and practitioners are not aware of Legal requirements.
- 2. Medical waste management is not separately budgeted by the MOH.
- 3. There is not enough information to HCW producers on safe disposal.
- 4. Documentation and record keeping is not efficiently implemented by all waste producers.
- 5. Collection schedules are irregular;
- 6. Waste reduction / minimization is not implemented.
- 7. Personal protective equipment for HCW handlers is not adequate.
- 8. There is limited investment in training and capacity building.
- 9. There is limited investment in cost effective, environmentally sound transportation and disposal of HCW.







- Specific role of local governments in HCWM,
- Role of private sector in HCWM,
- Best practices, roles and responsibilities for treatment of different HCWM streams (e.g. incineration),
- Ash handling in case of incineration,
- HCW emergency planning,
- Regulation of HCW system,
- Ensuring compliance with HCWM regulatory framework.





- 1. Establish actions that must be performed as a minimum to ensure the safe handling and disposal of healthcare waste (HCW)
- 2. Establish/develop indicators that will demonstrate that the actions/activities have taken or are taking place
- **3.** Develop tools for information collection, analysis and construction of the indicators
- Define institutional arrangement and assignment of duties, roles/responsibilities for those who will be involved in monitoring HCWM activities at all levels





- Performance monitoring: stakeholders implementation effectiveness
- Operational Inspection
- Plan implementation Track progress : progress data against the results indicators
- Monitor and Manage Risks





- Demonstrate that medical waste management is being implemented according to plan and existing regulatory procedures;
- Provide feedback to implementing entities to make modifications to the operational activities where necessary
- Ensure that impacts are addressed appropriately.
- Check the effectiveness of the recommended mitigation measures.
- Ensure that the proposed mitigation measures are appropriate.







Activities	Period	Responsibilities
Monitoring and follow-up of the implementation of the Master Plan	Monthly	Monitoring and inspection section EQA
Monitoring of the Capacity building activities: - Training - Awareness-raising	Quarterly	МОН
Percentage of facilities performing HCW segregation.	Monthly	МОН
HCW generation per bed (kg/bed/month);	Monthly	МОН
No. of occupational Health injuries	Monthly	MOH/MOLG
No. of facilities with approved treatment units	Quarterly	МОН
Final disposal arrangements adherence with applicable laws	Quarterly	EQA

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HCW data requirements:



Required data

- Data generation
- Data verification
- Data storage
- Data use







- 1- waste quantities and types of waste
- 2- Segregation and packaging data: type of packaging, containers, color coding, ...
- 3- storage data
- 4- transportation
- 5- infrastructure
- 6- training and awareness
- 7- regulatory compliance
- 8- environmental /health impacts
- 9-cost and resources utilization





Monitoring and Benchmarking

Monitoring & Benchmarking of healthcare waste is very important as it can be used as a point of reference from which an evaluation can be made.

Benchmarking can be used to identify where they stand and what can be achieved.

Benchmark create a competitive environment promoting improvement and growth.

Benchmarking involves looking at standards, best practices and evidence-based practices and then identifying potential areas of improvement. It is very important to monitor, measure & review trends in HCW statistics by utilizing efficient data management systems that can compare year to year performance, performance with other hospitals & identify improvement options



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- 1) Percentage of facilities performing HCW segregation;
- 2) HCW generation per bed (kg/bed/month);
- 3) % of infectious waste;
- 4) No. of occupational Health injuries per month;
- No. of facilities with adequate sharp boxes; 5)
- No. of trained staff for HCWM; 6)
- 7) Health care waste management staff vaccinated;
- 8) No. of facilities with approved HCWM budgets;
- 9) No. of facilities with approved treatment units.





- 1- % HCW is properly segregated into identified categories?
- 2- % containerization/packaging used correctly for each category of waste?
- 3- No. of monthly spillages reported.
- 4- % waste routinely collected?
- 5- on-site collection equipment available to transport health care risk waste only?
- 6- Is the storage area secured?
- 7- Is the storage area routinely cleared?
- 8- Is segregation of waste maintained in storage area?
- 9- Is the incinerator is fully complaint and operating optimally?



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Possible Key performance Indicator:



10- Number of needle stick incidents recorded in the past month as a result of poor waste management?

- 11- Use of appropriate personal protective equipment (PPE)
- 12- Is waste routinely weighed and volumes recorded in waste log?
- 13- total monthly weight of sharps waste generated (kg)?
- 14- total monthly weight of infectious waste generated (kg)?
- 15- total monthly weight of general waste generated (kg)?
- 16- total monthly weight of other waste generated (kg)?

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- 17- How much waste is disposed of, on average, per week?
- 18- Is the supply of sharps containers sufficient in number?

19- Is the supply of reusable waste containers/bins sufficient in number? Is the supply of color-coded liners are sufficient in number?

Are receive stacks available in the store for the above mentioned materials?





- Responsible for environmentally safe handling of HCW in coverage areas. Monitoring of compliance in the following areas;
- (a) Operational Compliance
- (b) Adequacy of Infrastructure
- (c) Reporting of data
- (d) Inspections and Monitoring







Operational compliance by EQA is related to safe collection, handling, transportation, reception, treatment, and disposal, that include compliance to following activities/aspects;

(a) Collection

- (b) Use of Personal Protective Equipment (PPEs)
- (c) Transportation of HCW
- (d) Tracking of HCW
- (e) Handling at designated areas
- (f) Compliance to norms



Adequacy of Infrastructure



- Adequate infrastructure at handling areas is essential for achieving compliance to standards and guidelines.
- Subsequent to notification of bylaw and other legal provisions, waste generators and producers are required to upgrade their facilities so as to comply with revised standards.
- The following infrastructure is essential for auditing performance of waste generators or handlers:
- (a) Vehicles
- (b) Area of operations
- (c) Upgradation of Combustion Chamber
- (d) Upgraded shredders, autoclaves, microwaves or other
- treatment tools

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COMPLIANCE FORMAT:



Compliance areas	Activities	Yes	No
HCW Collection	Waste generated is collected and		
	disposed within 48 hours		
	Separate compartments for color coded		
	wastes		
USE of PPE	Waste collectors are required to wear		
	adequate PPEs –including three-layer		
	masks, splash proof aprons/gowns,		
	gloves, gum boots and safety goggles.		
	Does workers wearing adequate PPEs?		
Transportation	Weather dedicated Vehicle used for		
	collection of COVID19 waste?		
	Registration of vehicles with MOT		
	Use of separate dedicated vehicle for		
	COVID19 waste		
Tracking of HCW	Separate spaces provided for reception		
	of color coded wastes		
	Space adequate for reception of waste		
N	Space adequate for storage of treated		
	waste		





Compliance formate:



Compliance to Standards	Compliance to emission Standards	
	Compliance to emission Standards - as per	
	NABL/ EPA accredited laboratory	
	Compliance to emission Standards - sample	
	collected by SPCB or its agency	
	Compliance to Temperature standards	
	Compliance to disinfection standards	
	(Autoclave / Microwave)	
INFRASTRUCTURE		
Vehicles	Whether the unit has adequate fleet to lift	
	HCW daily from bedded HCFs	
	Dedicated Vehicle provided for COVID19 waste	
Waste Reception	Separate spaces provided for receipt of on	
	untreated color coded HCW	
	Containers used to receive HCW prior to	

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Compliance formate:

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Facilities for treated Waste Handling	Covered sheds provided for: (i) all treatment/disposal equipment, (ii) handling treated/un-treated wastes, (iii) Ash storage, etc.	
General Information	Total number of healthcare facilities and beds covered (as on date of visit)	
	Total HCW Treatment Capacity of HCF (in kg / day)	
	Average quantity of biomedical waste Collected As per records (if required, one moth data may be checked)	
	Average quantity of biomedical waste treated As per records (if required, one moth data may be checked)	e
	Frequency of incinerator / autoclave /	o





HCWM is important in any health sector and institution to be able to:

- To minimize the effect of waste on public health, such as disease transmission (e.g., HIV/AIDS, hepatitis B and hepatitis C) and injuries caused by sharps.
- To prevent risks and hazards to staffs handling wastes.
- To reduce the environmental impact caused by pollution resulting from improper disposal of waste
- To facilitate resource recovery of useful and reusable products.
- To improve on aesthetics and ensure clean environment within HCF
- To prevent and control breeding of insects, rodents, and other pests.







- Planning for HCWM at the facility level should take into consideration the World Health Organization (WHO) core principles for achieving safe and sustainable management of healthcare waste.
- The right investment of resources will result in a substantive reduction of disease and corresponding savings in health expenditures
- The effective management of health care waste depends on:
 - good administration and organization
 - adequate legislation and financing
 - active participation by trained and informed staff
 - Monitoring and continuous improvement







- HCWM plans are roadmaps towards creating and sustaining good HCWM systems in healthcare facilities.
- Participatory planning promotes stakeholder ownership.
- Funding and human resources allocated to HCWM are essential for sustainability.
- Commitment by the administration, fostering environmental champions among staff, and capacity building can bring success.
- Planning is an adaptive process with periodic review and updating





- Review regulatory requirements and existing targets, and standards
- Become knowledgeable about applicable national and local laws and regulations, accreditation requirements, and standards on waste management, worker safety, environmental pollution, etc.
- Be aware of any applicable international laws and guidelines
- Be familiar with WHO policies and recommendations on HCWM and related issues such as infection control
- Be familiar with international treaties signed by the state of Palestine
- Be aware of stakeholders responsibilities.



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A baseline provides information on the initial condition of the facility to:

- determine what best practices and techniques should be introduced
- develop and monitor performance indicators
- be used as the initial reference point
- be used as a starting point for future assessments
- be used as a basis for future evaluations
- collect written and photographic documentation
- decide what technologies should be used
- decide what waste storage and treatment capacity is needed



For more information:











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Thank you for your attention!