

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





After completing this session, participants should be able to:

- List at least five best practices for protecting worker safety and health while handling infected materials and regulated medical waste.
- List at least three engineering controls used to avoid hazards while handling waste.
- List at least three administrative controls used to avoid hazards while handling waste.





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Session 8: Effective Standards Operating Procedures: Mohammad Said Al Hmaid



Definition: Environmental law



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النفايات الطبية الناجمة عن مخلفات الأنشطة والعمليات الطبية
المختلفة أو رمادها المحتفظة بخواص المواد الخطرة والتي ليس لها
استخدامات تالية داخل المؤسسة أو خارجها سواء جكانت صلبة أو
سائلة أو غازية



HCW definition



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What is healthcare waste?

Total waste stream from major healthcare establishments and from minor scattered healthcare activities. (WHO)





Types of waste:

Healthcare waste can be:

- Non-hazardous general wastes

comparable to domestic waste (75-90% of healthcare waste in a health facility)

- Potentially hazardous waste or waste that is associated with some health risks (10-25% of healthcare waste in a health facility)

- **classifications**

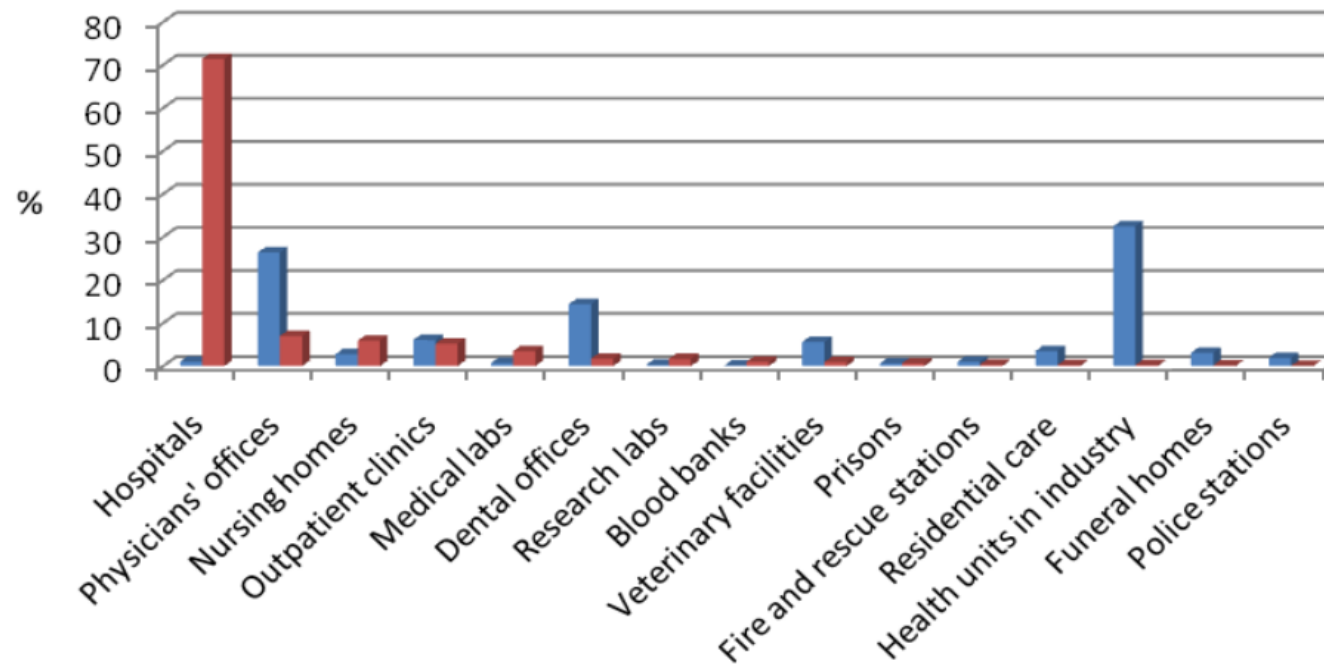


Which Institutions Generate the Most Amount of Healthcare Waste?



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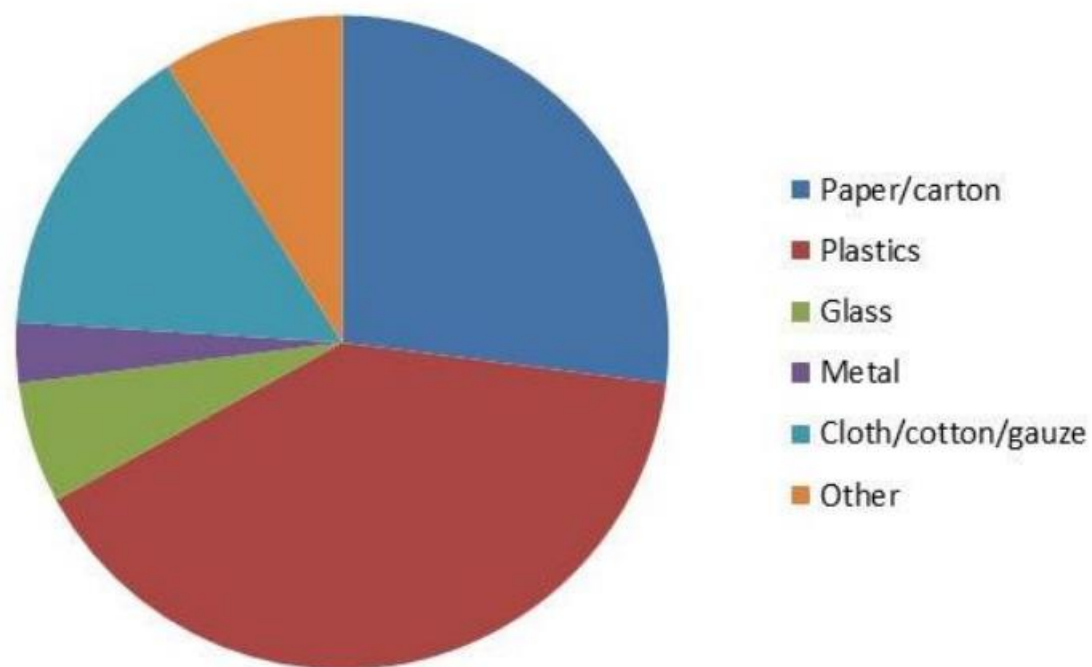
■ % of the total number of facilities ■ % of the total annual healthcare waste generated



Typical breakdown of material constituents in healthcare waste (excluding food)

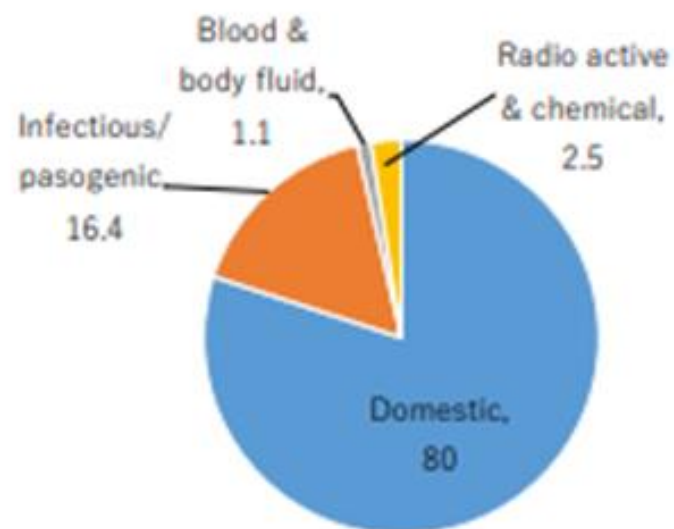


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Medical Waste Composition



Averaged composition of medical waste in Gaza Strip (UNEP, 2009)

Source: UNEP (2009)



Generation Rates:



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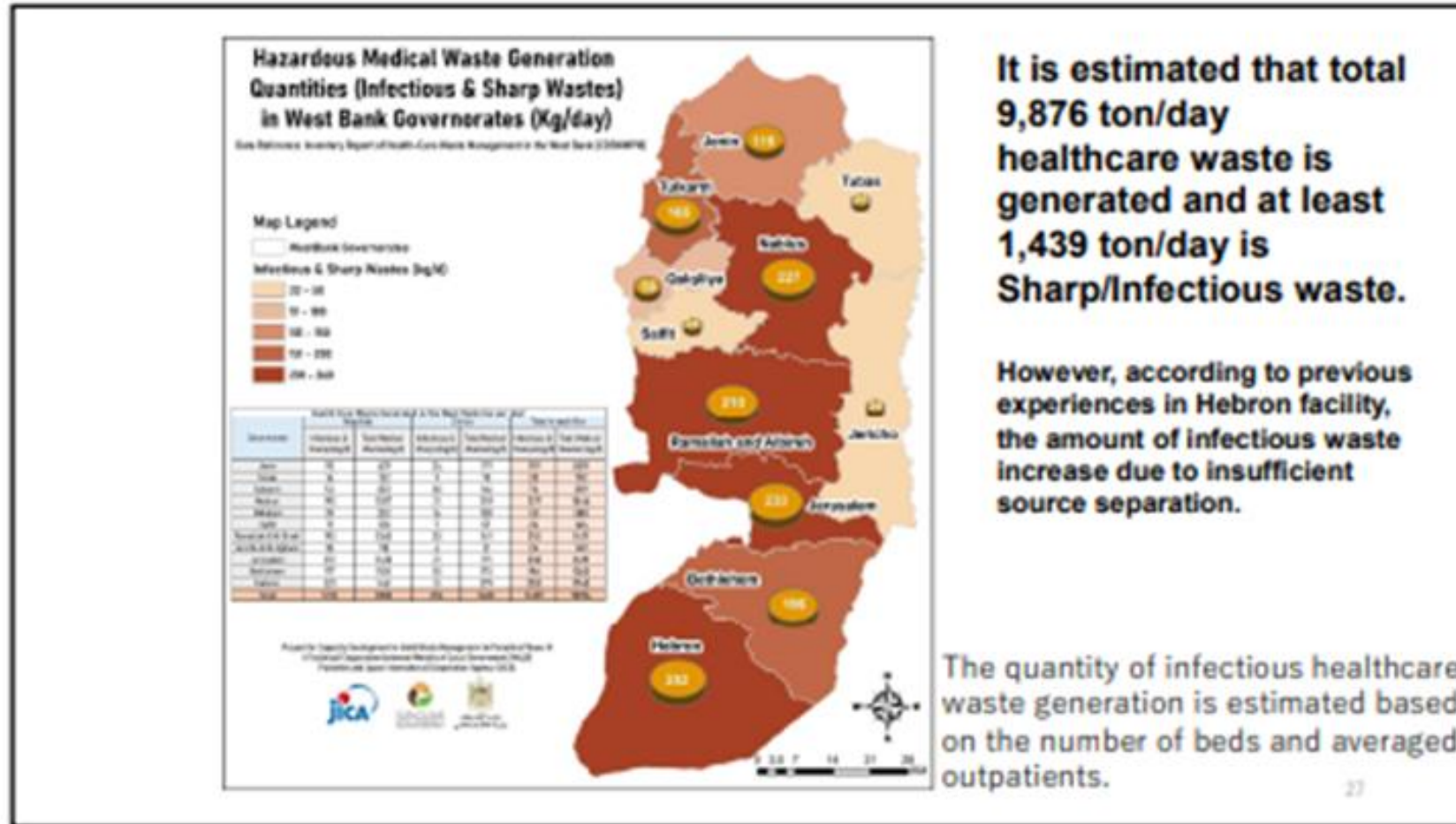
INSTITUTION	HCW
MOH	1.29 kg/b/d
Ramallah Municipality	2.18 kg/b/d
JSC/Hebron	0.57 kg/b/d
Dora Hospital	
Ramallah Hospital	1.29kg/b/day
Khatib/ Jenin	0.78 kg/b/d
PCBS	2.33 kg/b/d general 0.77kg/b/d
GIZ 2014	1.3 kg/b/d
Italian Cooperation	
Arab Care Hospital	1.6kg/bed/day
Istishari Hospital	1.05kg/bed/day



Generations: West Bank and Gaza



Water and Environment Support



Current central handling/treatment facilities



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Distribution Map for Infectious Waste Treatment Facilities in Palestine

In 2021, two centralized systems have been established in Gaza Strip. In 2022, three centralized systems have been established in West Bank. Then, if we can establish two other treatment facilities in West Bank, we can completely cover all infectious waste generated in Palestine.

GNG Treatment Facility
(UNDP2021)

KRM Treatment Facility
(Qatar/JICA 2017;
UNDP/Japan2021)



Zahrat Al Finjan Treatment Facility
(JICA2022)

Nablus Treatment Facility
(Plan)

Ramallah Betin Treatment Facility
(JICA2022)

East Jerusalem Treatment Facility
(Plan)

Almenya Treatment Facility
(EU2014; JICA2022)





Treatment options cost estimates:

Method	Capacity (kg/hour)	Capital cost (US\$ × 1000)	Operating cost (US\$/kg)
Autoclave	23–3600	30–1780	0.13–0.36
Chemical treatment	11–6800	20–890	0.15–2.2
Microwave	23–410	70–710	0.10–0.42
Incineration ^a	250–4000	120–6000	0.15–0.30



STANDARD OPERATING PROCEDURES



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- Standard Operating procedures
- Data Requirement, quality and reporting
- Required human resources and staffing capacities
- KPIs and benchmarking



Sources of HCW



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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



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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?



HCW data requirements:



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Required data

Data generation

Data verification

Data storage

Data use



Minimal data requirements



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- 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



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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

