

Jordan Country Profile: Health Care Waste Management (HCWM) in the Context of COVID-19

September 2020

Background Information on HCWM

Population	10,101,694 ¹
National entities in charge of HCWM	Ministry of Health Ministry of Environment Greater Amman Municipality Ministry of Local Administration
Municipal solid waste (MSW) generation	2,529,997 tonnes/year ²
Health care waste (HCW) generation	4,000 tonnes/Year (2014) ³
On-site vs. off-site treatment	On-Site and off-site
Health care waste exports?	No
National solid waste management law and policy	Environment Protection Law No. 52/2006 ⁴ Solid waste management regulation No. 27 /2005 ⁵ Instructions for the Management of Solid Waste (2006) Management, Transportation and Handling of Harmful and Hazardous Substances Regulation No. 24/2005
National solid waste strategy	National Strategy to Improve the Municipal Solid Waste Management Sector in the Hashemite Kingdom of Jordan, September 2015 ^{6,7}
National HCW management law and policy	Medical Waste Management Instructions No. 1/2001
National HCW management strategy	No separate policies or strategies
National guidelines or standard operating procedures (SOPs) for HCWM	Instruction for Hazardous Waste Management and Handling (2003)

Policy and Planning Environment

The Government of Jordan approved its first national solid waste management strategy in 2015. Its main objective is to bring about a more cost-effective, efficient, affordable, environmentally and socially sound framework for municipal waste management in Jordan through improvements to institutional, operational, financial, socio-economic, and legal provisions. The strategy seeks to incorporate best practices in waste management hierarchies, shifting from the old system towards a modern and integrated one that will be based on the “Three R’s—Reduce, Reuse and Recycle” and prohibit the co-management of MSW with hazardous waste or special solid waste streams.

The solid waste sector is also among the target areas of the Government’s National Agenda for Sustainable Development (2006–2015) under the Environmental Protection and Sustainability initiatives, including the following initiative for health care waste:

- Improvement of health care waste segregation, transportation, storage and treatment, including update and enforcement of the legislative framework.

There appear to be no separate policies or strategies that deal directly with health care waste management. The National Health Care Strategy 2006–2010 did not address the subject of health care waste management.

Legal Framework

Environment Protection Law No. 52/2006 and related regulations establish the direct responsibilities for the Ministry of Environment and set overarching principles for environmental protection.

Solid Waste Management Regulation No. 27 /2005 establishes general requirements in terms of manpower, equipment, monitoring, container management, separation of hazardous wastes, documentation, and final treatment or disposal control, for every party that generates and/or manages solid waste.

Hazardous Waste Handling and Management Instructions (2003), under direct monitoring and enforcement by the Minister of Environment, establish the licensing and documentation requirements for generators, transporters, and treatment/disposal, as well as technical

1 The World Bank

2 Waste Global 2.0 Database, World Bank <https://datacatalog.worldbank.org/dataset/what-waste-global-database>

3 <https://www.resource-recovery.net/en/forum-report-sweep-net-regional-forum-amman-jordan-2014>

4 ILO Database http://www.ilo.org/dyn/natlex/natlex4.detail?p_lang=en&p_isn=98208

5 FAOLEX database <http://www.fao.org/faolex/results/details/en/c/LEX-FAOC063669>

6 National Strategy SWM, Jordan, September 2015 http://www.mma.gov.jo/Files/Docs/11102018_043930BaselineReport.pdf

7 European Commission review https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/c_2016_6629_jordan_aap_2016_part_2_aap_2017_part_1_annex_1.pdf

requirements for central storage, wrapping, transport, treatment, disposal, emergency, empty containers, etc.

Medical Waste Management Instructions No. 1/2001 establish the direct responsibility of the Ministry of Health to monitor, enforce, and regulate health care waste management. These instructions further define principles for segregation, central storage, collection, and transportation in health-care institutions, as well as treatment/disposal actions and technologies. Wastes are categorized into four groups: radioactive, medical, hazardous and domestic wastes. Mixing wastes of these categories is not allowed. Furthermore, health care waste is subdivided as pathologic, infectious and sharp materials which demand further separation and treatment by incineration or sterilization.

Jordan is also committed to many international conventions, such as the Stockholm Convention, the Basel Convention on the Control of Trans-Boundary Movements of Hazardous Wastes and their Disposal, the Rotterdam Convention and the Minamata Convention on Mercury.

Snapshot of COVID-19 Health Care Waste Situation

Declaration of the pandemic	March 17, 2020
Number of cumulative confirmed cases as of Sept 18, 2020	4,131
Number of governmental entities (G), HCFs (HCF) and service providers (SP) surveyed	1 (G) 2 (HCF) 2 (SP)
Pre COVID-19 HCW generated (among surveyed)	3 kg/bed/day ⁸
HCW during COVID-19 (among surveyed)	4 kg/bed/day ⁹
Percent increase (approximate)	Limited information to provide a reliable percentage
Types of COVID-19 waste generated	Infectious waste (sharps, pathological, clothes, lab cultures, personal protective equipment)
Changes to HCWM policy	Yes
Most common HCW treatment technology	Autoclave and incinerator ¹⁰
Service disruptions due to COVID-19 (among surveyed)	Yes
Emergency treatment/disposal procedures in place	Yes (new sterilization equipment and Industrial furnaces) ¹¹
Special COVID-19 training in place	Yes
Collection capacity surpassed?	No
Treatment capacity surpassed?	No (after extra treatment devices added)
Disposal capacity surpassed?	No

Institutional Framework

The Ministry of Health regulates, monitors, and enforces health care waste management requirements through Medical Waste Management Instructions No. 1/2001.

Since the beginning of the implementation of Medical Waste Management Instructions No. (1) for the year 2001, liaison officers have been identified and appointed for health care waste management in hospitals. There is also an infection control committee / health care waste management committee in every hospital.

The Ministry of Environment, the Ministry of Energy and Mineral Resources, and municipalities are involved in the disposal and treatment of radioactive, chemical, pharmaceutical and heavy metal wastes.

Programs and Actions in Place during COVID-19

According to the response from the Ministry of Health (MoH), below are the actions taken to handle the increase of waste generated due to COVID-19:

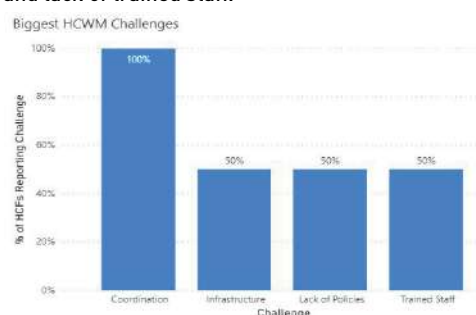
(1) A program has been set up to collect and sterilize bags from the outside, transport and treat health care waste from patients infected with the emerging coronavirus, and identify treatment devices in addition to treating health care waste generated by those patients.

(2) According to the guidelines of the World Health Organization and the CDC, the health care waste generated by COVID-19 patients is considered infectious health care waste to be placed in yellow plastic bags and treated in incineration or sterilization using shredders and sterilization units with humid heat. An examination of sterilization efficiency is performed using biological indicators.

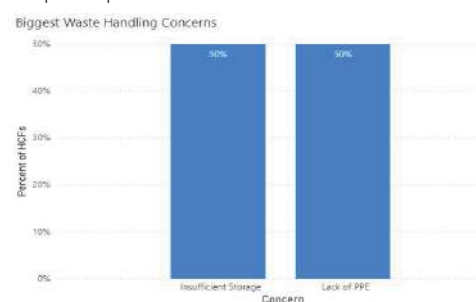
(3) The MoH through the United Nations Development Program proceeded with the installation and operation of health care waste sterilization equipment in nine hospitals belonging to the MoH, resulting in a significant impact on capacity to sterilize health care waste generated and avoid its accumulation.¹²

HCWM Challenges during COVID-19

The HCF survey respondents (2) cited the greatest challenges for HCWM as a lack of **coordination between departments and entities, lack of dedicated funding for operations and infrastructure, lack of policies, and lack of trained staff.**



The HCF respondents (2) also **identified insufficient storage and lack of PPE** as the major problems observed in waste handling during the COVID-19 response period.



The government respondent (MoH) also mentioned a **lack of a proper equipment maintenance program** to ensure the continuous functionality of the treatment equipment, noting that some of the treatment devices were damaged and inoperational.

Options for Improvement / Opportunities

- Update national legislation, guidelines and plans to enforce and promote the use of best available technologies and HCWM practices worldwide.
- Continue provision of medical treatment devices to all hospitals through private/public funding to increase capacity of treatment and storage.
- Establish maintenance and operations programs/contracts, or train internal personnel, to properly maintain, monitor and operate the medical treatment devices installed.
- Increase training and capacity for personnel at HCFs on proper waste storage, segregation and handling.

8 Dr. Jamil Tianjin hospital

9 Ibid

10 https://www.researchgate.net/publication/336969881_Medical_Waste_Management_in_Al-Basheer_State_Hospital_-_Current_Situation_and_Future_Prospects

11 <http://jordantimes.com/news/local/undp-introduces-medical-waste-disposal-technologies-jordan-facilities-amid-virus-outbreak>

12 Ibid