

National Healthcare Waste Management Policy

Maldives

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Table of Contents

1	Background	1
1.1	Justification	1
1.2	Health System Profile.....	2
1.3	Legal Background.....	2
1.4	Institutional and Administrative Framework.....	3
2	Policy Goal and Purpose.....	5
2.1	Vision.....	5
2.2	Guiding Principle	5
2.3	Purpose	5
2.4	Specific Objectives	6
3	Priorities of action	6
3.1	Governance and legal framework.....	6
3.2	Public Health, Occupational Safety and Environmental Protection	7
3.3	Waste Handling.....	7
3.4	Education, training and research.....	7
3.5	Resource mobilization	7
3.6	Monitoring and Evaluation	8
3.7	Contracting.....	8
4	Policy Implementation Framework.....	9
4.1	Planning and Strategic Implementation	9
4.2	Responsibilities	9
4.3	Monitoring and Evaluation for implementing the policy	11
4.4	Legislation	11
5	Policy Review.....	11
6	References.....	12

Acronyms

BAT	Best Available Technology
BEP	Best Environmental Practices
EPA	Environment Protection Agency
GHGs	Green House Gases
HCWM	Healthcare Waste Management
HPA	Health Protection Agency
RAHS	Regional and Atoll Health Service
IGMH	Indira Gandhi Memorial Hospital
MFDA	Maldives Food and Drug Authority
MoEE	Ministry of Environment and Energy
MoH	Ministry of Health
MoFT	Ministry of Finance and Treasury
NGOs	Non-Governmental Organisations
POPs	Persistent Organic Pollutants
PVC	Poly Vinyl Chloride
QARD	Quality Assurance Regulation Division
SOP's	Safety Operation Procedures
WMCL	Waste Management Corporation Limited
WHO	World Health Organization

1 Background

1.1 Justification

Inadequate and inappropriate handling of healthcare waste will have serious public health consequences and a significant impact on the environment. Sound management of healthcare waste is thus a crucial component of environmental health protection.

The unsafe disposal and treatment of waste produce emissions of several greenhouse gases (GHGs), which contribute to global climate change. A safer healthcare waste management system is leading to both better health and a safer environment.

In both the short term and the long term, the actions involved in implementing effective health care waste management programmes require multi-sectorial cooperation and interaction at all levels. Policies should be generated and coordinated globally, with the management practices implemented locally. Establishment of a national policy, strategy and a legal framework, training of personnel, and raising public awareness are essential elements of successful healthcare waste management.

In accordance to WHO between 75% and 90% of the waste produced by health care providers is comparable to domestic waste and usually called 'non-hazardous' or 'general health care waste'. It comes mostly from the administrative, kitchen and housekeeping functions at health care facilities and may also include packaging waste and waste generated during maintenance of health care buildings. The remaining 10-25% of health care waste is regarded as 'hazardous' and may pose a variety of health and environmental risks.

In pursuing their aims of reducing health problems and eliminating potential risks to people's health, health care services inevitably create waste that may itself be hazardous to health. The waste produced in the course of health care activities carries a higher potential for infection and injury than any other type of waste. Wherever it is generated, safe and reliable methods for its handling are therefore essential.

The dispersed islands, the prevalence of high water tables and limitations of land pose challenges to the healthcare waste management in the Maldives.

The current healthcare waste management system in the facilities is not standardised. The implementation and monitoring of safe management is weak and the following shortcomings have been identified:

- ⇒ Waste is not segregated correctly, not treated properly and disposed unsafely making the environment unsafe for people
- ⇒ Infectious waste is disposed of without being treated and/or disinfected.
- ⇒ Chemical liquid waste is drained and routed to the sea.
- ⇒ Pharmaceutical waste is not treated and disposed adequately.
- ⇒ Hazardous emissions like Persistent Organic Pollutants (POPs) like dioxins and furans are emitted by low temperature combustion and are threatening the health of the operator, health workers, public and the environment.
- ⇒ A responsible person for the management of waste in healthcare facilities is not designated.
- ⇒ A regular collection system for general non-hazardous waste is not available.
- ⇒ Training related to safe healthcare waste management is insufficient and not institutionalised.
- ⇒ Roles and responsibilities are not clearly defined.
- ⇒ A national healthcare waste management strategy is not available.

- ⇒ A national healthcare waste management guideline needs review
- ⇒ Allocated budget for the management of healthcare waste is inadequate
- ⇒ Preventive maintenance of waste management equipment is not established
- ⇒ timely delivery of spare parts of waste management equipment is not available at the moment
- ⇒ A standardised Monitoring and Evaluation structure for the management of health care waste is not implemented.

The lack in policy direction has resulted in or contributed to a number of constraints, which include poor environmental performance related to healthcare waste management in the country; unclear responsibilities of the governmental, public and private player and lack of reliable funding of safe and legal based health care waste systems.

1.2 Health System Profile

Decentralization Act 2010 states that, the administrative divisions of the Maldives consist of cities, atolls and islands; each administered by their own local council. Administratively, the islands are grouped into 20 atolls and at present 187 islands are officially declared as inhabited islands (source: health master plan 2016-2025)

There are mainly two different health providers which are generating healthcare waste: public, and private. All health providers have to comply with the laws and regulations of the government. The health system consists of Hospitals (Tertiary, Regional, Atoll, Private, Specialized), Health Centres and Private Health Clinics

There are 22 public hospitals and 165 health centres 109 Resorts and industrial health clinics. Furthermore 5 private hospitals are operational in the country. IGMH and ADK Hospital are the only tertiary hospital in the Maldives located in Malé. Regional and Atoll Hospitals provide secondary level services in the islands.

Regional Hospitals and atoll Hospitals provide curative services with major specialities including obstetric, medical and surgical for both routine and emergencies supported by laboratory and radiological investigations. Health Centres in islands offers general medical services and preventive and health promotion services.

1.3 Legal Background

The Maldives adheres to international treaties, declarations and agreements aiming to fulfil these obligations through its own national legislature:

- Vienna Convention for the protection of the Ozone Layer (1985) and its Montreal Protocol on substances that deplete the Ozone Layer (1987)
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal: Technical Guideline on environmentally sound management of biomedical and healthcare waste (1989)
- United Nation Framework Convention on Climate Change (1992)
- Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (1998)
- Stockholm Convention on Persistent Organic Pollutions (POPs), Stockholm (2001)

The Sustainable Development Goals were agreed by countries in September 2015. Waste management is embedded in several SDG goals as below:

- SDG 3 “Ensure healthy lives and promote wellbeing for all at all ages”
 - Target 3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.

- SDG 6 “Ensure availability and sustainable management of water and sanitation for all”
- SDG12 “Ensure sustainable consumption and production patterns”

The Maldives is not a signatory of the Minamata Convention on Mercury (2013).

On **national level** there are some documents which can be referred for the management of healthcare waste. In summary the main legal documents to be considered are:

Local Government Authority

- Act on Decentralization of the Administrative Divisions of the Maldives, 2010 (provides for general waste management by local councils, not healthcare waste management.)
 - Waste management regulations of island councils (provide for the basic methods of waste management. Does not provide in detail with regard to healthcare waste management.)
- Ministry of Health
 - Health Service Act, Law 29/2015 (Healthcare waste management not included)
 - Public Health Protection Act, Law 7/2012 (Does not provide for healthcare waste management specifically, but general waste management only.)
 - 2006 – 2015 Health Master Plan, 2005
 - 2016 – 2025 Draft Health Master Plan
 - National Infectious Control Guideline in Health Facilities, 2008
 - National Standard on Clinical Laboratories, 2013
 - Minimum Standards on HCWM, 2008
 - Ministry of Environment and Energy
 - Environmental Protection and Preservation Act of Maldives, Law No 4/93 (waste management in general)
 - Policy on Waste management, 2015
 - Waste Management Regulation, 2013 (doesn't specifically mention healthcare waste management, but provides for hazardous waste.)

1.4 Institutional and Administrative Framework

Waste Management in general is under the overall mandate of the Waste Management Corporation Limited (WMCL). The Ministry of Environment and Energy (MoEE) and the Environmental Protection Agency (EPA) are planning, implementing, monitoring and regulating the general waste management in the Maldives. The MoEE is responsible for the development of the legal framework for waste management, developing projects, conducting research, providing capacity building and is furthermore responsible for the provision of waste infrastructure and equipment on all islands. EPA is approving Waste Management Plans, providing permits for waste companies including waste transport companies (road and sea) and is monitoring these entities.

The responsibility for the management of waste generated in public and private healthcare facilities/institutions is directed to the Ministry of Health (MoH) through the National Waste Policy. The MoH is responsible to formulate health policies and plans as well as regulating, monitoring and evaluation of the health situation.

The Atoll Councils is the monitoring body at the atoll level and the Island Councils are responsible for managing the waste on the islands. In accordance to the Waste Regulation (2013) the councils are responsible to prepare and implement waste management plans for the islands and submit it to the regulating agency Environmental Protection Agency (EPA).

The managerial levels of the private and public healthcare facilities and institutions have the overall

responsibility for the management of waste inside the premises and to implement the policies, laws and regulations provided by the government. Based on the National Waste Policy the hospitals, health centres and clinics should manage waste produced by giving necessary support and cooperation to the councils.

2 Policy Goal and Purpose

2.1 Vision

Ensuring that all waste generated within the health sector is managed safely without adverse effects on human health and environment in an integrated manner that is environmentally and economically sustainable.

2.2 Guiding Principle

Key principles to be considered:

- Preventive Approach,
- Precautionary Approach,
- Polluter Pays Principle,
- Proximity Principle and
- Public Awareness and Participation.
- Duty of care principle

2.3 Purpose

The “National Policy on Healthcare Waste Management” is the leading document for the related framework of strategies, legal regulations, guidelines and operational procedures. It is providing the legal instrument for decision makers to have the legal obligation to implement safe and environment friendly healthcare waste system. Based on this policy a strategy and plan is developed to implement the policy. Furthermore it is guiding and coordinating the responsibilities and activities of the different actors.

The majority of waste is comparable to domestic waste and can be classified as “non-hazardous” or “general healthcare waste” like food waste, paper, plastic, not contaminated cloths and metal. A smaller part may pose a variety of environmental and health risks and is regarded as “hazardous healthcare waste” like infectious waste, pharmaceutical waste, pathological waste, chemical waste etc. The policy embraces the hazardous healthcare waste as well as the non-hazardous waste along the complete logistic chain: procurement, generation, segregation, collection, storage, transport, treatment and disposal.

2.4 Specific Objectives

- 2.4.1 To manage health care waste through healthcare waste management policies and strategies
- 2.4.2 To integrate health care waste with the national waste policy and strategy.
- 2.4.3 To minimize the quantities and risks associated with health care waste.
- 2.4.4 To protect health of patients, health workers, and public from hazards related to health care waste.
- 2.4.5 To protect the environment from the hazardous materials of healthcare waste.
- 2.4.6 To promote economically sustainable practices for healthcare waste management
- 2.4.7 To promote the proper management of healthcare waste by institute training programs and raising awareness of health workers, patients and public.
- 2.4.8 To ensure the proper management of healthcare waste through availability and accessibility of required tools and equipments.
- 2.4.9 To adopt healthcare waste management practices which support the international treaties such as Stockholm Convention on Persistent Organic Pollutants and the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their disposal.

3 Priorities of action

3.1 Governance and legal framework

- 3.1.1 Provide an effective legislative framework and minimum environmental requirements for health care waste management, in line with **international conventions**.
- 3.1.2 Move health care waste management up the four-step **waste hierarchy** whenever appropriate:
 - (1) Prevention a best option,
 - (2) Prepare for re-use,
 - (3) Recycle,
 - (4) Recover other value (e.g. energy),
- 3.1.3 Advance the implementation of an **integrated** waste management system for the country in line with the waste management hierarchy.
- 3.1.4 **Minimize the use of toxic, hazardous compounds** such as Poly Vinyl Chloride (PVC) and phasing out heavy metals such as **mercury** in the healthcare sector as much possible without compromising product performance.
- 3.1.5 Following the international **green procurement** rules all materials which are planned to be procured shall follow criteria which ensure that less toxic and less hazardous products are selected, without compromising product performance.

3.2 Public Health, Occupational Safety and Environmental Protection

- 3.2.1 Patient safety and occupational health and safety shall be promoted in the management of health care waste.
- 3.2.2 Public health shall be protected by limiting access to waste receptacles, waste stores, and treatment and disposal areas for patients, visitors and general public.
- 3.2.3 Healthcare facilities should ensure that safe work practices are developed and maintained.
- 3.2.4 Health workers and waste handlers need to be protected against adverse effects that occur from the handling of healthcare waste.
- 3.2.5 Environmental protection principles and guidelines shall be complied and followed by generators of waste in the handling and disposal of health care waste.

3.3 Waste Handling

- 3.3.1 Segregation and collection shall be enforced to ensure that healthcare waste is sorted in the waste classes and colour coded in accordance with the relevant regulations and guidelines.
- 3.3.2 Storage facilities for healthcare risk waste should be suitably sited, lockable, hygienic and appropriately sign-posted. Transporting health care risk waste on public roads and by sea shall be in accordance to the "Waste Regulation (2013)".
- 3.3.3 Selection of treatment and disposal of hazardous Healthcare Waste which pose minimal risk to the environment and which are in accordance with the relevant legal regulations.
- 3.3.4 Waste disposal and treatment facilities like landfills and incinerators need to be approved by EPA and shall meet the standards outlined in the Waste Regulation.

3.4 Education, training and research

- 3.4.1 Training Institutions and Universities in the Maldives educating health workers shall insert and update health care waste management modules into their educational programs.
- 3.4.2 The MoH formulates a national training manual which needs to be followed for waste handlers in the health sector.
- 3.4.3 All handlers of health care waste are required to be trained.
- 3.4.4 Research on safe and environmental friendly healthcare waste management needs to be conducted and promoted.
- 3.4.5 Promote innovative technologies on health care waste management

3.5 Resource mobilization

- 3.5.1 All public and private health care facilities should adequately budget for safe and environmental healthcare waste management and regardless of the technology the health care facilities shall have a designated annual budget for periodic maintenance and repair.
- 3.5.2 All relevant ministries authorities and other stakeholders should mobilize the necessary qualified human resources, material and finance for the implementation of this policy as it is part of their responsibility in the designated area.

- 3.5.3 MoH develops a costed plan and implementation strategy and provides support to public hospitals, clinics and other health care institutions in to develop and subsequently secure adequate budget provisions to implement planned and approved Healthcare Waste Management interventions.
- 3.5.4 The implementation shall follow the partnership approach in which the different relevant governmental authorities, communities and councils, national and international organisations, and the private sector shall be considered.

3.6 Monitoring and Evaluation

- 3.6.1 A national healthcare waste management monitoring system and plan shall be developed and set up. Data shall be collected on how health care facilities and/or institutions are implementing their health care waste management programmes and activities countrywide.
- 3.6.2 According to waste regulation 2013 sectoral waste management monitoring report shall be submitted to EPA on an annual basis

3.7 Contracting

- 3.7.1 External Companies contracted on health care waste activities on behalf of a health care facility shall comply with the national and local health, safety and environmental regulations and requirements.
- 3.7.2 The outsourcing entity shall be responsible for the supervision of outsourced services of the health facility and shall have the right for using a penalty system.
- 3.7.3 The outsourced entity should prove their competency by providing the required licences and permits.
- 3.7.4 Waste management contractors transporting, treating or disposing healthcare waste shall be registered and licenced by EPA.

4 Policy Implementation Framework

4.1 Planning and Strategic Implementation

- 4.1.1 A national strategy and implementation plan will be developed under this policy
- 4.1.2 The relevant departments and divisions of MoH are responsible for the implementation of this policy in terms of enforcement, monitoring, and capacity building through the development of regulations and operation procedures in accordance to the responsibilities defined in 4.2.
- 4.1.3 The MoH will collaborate and coordinate the health care waste management related activities with other relevant ministries and stakeholders

4.2 Responsibilities

- 4.2.1 Ministry of Health
 - Budgeting for sufficient and reliable budget for the safe and environment friendly set up and operation of waste management at health care facilities.
 - Develop and monitoring implementation of Standard Operations Protocols and Guidelines.

Regional and Atoll Health Services Division

- Planning and construction of alternative environment friendly waste treatment facilities and installation of waste equipment and technologies on the premises of the health facilities shall be conducted in collaboration with the Environmental Protection Agency and in line with the legal requirements of the MoEE.
- Regular monitoring of the preventive waste equipment service and maintenance in health facilities
- Provide support for the maintenance of waste equipment's/machines in the health facilities.
- Ensure that the health facilities make a sufficient budget annually for the maintenance, equipment's for health care waste.
- Ensuring of waste equipment/machine availability in all health facilities
- Provide specification for required machineries that are to be used in HCWM

Supply management and Logistic Division

- Identify, procure and supply environment friendly waste equipment's/machines for all health facilities.
- Maintenance of inventory of the waste equipment's/machines

Quality Assurance Regulation Division

- Develop relevant standards and guidelines for implementation of proper health care waste management
- Monitor the health facilities on the implementation of the health waste in accordance to the policy, guidelines and Safety Operation Procedures (SOP's)
- Licensing of health care facilities and holding the license if not in accordance with the policy guideline and SOP's
- Integrate routine occupational and safety inspections in health care facilities.

Health Protection Agency

- Set up information, education and communication strategies which shall be used to educate the public on the importance of healthcare waste management and the role of society in

- advocating for and ensuring effective implementation.
- Provision of technical knowledge and capacity development support to public and private hospitals, clinics and other health facilities.
- Collection and analysing of health care waste management data and practices to demonstrate the safe and environmental safe management of health care waste.

Maldives Food and Drug Authority

- Develop a mechanism for the collection and disposal of pharmaceutical waste and inform all parties / health facilities to follow the same procedure.
- Shall ensure the collection and proper disposal of expired pharmaceuticals in all health facilities and pharmacies in accordance to the policy, guidelines and SOP's and maintain the records.
- Documentation of the disposal of pharmaceutical waste must be maintained and shared with the relevant health facilities/pharmacies to minimize the waste generation.

4.2.2 Ministry of Environment and Energy (MoEE)

- Continuation to develop necessary regulatory tools for implementation of and compliance with best available technologies (BAT) and best environmental practices (BEP) for the treatment and disposal of waste from health facilities, to ensure the protection of human health and the environment.
- Providing capacity building, infrastructure and equipment for the waste management on the islands.
- Regular monitoring of the approved waste treatment and disposal facilities in collaboration with the MoH.

4.2.3 Environmental Protection Agency (EPA)

- EPA is responsible for ensuring all health sector waste is managed in accordance to the national waste regulation.
- Licencing of transport of healthcare waste and transport documentation (consignment notes)
- Licencing of waste treatment and disposal facilities in accordance with the EPA regulations.

4.2.4 Waste Management Corporation Limited (WMCL)

- WMCL is mandated to provide environmentally responsible and sustainable waste management services throughout the country.

4.2.5 Local Councils

- The island councils have to develop a waste management plan under the "Waste Management Policy (2015)" and relevant regulations and guidelines and implement island level
- The councils have to ensure that the waste generated in the health facilities is disposed in accordance to the legal regulations.
- The Atoll Councils have to coordinating and monitoring the activities of the Island Councils including the management of waste have to develop a mechanism to report to the Local Government Authority.
- The island councils are responsible for providing services of collection, transport and management of waste in the islands. It is their responsibility to set-up a method for providing service in consultation with MoEE

4.2.6 Public and private healthcare facilities

- The health care facilities have to implement the policy and strategy on site. The management, Director and/or similar position of the health care facilities has the overall responsibility for the management of waste inside the facilities and to implement the policies, laws and guidelines provided by the government.
- Allocate sufficient budget annually for the implementation of this policy at facility level.
- The management of each health facility has to appoint one person to be responsible for

- waste management within the facility.
- All health facilities have to be responsible for the safe management of health care waste in an environmental sound manner that minimises risk to the community and staff involved in its management.
- All health facilities must develop a Healthcare Waste management Plan as part of an overall environmental management system, unless exempted by the responsible authority. The Plan needs to be updated yearly.
- Institutionalizing of training programmes for professional and support staff and routine supervision.
- Healthcare waste quantities of hazardous waste and handling information need to be documented and reported to the relevant departments of the MoH.
- To supervise and monitor healthcare waste procedures onsite and to ensure that the procedures are in accordance to the relevant legal requirements.

4.3 Monitoring and Evaluation for implementing the policy

- 4.3.1 The Environment & Occupational Health Division of HPA is responsible for the development, implementation, administration and maintenance of a healthcare waste monitoring plan and tools, in harmony with other health related monitoring systems.
- 4.3.2 HPA is responsible to gather the data and information of the waste generators for documentation and evaluation.
- 4.3.3 Monitoring which are related to the responsibilities in accordance to Environmental regulations shall be coordinated with or reported to EPA.

4.4 Legislation

- 4.4.1 The MoH and MoEE shall develop and update the appropriate regulatory framework for the implementation of the policy.
- 4.4.2 For the implementation of this policy relevant documents shall be available and updated. These documents are among others the Healthcare Waste Guideline, National Implementation Strategy including an implementation plan and a comprehensive set of Safety Operation Procedures.
- 4.4.3 The implementation of the healthcare waste management system in accordance to this policy must comply with all legal requirements and provisions of the legislation, policies, strategies, plans and guidelines relevant to the management of healthcare waste in the Maldives.

5 Policy Review

The MoH in consultation with stakeholders shall take the responsibility for initiating revision of this policy and shall be revised every 2 years.

6 References

National legal framework:

- Health Service Act 29, MoH, 2015
- Public Health Protection Act, 7/2012
- Act on Decentralization of the Administrative Divisions of the Maldives, 2010
- 2006 – 2015 Health Master Plan, MoH, 2005
- 2016 – 2025 Draft Health Master Plan
- Environmental Protection and Preservation Act of Maldives, Law No 4/93
- Policy on Waste management, MoEE, 2015
- Waste Management Regulation, MoEE, 2013
- National Infectious Control Guideline in Health Facilities, MoHF, 2008
- National Standard on Clinical Laboratories, MoH, 2013
- Draft Policy and Guidelines on HCWM, MoHF, 2007
- Minimum Standards on HCWM, MoHF, 2008

International Guidance and Conventions

- Basel Convention: Technical Guideline on environmentally sound management of biomedical and healthcare waste (1989)
- Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (1998)
- Safe management of wastes from health-care facilities, Second edition, WHO (2013)
- Stockholm Convention on Persistent Organic Pollutants (POPs), Stockholm (2001)
- United Nation Framework on Climate Change (1992)
- Vienna Convention for the protection of the Ozone Layer (1985) and its Montreal Protocol on substances that deplete the Ozone Layer (1987)