





National Health Care Waste Management Strategic Plan 2016 - 2021

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Table of content

Foreword by MinisterForeword by WR	4
Foreword by WR	5
Acknowledgment	6
Introduction and Justification	7
Strategic Approaches	8
Strategic Priorities	9
Objectives to implement the strategic priorities	10
Strategic Plan Implementation and Monitoring	11
Implementation Plan 2016- 2021	
Strategic Priority 1: Improving of the legal framework on healthcare waste management	. 12
Strategic Priority 2: Improving of knowledge management and capacity building	. 13
Strategic Priority 3: Implementing of an integrated healthcare waste management system	. 17
Strategic Priority 4: Improving and adopting of national and local monitoring and evaluation process	. 21
Strategic Priority 5: Resource Mobilization	22

Abbreviations

EPA	Environment Protection Agency	MNU	Maldives National University
HCF	Health Care Facility	MoH	Ministry of Health
HCWM	Healthcare Waste Management	MEE	Ministry of Environment and Energy
HPA	Health Protection Agency	QAD	Quality Assurance Division
RAHSD	Regional and Atoll Health Service Division	SOP	Standard Operating Procedure
MBS	Maldives Blood Services	WAMCO	Waste Management Cooperation
MFDA	Maldives Food and Drug Authority	WHO	World Health Organisation

Foreword by Minister

Developing an integrated and sustainable health care waste management system is of utmost importance to ensure that all wastes generated within the health sector are managed without adverse effects on human health and environment, as the Republic of Maldives is moving towards the development of an environmentally sound waste management system in the country.

The development of this strategic plan under the "National Health Care Waste Management Policy (2016)" is a key achievement to improve the present situation of health care waste management in Maldives. This strategic plan will, therefore, guide in enforcing the "National Health Care Waste Management Policy 2016" and achieving its objectives through the establishment of an integrated countrywide system that is economical, socially and environmentally sustainable. Implementation of this plan in the future will protect the patients, the health of the workers, the health of the public and the environment from hazards associated with health care wastes generated in the country.

I acknowledge that the "Health Care Waste Management Strategic Plan (2016 – 2021)" was developed through extensive consultations with the relevant government institutions, health care facilities in the Malé City, and relevant non-governmental organizations. I guarantee that the plan is practical and achievable.

Likewise, effective implementation of this plan requires multi sectorial effort, cooperation, and engagement at all levels. It requires the involvement of the institutions that generates health care waste, relevant stakeholders of the government, public partner agencies and other institutions, to protect the health of our people and environment.

I would like to extend my gratitude to all the members who worked hard in making this plan a success and call upon all the relevant stakeholders to join hands with Ministry of Health in the successful implementation of the plan.

Mr. Abdulla Nazim Ibrahim Minister of Health

Foreword by WR

Of the total amount of waste generated by health care activities, about 85% is general, non hazardous waste. The remaining 15% is considered hazardous material that may be infectious, toxic or radioactive. They include a broad range of materials, from used needles and syringes to soiled dressings, body parts, diagnostic samples, blood, chemicals, pharmaceuticals, medical devices and radioactive materials.

Poor management of health care waste potentially exposes health care workers, waste handlers, patients and the community at large to infection, toxic effects and injuries, and risks polluting the environment.

I am very happy to note that National Health Care Waste Management policy and the National Health Care Waste Management Strategic Pan: 2016-2021 for the Maldives have been developed. I would like to thank the entire technical team involved. This document uses a comprehensive strategic approach with key five strategic areas; improving the legal framework for healthcare waste management, improving knowledge management and capacity building, implementation of an integrated healthcare waste management system, improving and adapting of national and local monitoring and evaluation process, resource mobilization. This plan will guide all activities and processes to safe guard our health workers and communities from the hazardous effects of these dangerous waster products.

The next step is to implement the plan. In collaboration with other partners, WHO also developed a series of training modules on good practices in health care waste management covering all aspects of waste management activities from identification and classification of wastes to considerations guiding their safe disposal using both non-incineration or incineration strategies. I encourage the national programme to refer to these training modules and use them to strengthen national capacity on medical waste management to begin with.

The National Medical Waste Management Strategic Plan implementation is being piloted in the Laamu Atoll. WHO has supported autoclaves and environmental friendly approach in the pilot project. We need to study this pilot approach and identify what works and what does not and find alternatives. And accordingly update the document before we scale up the plan in rest of the country. It is also important to note that the plan compliments and is a component of the National Waste Management Plan. Thus this is a multi sectoral plan and will be closely implemented in partnership with the Ministry of Environment and Energy and the community.

Dr. Arvind Mathur WHO Representative to the Maldives

Acknowledgment

Health Protection Agency is grateful for the continuous technical and financial support provided by WHO throughout the development of the health care waste managemwent strategic plan. Health Protection Agency also appreciates the technical assistance and guidance provided by the Environmental consultant, Dr. Ute Pieper in the development of the strategic plan. Health Protection Agency greatly values the active participation and valuable contributions provided from all those who are mentioned below, which made the development of the strategic plan possible.

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Introduction and Justification

ealth care waste poses risks to human health and to the environment when managed inappropriately. The Ministry of Health (MoH) of the Republic of Maldives, recognies the need to improve the management of healthcare waste in the country. Hence, the "National Health Care Waste Management Policy 2016" states the following vision:

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

In this Strategic Plan the gaps of the current health care waste management system in the country are identified and

accordingly objectives, key statements and priorities of actions are outlined to improve the management of health care waste in the country.

Health Master Plan 2016-2025 identifies healthcare waste management as an area of concern for health care quality. It states the enforcement of regulations and standards on the management of waste and waste reduction, including health care waste.

The purpose of this Strategic plan is to enforce the "National Health Care Waste Management Policy" by establishing a countrywide integrated healthcare waste system, which is managed without adverse effects on human health and environment, and that is environmentally and economically sustainable.

Strategic Approaches

This strategic plan and strategic plan was developed in consultation with the following stakeholders;

- 1. Ministry of Health
- 2. Ministry of Environment and Energy
- 3. Ministry of Finance and Treasury
- 4. Environment Protection Agency
- 5. Maldives Food and Drug Authority
- 6. Health Protection Agency
- 7. Faculty of Health Science
- 8. Indira Gandhi Memorial Hospital
- 9. Hulhumale' Hospital
- 10. Villimale Hospital
- 11. Waste Management Corporation Ltd
- 12. Medica Hospital
- 13. ADK Hospital
- 14. Maldivian Blood Services
- 15. Senahiya
- 16. UNDP
- 17. World Health Organization

The implementation plan is based on the identified priority areas, objectives, and activities. A phased implementation is envisaged, which will start with the improvement of the legal framework, capacity building, public awareness building activities and the initiation of a pilot project.

This strategic plan is developed in line with the "National Waste Management Policy" and "Waste Management Strategic Action Plan" endorsed by the Ministry of Environment and Energy which envisages the establishment of Waste Centres on each inhabited island and the construction of Regional Waste Management Facilities.

Strategic Priorities

An assessment was done to identify the current practices of health care waste management in Maldives. The following areas were identified based on the findings:

Strategic Priority 1
Improving the legal
framework for healthcare
waste management

Requirements for the safe management of healthcare waste need to be reflected within various legal instruments. Therefore, the revision of the existing legal framework and the development of new instruments which are in line with this strategic plan are needed.

Strategic Priority 2
Improving knowledge
management and
capacity building

To promote proper knowledge management on healthcare waste by institute training programs and raising awareness among policy makers, healthcare workers, waste handlers, patients and the general public.

Strategic Priority 3
Implementing of an
integrated healthcare
waste management

In order to improve the safe management of healthcare waste without adverse effects to the human health and environment, an integrated healthcare waste management system will be implemented in line with national waste management requirements and international treaties

Strategic Priority 4
Improving and adapting
of national and local
monitoring and

Good governance requires periodic monitoring of health care waste management activities and corrective actions.

Strategic Priority 5
Resource Mobilization

Resource mobilization will ensure different types of support such as physical, financial, technical, and human capacity to achieve the strategic plan.

Objectives to implement the strategic priorities

Based on the aboveoutlined priority areas, the objectives and general activities needed to implement the strategic plan are outlined.

The comprehensive approach of this strategic plan needs to aim all different kinds of waste generated in healthcare facilities (general waste, infectious and sharp waste, pharmaceutical waste, pathological waste, hazardous waste and chemical waste) from point of generation to disposal. Here, the measures need to be planned for each waste management step: waste minimization, Segregation, internal transport, storage, treatment, external transport, and disposal.

Strategic Priority 1 Objectives

- Review and revise existing legal documents
- Strengthen policy and regulatory structures for HCWM

Strategic Priority 3 Objectives

- Assessment of the current waste management situation
- Set up of an integrated system in a pilot Atoll
- HCWM Planning
- Promote green procurement and minimizing waste
- Improvement of Infectious Waste and Sharp Waste Management

Strategic Priority 5 Objectives

- Establish sustainable sources of funding
- Budget completion

Strategic Priority 2 Objectives

- Develop national training packages on health care waste management
- Implementation of developed HCWN training programs
- Increase advocacy awareness for behavioural change
- Promote Research, new technologies and innovative methods for sound management of HCW

Strategic Priority 4 Objectives

- Assessment of current monitoring situation
- Strengthen reporting, monitoring, and evaluation mechanism on HCWM
- Regular monitoring and evaluation of the Health Care Waste Management System and performance of the equipment

Strategic Plan Implementation and Monitoring

The implementation of the strategic plan will be achieved through the development and integration of the proper management of health care waste into the current waste management activities. Furthermore, the annual action plans of city/atoll/island councils will contribute to the implementation of the Strategic plan. Decisions on the adjustments of the Plan will be taken on the basis of monitoring and evaluation of the implementation of annual plans.

MOH plays the role of coordination of the process of implementation and monitoring and is responsible for: a systematic analysis and evaluation of the annual reports on the status of implementation;



• The validity of the necessary costs for the implementation of strategic activities.



• Identify possible sources of funding the implementation of measures.



Organization monitoring and evaluation system.



• Dissemination of the results of monitoring and reporting to relevant stakeholders.



• Identify deviations from the stated goals and objectives, analyse the causes and make the necessary adjustments.

Strategic Priority 1: Improving of the legal framework on healthcare waste management

Objectives	Measures / Actions	Expected results	2016 Q1 Q2 Q3 Q4	2017 Q1 Q2 Q3 Q4	2018 Q1 Q2 Q3 Q4	2019 Q1 Q2 Q3 Q4	2020 Q1 Q2 Q3 Q4	2021 Q1 Q2 Q3 Q4	Responsible agency (ies)	Budget USD
1 Review and revise existing legal documents	Identify gaps and outdated legal documents, Identify overlapping mandates of authorities and relevant stakeholder	Clear understanding of terminology, overlapping mandates and roles and responsibilities identified	ı						HPA, MoH, MoEE	0
	Review and revise existing legal documents	Existing legal documents are revised							HPA, MoH, MoEE	3,000
2 Strengthen Policy and regulatory structures for HCWM	Develop and update missing and outdated legal documents in the area of healthcare waste management	Legal documents developed and updated							Foreign Ministry, MoH, HPA, Labour relations Authority, WAMCO, MoEE, EPA, MoT, LGA,	6,000
	Disseminate strategic plan and legal documents on HCWM to relevant stakeholders	Relevant stakehold-ers are informed about the strategic plan and legal doc-uments on HCWM		ı					НРА	3,000
	Clear definition and approval of roles and responsibilities	Roles and responsibilities are documented and approved							Foreign Ministry, MoH, HPA, Labour relations Authority, WAMCO, MoEE, EPA, MoT, LGA,	0

	Objectives	Measures / Actions	Expected results	2016 Q1 Q2 Q3 Q4	2017 Q1 Q2 Q3 Q4	2018 Q1 Q2 Q3 Q4	2019 Q1 Q2 Q3 Q4	2020 Q1 Q2 Q3 Q4	2021 Q1 Q2 Q3 Q4	Responsible agency (ies)	Budget USD
1	Develop national training packages on health care waste management	Identify gaps and needs of the current training system for healthcare waste management	Gaps and needs are identified							MoH / HPA	0
l		Develop a training package for health care workers and conduct a trial training for the final revision of the training package.	The training package is available, trial training conducted and training package finalized.							МоН	16,000
		Develop an online training tool for regular refresher training activities – trial testing and revision	Online training tool is developed, tested and revised			П				МоН	4,000
		Liaise with relevant government bodies to approve HCWM component to be included in the curriculum	Content approved							НРА	0

	Objectives	Measures / Actions	Expected results	2016 Q1 Q2 Q3 Q4	2017 Q1 Q2 Q3 Q4	2018 Q1 Q2 Q3 Q4	2019 Q1 Q2 Q3 Q4	2020 Q1 Q2 Q3 Q4	2021 Q1 Q2 Q3 Q4	Responsible agency (ies)	Budget USD
		Consultative meetings with University, Education Ministry & Ministry of Health: Develop and incorporate HCWM for various categories of training /assessments	A national training/ capacity building for HC waste management in the education sector is developed							MOH/MNU & MOE	11,000
		Resource mapping to identify trainers trained on HCWM	Trained trainers are identified and documented.							НРА	0
2	Implementation of developed HCWM training programs	Train and certify master trainers from MNU campuses and schools, create pool of trainers at regional level	Master trainer and pool of trainers are trained			ı				MOH/MNU & MOE	130,000
ı		Assign a focal point in HCWM in each health facility and train focal points by the master trainers at regional level	Have a trained person in HCWM in each health care facility			П		ı		MoH / Health facilities	9,000
		Mandatory sensitization programs to Policymakers and Hospital managers	Policy makers and Hospital managers are trained							HPA with institutions	2,500

	Objectives	Measures / Actions	Expected results	2016 Q1 Q2 Q3 Q4	2017 4 Q1 Q2 Q3 Q4	2018 Q1 Q2 Q3 Q4	2019 Q1 Q2 Q3 Q4	2020 Q1 Q2 Q3 Q4	2021 Q1 Q2 Q3 Q4	Responsible agency (ies)	Budget USD
		Mandatory basic training for various cadres by the trained focal persons of the healthcare facilities: Attendants / Housekeeping, staff/ contractors, waste handlers outside hospital, waste equipment operators, focal points from island councils	Personnel from various cadres are trained on HCWM							HC facilities	0
		Follow up & refresher training on annual basis at regional level	Follow up done and refresher conducted on annual basis				П	П		HPA with institutions	0
		Introduce and provide an online mandatory training and assessment module for all levels of staff employed in a health care facility.	The online training introduced and used.				ı			МоН	0
3	Increase advocacy awareness for behavioral change	Develop and disseminate "Information, Education and Communication" materials to create awareness	Leaflets/posters/ Ads developed and disseminated							НРА	6,500

	Objectives	Measures / Actions	Expected results	2016	2017 Q1 Q2 Q3 Q4	2018 Q1 Q2 Q3 Q4	2019 Q1 Q2 Q3 Q4	2020 Q1 Q2 Q3 Q4	2021 Q1 Q2 Q3 Q4	Responsible agency (ies)	Budget USD
		Promote awareness on HCWM for Policymakers (Green and environment friendly procurement) and waste handlers by pictorial reminders, promote guidelines and SOPs	Improved awareness among policy makers and relevant stakeholders							HPA with institutions	6,500
		Increase awareness by Radio, TV ads and social media, Mobile phone Applications	Improved awareness of the public			П				HPA with institutions	4,000
4	Promote Research, new technologies and innovative methods for sound management of HCW	Enhance collaboration between MNU/ private colleges faculties and other stakeholders in order to facilitate research in the area of HCWM	Locally adapted methods identified / Global best practices contextualized							HPA / MoEE / MNU / MoE	0
		Conduct research on healthcare waste incinerator/waste burning emission in the Republic of Maldives	Research paper is written and dissem- inated							MoEE / EPA / MNU	10,000

				2016	2017	2010	2010	2020	2024		
	Objectives	Measures / Actions	Expected results	2016 Q1 Q2 Q3 Q4	2017 Q1 Q2 Q3 Q4	2018 Q1 Q2 Q3 Q4	2019 Q1 Q2 Q3 Q4	2020 Q1 Q2 Q3 Q4	2021 Q1 Q2 Q3 Q4	Responsible agency (ies)	Budget USD
1	Assessment of the current waste management situation	Carry out a baseline survey in collaboration with MoEE and disseminate the report (online)	Baseline study on current hcwm in the Republic is available and disseminated	П						HPA and MoEE	0
		Conduct feasibility assessment for non- burn technology	Feasibility Study on non-burn technologies is available and disseminated.							HPA / MNU	0
		Identification and detailed assessment of pilot area	Assessment was done and report disseminated							UNDP / WHO / MoH	6,500
2	Set up of an integrated system in a pilot Atoll	Planning, purchase, commissioning and training for needed waste equipment	Equipment available and installed							UNDP / WHO / MoH	130,000
		Planning and building of needed infrastructure	Infrastructure available and operational							UNDP / WHO / MoH	20,000
		Capacity building and raising awareness	Relevant council staffs and health facility staffs trained and awareness created					ı		UNDP / WHO / MoH	32,500 (6,500 per atoll)

	Objectives	Measures / Actions	Expected results	2016 Q1 Q2 Q3 Q4	2017	2018 Q1 Q2 Q3 Q4	2019 Q1 Q2 Q3 Q4	2020 Q1 Q2 Q3 Q4	2021 Q1 Q2 Q3 Q4	Responsible agency (ies)	Budget USD
		Conduct stakeholders' meeting to share the results of the pilot project	Pilot project result shared with relevant stakeholders		П					UNDP / WHO / MoH	2,000
		Development of HCWM plans templates specific to the kind and level of institution	Templates on HCWM plans are developed and disseminated							Health Facilities	0
3	Improving HCWM Planning and procurement process	Develop a proper procurement plan (annual plan)	Annual plans are available							RAHSD / MOH	0
		Disseminate the specifications of the consumables/ commodities/supplies	Specifications are available and disseminated							RAHSD / MOH	0
		Calculation of annual budget needed for HCWM at each HCF and provided as a separate budget line.	Annual operation and maintenance costs are calculated and available.		П	П	П	П	П	Healthcare facilities, councils, MoH, MoFT	0
4	Promote green procurement and minimizing waste	Developing a Resource Toolkit for Green procurement	Green procurement toolkit developed							HPA and MoEE / EPA	2,500
		Develop an E-Library for Green Procurement	E-Library for Green Procurement is accessible to for all facilities							Need basis	3,500

	Objectives	Measures / Actions	Expected results	2016	2017 Q1 Q2 Q3 Q4	2018 Q1 Q2 Q3 Q4	2019 Q1 Q2 Q3 Q4	2020 Q1 Q2 Q3 Q4	2021 Q1 Q2 Q3 Q4	Responsible agency (ies)	Budget USD
		Developing Case Studies and Best practices	Sharing of knowledge among stakeholders through annual forums							All relevant stakeholders/ HCF	0
		Develop and share institutional SOP's of a proper stock management to utilize the medicines before the expiry date by exchanging within the units and wards (Hospital level)	Institutional SOPs developed and shared							MFDA / MoH	0
5	Improvement of Infectious Waste and Sharp Waste Management	Set up a waste segregation system based on guideline	Proper segregation systems are available in all HCF							Health facilities / MoH / RAHSD	16,800 (4200 per atoll)
		Establishment of waste storage facilities in accordance with national guideline (based on the needs)	Storage areas for infectious and sharp waste are available in all HCF							RAHSD, MoH / HPA	206,800 (For one hospital 51,700)
		Establish treatment technologies depending on the waste generated	Treatment technologies for infectious and sharp waste are available and operational for all HCF							RAHSD, MoH / HPA	460,000 (per year)

	Objectives	Measures / Actions	Expected results	2016 Q1 Q2 Q3 Q4	2017 Q1 Q2 Q3 Q4	2018 Q1 Q2 Q3 Q4	2019 Q1 Q2 Q3 Q4	2020 Q1 Q2 Q3 Q4	2021 Q1 Q2 Q3 Q4	Responsible agency (ies)	Budget USD
6	Improvement of Pharmaceutical and Chemical Waste Man-agement	Establishment of storage areas for pharmaceutical and chemical waste in the HCF in accordance with national guideline	Storage areas for pharmaceutical and chemical waste are available in all HCF							MoH/ AHSD/ HPA	0
		Ensure regular collection and treatment of pharmaceutical and chemical waste on regional/national level	Regular collection contracted and contracts available							MoH/MFDA / RAHSD / HPA	0

Strategic Priority 4: Improving and adopting of national and local monitoring and evaluation process

	Objectives	Measures / Actions	Expected results	2016 Q1 Q2 Q3 Q4 (2017 Q1 Q2 Q3 Q4	2018 Q1 Q2 Q3 Q4	2019 Q1 Q2 Q3 Q4	2020 Q1 Q2 Q3 Q4	2021 Q1 Q2 Q3 Q4	Responsible agency (ies)	Budget USD
1	Assessment of the current monitoring situation	Develop assessment tools and user guideline (e.g. questionnaire, survey forms)	Tools and guideline developed							HPA / QAD	0
		Conduct the assessment of current monitoring situation	Assessment report is available and disseminated							HPA / QAD	0
2	Strengthen reporting, monitoring, and evaluation mechanism on HCWM	Develop monitoring tools and auditing tool	Monitoring and auditing tools are available and shared with relevant stakeholder		П					HPA / QAD	1,500
		Trial testing of the tool in 1 Atoll	Trial test conducted and weak points identified							HPA / QAD	3,500
		Finalize the monitoring and audit tools	Tools are finalized and ready to use							HPA / QAD	0
		Training of focal points from all the health care facilities	Focal points are trained and certified							HPA / QAD	9,000
3	Regular monitoring and evaluation of the Health Care Waste Management system	Monitoring and provid- ing feedback at least every 12 months	Monitoring reports gen- erated and shared							MoH/MFDA / RAHSD / HPA	0
	and performance of the equipment	Develop and maintain the web-based information system / Integrate information into National Information System	Web-based system developed / Information integrated into National Information System							HPA/MoH/NCIT	0

Strategic Priority 5: Resource Mobilization

	Objectives	Measures / Actions	Expected results	2016	2017	2018 Q1 Q2 Q3 Q4	2019	2020 Q1 Q2 Q3 Q4	2021	Responsible agency (ies)	Budget USD
1	Establish sustainable funding sources	Listing down pipeline projects	Pipeline projects iden- tified		П					HPA / stakeholders	0
		Identify co-financing possibilities	Co-financing possibilities identified							HPA / stakeholders	0
		Donor Forum (local and international)	Sustaining HCWM system		П					MoH/WAMCO/ MoEE	5,000
		Undertake resource mapping of all health fa- cilities and identify gaps in funding	Resource mapping was done and gaps identified							HPA/RAHSD, MoH	0
2	Budget completion	Complete budget calculation of the strategic plan	Budget calculation completed and reviewed		П					МоН/НРА	
		Approval of budget	Budget approved							MoH / MoFT	-



