GOVERNMENT OF GHANA

MINISTRY OF HEALTH

HEALTH CARE WASTE MANAGEMENT POLICY FOR GHANA

MINISTRY OF HEALTH
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FOREWORD

ACKNOWLEDGEMENT

The Ministry of Health (MoH) in collaboration with United Nations Development Programme (UNDP), the World Health Organization (WHO) and Health Care Without Harm (HCWH) commissioned the revision of this policy as part of the Global Environmental Fund (GEF) funded Health Care Waste Project in Ghana implemented by UNDP.

We acknowledge the valued input and direction throughout the assignment by the representatives of the Ministry of Health (MoH), Ghana Health Service (GHS), Ministry of Local Government and Rural Development (MLGRD), Ministry of Finance (MoF), Ministry of Sanitation and Water Resources (MSWR), Chemicals Controls and Management Center (CCMC) and the Built Environment Department of the Environmental Protection Agency.

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Table of Contents

1 INTRODUCTION

1.1 NATURE OF HEALTH CARE WASTE

The provision of health care, like any other human activity, generates waste which has to be managed and disposed of in a safe manner, in order to minimize risks posed to health workers, clients, community and the environment.

Health care waste (HCW) includes all solid and liquid waste (both hazardous and non-hazardous) generated whiles performing medical procedures, or during the performance of medical research involving humans and animals. In addition, it includes the waste originating from minor and scattered sources produced during health care delivery at home (e.g. home dialysis, self-administration of insulin, recuperative care).

The greater part of waste generated by health institutions are not hazardous and can be managed like household waste. This constitutes about 75 - 90% of all waste generated in health institutions. However, the remaining 10 - 25 % is hazardous and requires special arrangements for management (WHO, 2014).

Examples of hazardous health care waste are pathological waste (e.g. tissues and body fluids), pharmaceuticals (expired or unused drugs etc.), sharps (e.g. syringes, disposable scalpels, scalpel blades, etc.), non-sharp infectious waste (swabs, bandages, disposable medical devices, etc.), chemicals (solvents, disinfectants, etc.) and radioactive (spent sources of radioactive materials etc.), as well as wastewater including effluents from mortuaries.

1.2 Health System Profile

The health policy of the government of Ghana seeks to promote easy access to primary health car. Health centers and posts and in recent times, Community-Based Health Planning and Services (CHPS) compounds have been established at the community level to improve geographical access to provide primary health care. Other health care facilities are designed to manage more complex cases, which may be beyond the capability of the community level facilities.

Classification of health institutions enables management to plan appropriately for health care waste storage, treatment and disposal for each level. This classification is based on daily out-patient department (OPD) attendance, daily admissions, average bed occupancy and the severity of ailment or diagnosis. The referral system is based on the classification category of health institutions.

1.3 SITUATIONAL ANALYSIS

Since 2006, a health care waste management (HCWM) policy and guideline document has been in place to direct the management of health care waste in the health sector. Although this has resulted in some improvements in health care waste management there were still challenges with the implementation of the policy.

A survey carried out in 2013 to assess health care waste management (HCWM) situation in health facilities in Ghana showed that waste management practices were below acceptable standards and posed risk to staff and communities (UNDP & MoH, 2014). An inventory of dioxins and furans (UPOPS) from health care facilities showed high levels of these pollutants being released into the atmosphere. Though there is no known exposure limits set for these chemicals, in view of the substantial health risk they pose when one is exposed to them, the Stockholm Convention (2001), which Ghana has ratified, aims at reducing their release and exposure to the lowest possible level through the adoption of best available techniques in health care waste management

The survey brought to the fore the need for:

i. Revision of the national health care waste management policy, 2006 with emphasis on non- burn techniques

ii. Development of guidelines and standard operating procedures

iii. Standardization of waste segregation systems

iv. Standardization of colour coding and labelling of waste bins

v. Provision of appropriate vehicles for transporting waste;

vi. Secured storage sites within the health care facilities

vii. Secured environmentally friendly waste disposal sites

viii. Sufficient Monitoring / Training / Maintenance / Financing

To address these shortfalls, the Ministry of Health set up a working group made up of all relevant stakeholders, both public and private to review and revise the 2006 health care waste management policy and guidelines.

1.2 PURPOSE AND JUSTIFICATION FOR POLICY REVIEW

Improvement in quality of care is a major priority for the health sector. Health Care Waste Management is one of the important parameters in assessing Quality of Care in our facilities. Increasing international and national dimensions of diseases like HIV/AIDS, Ebola, Hepatitis and Zika virus has created the need for the health sector to protect its staff, the public and the environment from adverse impacts of health care waste. The health care waste management

policy and guidelines of 2006 does not consider new relevant international conventions Ghana has signed unto after the policy came into force. The current policy further emphasizes the use of non-incineration technologies for waste treatment in health care facilities and the need to promote the international standards for high temperature incineration (800°C-1200ºC) instead of the current practice with the De Montfort incinerators in facilities.

This policy review seeks to improve management of health care waste in accordance with existing international conventions through adoption of best available technology and best environmental practices.

2 THE POLICY AND LEGAL CONTEXT

2.1 Relevant International Conventions

2.1.1 Sustainable Development Goals

On 1st January 2016, the 17 Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development adopted by world leaders in September 2015 at a historic UN Summit officially came into force. Ghana has signed and adopted the SDGs into the Ghana shared growth development agenda II. These new goals universally apply to all member countries and seek to end all forms of poverty, fight inequalities, tackle climate change and protect the environment to ensure sustainability while ensuring that no one is left behind. Improving Health care waste management will contribute to meeting Ghana's obligation towards achieving Goal 3- good health and well-being, Goal 6 - clean water and sanitation, Goal 11 on sustainable cities and communities, and Goal 13 - climate action

2.1.2 Stockholm Convention

The Stockholm Convention on Persistent Organic Pollutants (POPs) is an international treaty to protect human health and the environment from the harmful effects of POPs. The Convention was adopted on 22 May 2001 in Stockholm, Sweden and entered into force on 17 May 2004. l This environmental treaty aims to eliminate or restrict the production and use of Persistent Organic Pollutants (POPs) from all sectors. The health sector releases POPs by treating waste through incineration at low temperature (De Montfort). Key elements of the convention include the requirement that each party provide financial resources and measures to eliminate the production and use of Intended Produced POPs (IPOPs), eliminate Unintended Produced POP (UPOPs) where feasible and manage and dispose of POPs waste in an environmentally sound manner (Stockholm Convention, 2001). The Stockholm Convention promotes the use of Best Available Techniques (BAT) and Best Environmental Practices (BEP).

2.1.3 Minamata Convention

The Minamata Convention on Mercury is an international treaty to protect human health and the environment from anthropogenic releases of mercury and mercury compounds (Minamata Convention, 2013). Parties agreed to control and, where feasible, reduce the emissions of mercury to the atmosphere from sources such as coal-fired power plants, non-ferrous metal smelters, and waste incinerators. Parties also agreed to stop or reduce the use of mercury in various manufacturing processes by specified dates.

Provisions in Article 4 of the Convention are especially relevant to the health sector. The Convention set a phase-out date of 2020 for the manufacture, import and export of mercury thermometers and sphygmomanometers. It also requires that measures are taken to phase down the use of dental amalgam (Minamata Convention).

2.1.4 Basel Convention

The Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their disposal was adopted on 22 March 1989 and came into force on 5 May, 1992. The thrust of the Convention at the time of its adoption was to combat the "toxic trade" of hazardous waste from industrialized countries to developing countries at the time. The overarching objective of the Convention is to protect human health and the environment against the adverse effects of hazardous wastes including incinerator ash. The provisions of the Convention center around the following principal aims:

- the reduction of hazardous wastes generation and the promotion of environmentally sound management of hazardous wastes, wherever the place of disposal;
- the restriction of trans-boundary movements of hazardous wastes except where it is perceived to be in accordance with the principles of environmentally sound management; and
- a regulatory system applying to cases where trans-boundary movements are permissible.

2.1.5 Bamako Convention

The Bamako Convention is a treaty of African nations prohibiting the import of any hazardous (including radioactive) wastes and includes clinical wastes from medical care in hospitals, medical centers and clinics. The Convention was negotiated by twelve nations of the Organization of African Unity at Bamako, Mali in January 1991, and came into force in 1998. Impetus for the Bamako Convention arose from criticism of the Basel Convention to prohibit trade of hazardous waste to less developed countries (LDCs), and from the realization that many developed nations were exporting toxic wastes to Africa. The Bamako Convention uses a format and language similar to that of the Basel Convention, but is much stronger in prohibiting all imports of hazardous waste.

2.1.6 Strategic Approach to International Chemical Management (SAICM)

It is a policy framework to guide efforts to achieve the Johannesburg Plan of Implementation goal that by 2020 chemicals are produced and used in ways that minimize significant adverse impacts on human health and the environment. The health sector is central to this given its key roles and responsibilities in the sound management of chemicals.

2.2 National Legal and Regulatory Framework

Waste management in Ghana is a multi-sectorial effort with the Ministry of Sanitation and Water Resource, Ministry of Local Government and Rural Development (MoLGRD) and the Environmental Protection Agency (EPA) playing key roles as implementer and regulator respectively. The responsibility for implementation is discharged through the District, Municipal and Metropolitan assemblies which are directly under the Ministry of Local Government and Rural Development.

The Hazardous and Electronic Waste Control and Management Act, 2016 instituted by the EPA has "Medical waste management" as one of its schedules. The Hazardous waste regulation has also been developed and passed to ensure effective implementation of the policy by all stakeholders. Other existing laws which have relevance for Health Care Waste Management assign certain functions to some institutions such as district assemblies and the EPA but lacks specific provisions for dealing with health care waste in a comprehensive manner.

The following existing laws that have relevance for Health Care Waste Management:

- The Constitution of the Republic of Ghana, 1992
- The Environmental Protection Agency Act, 1994 (Act 490)
- Environmental Assessment Regulations, 1999 (LI 1652)
- The Local Government Act, 1993 (Act 462)
- National Building Regulations, 1996 (LI 1630)
- Town and Country Planning Act, 1945 (CAP 84)
- Food and Drugs Law 305b (1992)
- Mortuaries and Funeral Facilities Act, 1998 (Act 563)
- The Criminal Code, 1960 (Act 29)
- Public Health Act of Ghana, 2012 (Act 851)
- Hazardous and Electronic Waste Control and Management Act, 2016 (Act 917)

The Constitution of Ghana enshrines the human rights of the individual and requires the President to report to Parliament at least once a year on all the steps taken to ensure the realization of policy objectives contained in Chapter 6 and in particular, the realization of basic human rights, a healthy economy, the right to work, the right to good health care and the right to education (Article 34(2)). Article 41 of the Constitution lists certain duties and responsibilities associated with the exercise and enjoyment of rights and freedoms, among which is the duty to protect and safeguard the environment.

The Criminal Code, 1960 (Act 29) 296(1) provides that whoever places or permits to be placed, any carrion, filth, dirt, refuse, or rubbish, or any offensive or otherwise unwholesome matter, on any street, yard, enclosure, or open space, except at such places as may be set apart by the local authority or health officer for that purpose commits a punishable offence. The code went further in section 297 (1), to state that when an offence has been committed under section 296 (1) but the offender has not been identified or discovered, the fact of any carrion or other substance mentioned in that subsection being found in front of any premises shall be prima facie evidence of its having been placed there by the occupier of the premises. By going to this extreme, the law seeks to ensure that residents take responsibility for the streets in front of them as well as their premises. There are similar provisions in the other laws cited above. The National Building Regulations, 1996 (LI 1630) stipulates in Section 145 (1) that a building for residential, commercial, industrial, civic or cultural use shall have a facility for refuse disposal. It went further to state in Section 145 (2) a requirement that each dwelling unit shall have a standardized dustbin or other receptacle approved by the District Assembly in which all refuse generated shall be stored temporarily. It provides for transfer stations to be located within reach and preferably protected from rain and prevention of spreading, pest infestation and scavenging activities and also states that hazardous and domestic refuse shall be treated separately.

There are a few existing legal documents which directly gives guidance to Health care Waste Management, however, they need to be updated and revised. These include:

- The National Sanitation Policy (MLGRD, 1999 & revised 2010)
- Health Care Waste Management policy and guidelines (MoH, 2006).
- Guidelines for Management of Health Care and Veterinary Waste, (EPA, 2002).

3 GUIDING PRINCIPLES OF THE POLICY

The key principles that informed the policy are as follows:

- **The Polluter Pays' Principle** was laid down as Principle 16 of the UN Declaration on Environment and Development in Rio 1992. The principle is the commonly accepted practice that those who produce pollution should bear the costs of managing it to prevent damage to human health or the environment. For HCWM it implies that the ultimate responsibility for ensuring that waste is disposed of, lies with the person or institution that generates the waste. But at the same time, there should be laid down steps to dispose of waste if the polluter is unable to pay for its disposal. In Ghana, the polluter pays principle was adopted in 2011.

- **The Precautionary Principle** which advocates for the adoption of measures to protect health and safety when the magnitude of the particular risk is uncertain. Health facilities should take the necessary steps to protect all workers from risk related to health care waste management.

- **The Proximity Principle** highlights a need to treat and/or dispose of **wastes near** their point of generation. The principle works to minimise the environmental impact and cost of **waste** transport. This is especially important to minimise the risks associated with waste transportation in the urban areas where a lot more health facilities are concentrated and centralized systems of waste treatment may be recommended.

- **The Sustainable Development Principle** ensures development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs. Health care waste technologies and practices should not create damaging effects on environmental resources.

- **The Principle of Subsidiarity** refers to participation at the lowest appropriate level of decision-making in the health sector. This implies that HCWM is a collective responsibility with all responsible parties on the waste management chain playing their roles efficiently and effectively. HCWM decisions should start from the generation point through to facility management level, regulation at the Ghana Health Service and finally at the policy level with the ministry of health.

- **The Principle of Improving Environmental Equity and Justice** focuses on the fair distribution of environmental benefits and burdens. Every citizen has the right to environmental protection and environmental justice and to live in a safe environment, free from hazardous substances. People should not be discriminated against in implementing environmental policy or regulation such as siting of waste treatment technologies and disposal sites.

- **The principle of flexible response**, as future developments in technologies, markets, consumer choice and political uncertainties require flexible solutions.

- **The principle of Complementarity** – refers to application of more than one method in managing and treating HCW. Due to the complexity of the composition of health care waste, no one technology can address all the material flow from health care activities. The principle of complementing one technology with the other should be observed to ensure that all the different categories of waste from health care facilities are properly treated before disposal to ensure a safe the environment.

- **The principle of Duty of Care**: requires that a worker has a legal and moral obligation to avoid acts or omissions, which could be reasonably foreseen to injure or harm other people. Health care workers have an obligation to adhere to standards of care so that their actions will not cause harm to their clients.. In the case of healthcare waste management, every waste generator, manager and handler has this duty to ensure that HCW management practices do not cause harm to people and the environment.

- The "**prior informed consent principle"** is designed to protect public health and the environment from hazardous waste. It requires that affected communities and other stakeholders be apprised of the hazards and risks and that their consent be obtained. In the context of health care waste, the principle could apply to the transport of waste and the siting and operation of waste treatment and disposal facilities.

Furthermore, the use of toxic, hazardous compounds such as Poly Vinyl Chloride (PVC) should be minimized and heavy metals such as mercury shall be phased out as much as possible without compromising product performance.

The Green Procurement Policy: refers to the principle of purchasing products and services that are least damaging in terms of environmental impact: 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. This policy will follow the international health care waste hierarchy: prevention, minimization, reuse, recycling, energy recovery and disposal.

4 POLICY FRAMEWORK FOR HEALTH CARE WASTE MANAGEMENT

4.1 VISION

A health sector that manages its health care waste safely and prevents its adverse impact on health care workers, clients, the general public and the environment.

4.2 GOAL

The main goal of the HCWM policy is to provide direction for effective, efficient and safe management of HCW through the adoption of best available techniques and best environmental practices to prevent injuries, infections and other hazards; protect and promote public health and the environment for sustainable development.

4.3 OBJECTIVES

The objectives of this policy are to:

1. Strengthen collaboration between the health sector and other relevant institutions for health care waste management.
2. Develop and enforce institutional and legal structures required for HCWM.
3. Ensure adherence to proper methods, infrastructural and technological development of health care waste management.
4. Create awareness of environmental and health hazards associated with health care waste among health workers, patients and the general public.
5. Build the capacity of health care workers and waste handlers in the safe and appropriate management of health care waste.
6. Appropriately plan, budget and mobilize resources for health care waste management at all levels.
7. Strengthen research efforts in the health sector, universities and other research institutions in the development and adoption of technologies available for health care waste management.
8. Develop an effective framework for capturing and reporting data on health care waste as part of an existing monitoring and evaluation system and facilitate the use of data for decision-making at all levels.

4.4 SCOPE

The Policy applies primarily to all health institutions including public, private, quasi-governmental, non-governmental, faith-based and traditional practitioners that operate in the country at all levels of the health care system. This includes Tertiary/Teaching/Specialist Hospitals, Regional Hospitals, District Hospitals and Sub-district Health Institutions (i.e. Health Centres/Clinics and Community Clinics).

Others include Health Research Institutions, Laboratories, Home-based Care, Nursing Homes, Alternative Health Care Providers, (including traditional healers and Traditional Birth Attendants (TBAs)), Dentists, Mortuaries, Funeral Homes and Undertakers, Pharmacies Veterinary Hospitals and Chemical Shops

The policy is equally applicable to situations of home based care for persons with infectious diseases as well as those in the "service industry" which encompasses "Wanzams", Barbers, Tattooists and Hairdressers/cosmetologists etc. Whilst reference may be made to general/ domestic waste generated by these institutions, the focus of the Policy is health care waste that is considered hazardous. Institutions and companies with responsibility for collection, transportation, treatment and disposal of waste are also expected to familiarize themselves with the provisions of the policy and must comply with them.

The policy includes solid and liquid hazardous and non-hazardous health care wastes along the complete logistic chain: procurement, generation, segregation, collection, storage, transport, treatment and disposal. The policy provides guiding principles, a policy statement, focus areas and it also assigns roles and responsibilities to various stakeholders and includes implementation arrangements.

5 POLICY FOCUS AREAS

5.1 GOVERNANCE AND COORDINATION

Governance and Coordination are important for the efficient and effective implementation of safe management of health care waste. Governance processes ensure that all relevant stakeholders deliver on their mandates and contribute to the achievement of the health care waste management objectives. Coordination and teamwork involves the encouragement of different institutions and stakeholders working together to achieve a common objective on mutually agreed roles and shared resources.

Policy objective 1

Strengthen collaboration between the health sector and other relevant institutions for health care waste management

Implementation measures

i. Establish and strengthen multi-sectoral and multi-stakeholder processes for policy dialogue, coordination, planning and accountability.
ii. Establish and support intra-sectoral departments and units within the health facility for coordination, planning and accountability.
iii. Explore possibilities of contracting out health care waste management to the private sector.
iv. Provide a framework of relevant incentives and sanctions that enable performance and promote accountability.

5.2 LEGISLATION AND REGULATION

The policy will be implemented within the relevant health care waste management legal and regulatory framework. Given the prevailing high levels of non-compliance with laid down Health Care Waste Management rules and regulations, there is the need to strengthen the legal regime and its enforcement.

The EPA, HEFRA, MMDAs and the MLGRD are of critical importance in this regard. Responsive regulations and bye-laws that provide the right incentives are necessary to improve on enforcement management.

Policy objective 2

To develop and enforce institutional and legal structures required for HCWM.

Implementation measures

i. Translate the policy into a national HCWM guideline

ii. Translate the policy into a national HCWM strategy and implementation plan.
iii. Develop regulation to support waste reduction, re-use, recycling and recovery.
iv. Identify all existing and proposed institutional arrangements that require legal backing for effectiveness
v. Ensure enactment of necessary legal instruments to support institutional functions including public-private partnerships, financing and funding arrangements, licensing, monitoring, control and ownership of wastes, point and non-point discharges
vi. Promulgate bye-laws for HCWM taking into consideration specific local conditions and level of the HCF.
vii. Enforce existing statutes and regulations on prevention of pollution of surface water and groundwater resources.
viii. Institute a means of incorporating, and adhering to, international conventions (Basel, Bamako, Stockholm, Minamata Conventions) into domestic law and develop rapid response systems for adopting emerging international regulations on issues such as climate change, as well as mercury containing waste.

5.3 METHODS, INFRASTRUCTURE AND TECHNOLOGICAL DEVELOPMENT

Appropriate methods, infrastructure and technology that deal effectively with health care waste shall be employed at all levels of the policy implementation. Health care waste shall be managed in a way that does not lead to an increased risk to compromise the integrity of the environment and safety of the citizens.

Policy objective 3

Ensure adherence to proper methods, infrastructural and technological development of health care waste management.

Implementation measures

i. Promote purchasing products and services that cause minimal adverse environmental impacts (green procurement) and waste minimization strategies

ii. Develop infrastructure that deals effectively with waste and does not lead to an increased risk to compromise the integrity of the environment (internationally approved temperature for incinerator, i.e. 800°C- 1200°C)

iii . Ensure availability and accessibility of HCWM infrastructure and technologies at facility level or jurisdictional area (MMDAs) for safe management of HCW.

iv Adopt technologies that are proven to be safe, effective and efficient for HCWM or has the potential to do so.

v. Institute a means of incorporating and adhering to appropriate methods and international conventions following BAT and BEP guidelines.

vi. Liaise with public and private technical institutions to develop infrastructure and technologies for HCWM

vii Ensure periodic maintenance and prompt repair of infrastructure and technologies used for managing HCW.

5.4 INFORMATION, AWARENESS CREATION, COMMUNICATION AND ADVOCACY

The more conscious the society is of health care waste risks and how to minimize them, the more effective health care waste management will be. When people understand the classification of waste, the need for waste minimization and separation using the recommended colour codes, they will properly handle the waste they generate. This is even more critical considering the prevailing situation in which, in the face of the inadequacy of health personnel, relatives of patients have to play more roles in caring for their relatives on admission. Advocacy shall be undertaken vigorously to solicit support for implementation of the policy from all stakeholders.

Policy objective 4

Create awareness of environmental and health hazards associated with health care waste among health workers, patients and the general public.

Implementation measures

i. Develop an Information, Education and Communication (IEC) plan which will involve the use of mass media to educate the public on the importance of health care waste management.
ii. Incorporate relevant aspects of HCWM into the curricula of basic schools and adult education programmes.
iii. Incorporate information on health care waste management into outreach education programmes.
iv. Disseminate the findings of the evaluation of health care management practices to all stakeholder ministries, departments and agencies.
v. Create awareness among development partners and all civil society organizations on the health risks associated with unsafe and improper health care waste management.
vi. Publish feature articles in the print media with key messages to stir up support required for the success of the health care waste management programme.
vii. Use other means of disseminating information such as mobile cinema vans, production of documentaries and docu-dramas which could be aired on TV stations; and posting of related information on websites of Ministry of Health/Ghana Health Service.

viii. Involve private health institutions through their respective trade associations in programs meant to create awareness of HCWM.

5.5 CAPACITY DEVELOPMENT

Capacity refers to knowledge and skills available to the health care facility for health care delivery. It includes a mix of technical and managerial capacity required to promote, protect and improve health. It is essential that the right caliber of personnel is recruited to supervise waste management activities in health care facilities. It is essential that training in safe and correct management of health care waste is provided to health care workers and waste handlers.

Policy objective 5

Build the capacity of health care workers and waste handlers in the safe and proper management of health care waste.

Implementation measures

i. Develop training materials on health care waste management to facilitate pre-service and in-service training.
ii. Incorporate health care waste management in pre-service and in-service training of health workers.
iii. Ensure all staff undergo in-service training in health care waste management.
iv. Communicate Standard Operating Procedures and national HCWM guidelines to all persons involved in HCWM.
v. Ensure that health facilities recruit personnel with requisite qualification and experience in the relevant field to manage health care waste.

5.6 SUSTAINABLE FINANCING AND COST RECOVERY

Effective implementation of this policy will depend on adequate planning and availability of sustainable source of funding.it is expected that every institution allocates a budget for HCW management in their annual plans for sustainable operation and maintenance of the HCWM system in each facility. Government and private health care facilities will take responsibility for sourcing funding for capital items with a huge financial outlay which may be needed for HCW management. Efforts shall be made to prevent, minimize and recycle waste as much as possible to recover cost.

Policy objective 6

Appropriately plan, budget and mobilize resources for health care waste management at all levels.

Implementation measures

i. Develop a comprehensive strategy for resource mobilization from national and international sources.
ii. Develop an annual financing plan with clear allocation of resources for all health care waste management equipment, disposables and infrastructure including budget for regular and preventive maintenance and repair.
iii. Advocate for progressive increase in public sector funding for health care waste management systems.
iv. Identify and implement options for generating sustainable revenue through recycling to support health care waste management plans.
v. Strengthen incentive and sanction systems for reducing wastage and improving transparency, accountability and efficiency in the use of public resources.
vi. Ensure public and private partnership to provide infrastructure with high capital outlay for managing health care waste.
vii. Private health care facilities will take responsibility for obtaining funding for capital items with a huge financial outlay.

5.7 RESEARCH AND DEVELOPMENT

Research to support health care waste management activities at the facility, regional and national levels is crucial for improving decision making and operational activities. Research and development activities shall be undertaken in collaboration with universities, and other stakeholders to develop innovative approaches for waste management in the country.

Policy objective 7

Strengthen research efforts in the health sector, universities and other research institutions in the development and adoption of technologies available for health care waste management.

Implementation measures

i. Maintain proper data on health care waste at all levels of the health care facilities to aid research activities.

ii. Support health care waste management research activities at the facility level.

iii. Research and development units of the health care facilities should add research on health care waste management activities to their routine work.

iv. Collaborate with universities and other research institutions to facilitate the development and adaptation of technologies available for health care waste management.

v. Disseminate research findings on health care waste management to health care facilities through seminar presentation or lecture series.

vi. Support research in appropriate technologies to meet current international best practices.

5.8 SUPERVISION, MONITORING AND EVALUATION

Monitoring and review are very critical functions for the effectiveness of any programme. Supportive supervision, monitoring and periodic audits are critical to identifying problems and risks involved in health care waste management whiles preventing the development of future problems and enhancing safety.

The implementation of the policy shall be monitored and periodic audits undertaken at all levels.

Policy objective 8

Develop an effective framework for capturing and reporting data on health care waste as part of an existing monitoring and evaluation system and facilitate the use of data for decision-making at all levels.

Implementation measures

i. Strengthen implementation of M&E activities at all levels.
ii. Develop a responsive reporting and feedback mechanism for M&E.
iii. Conduct periodic reviews in assessing the effectiveness of the health care waste management systems at all levels.
iv. Monitor adherence to guidelines and Standard Operating Procedures (SOPs) at all levels.
v. Conduct environmental impact assessment for incinerators and wastewater treatment plants when usage is initiated..

6 INSTITUTIONS, ROLES AND RESPONSIBILITIES

6.1 MINISTRY OF HEALTH

The Ministry of Health is responsible for the formulation of policy, monitoring and evaluation, resource mobilization for infrastructure and training in HCWM.

6.1.1 PUBLIC AND PRIVATE HEALTH INSTITUTIONS

The Ghana Health Service (GHS), Teaching Hospitals, Quasi-government Hospitals, Christian Health Association of Ghana (CHAG) and private health institutions are responsible for the implementation of the HCWM policy. They are also responsible for managing and providing health data, supporting health education activities, in-service training and contributing to regulation and standard-setting for health services.

Every health institution shall have the responsibility to segregate, store, label, treat, transport and dispose of all waste in the manner prescribed in the HCWM guidelines and other laws and regulations regarding Health Care Waste Management to safeguard the safety of its workers, clients and the environment.

6.2 HEALTH FACILITY REGULATORY AGENCY (HeFRA)

The Health Facilities Regulatory Agency (HeFRA) which was set up to license facilities for the provision of public and private health care services has an important responsibility toward proper healthcare waste management in health facilities. As part of their responsibilities, they are required to ensure that infection prevention and control practices are adhered to within health facilities to protect the health of the staff and clients. Internal activities of the health facilities that can compromise on quality of service delivery are therefore expected to be monitored by the Agency as part of their regulatory activities. The Agency shall therefore monitor operational activities of healthcare facilities as set out by Act 829 to ensure the safe management of health care waste within health facilities.

6.3 MINISTRY OF LOCAL GOVERNMENT AND RURAL DEVELOPMENT/ METROPOLITAN, MUNICIPAL AND DISTRICT ASSEMBLIES (MMDAs)

The Ministry of Local Government and Rural Development through the Metropolitan, Municipal and District Assemblies (MMDAs) shall conduct environmental monitoring inspections and enforce compliance to environmental standards/regulations and guidelines set by the MOH, EPA and other national regulatory agencies on health care waste management.

6.4 MINISTRY OF SANITATION AND WATER RESOURCES

The Ministry of Sanitation and Water Resources which is responsible for planning and directing Sanitation situation in the country including solid waste management shall work through its staff under the Ministry of Local Government and Rural Development shall supervise and monitor health care waste management in the various District Assemblies. The objective of such assignment shall be to protect health, the environment and create sanitary conditions required for development. Staff of the Ministry shall work collaboratively with staff of EPA, Ghana Health Service and HeFRA in ensuring proper health care waste management.

6.5 MINISTRY OF ENVIRONMENT, SCIENCE, TECHNOLOGY AND INNOVATION

The Ministry of Environment, Science, Technology and Innovation (MESTI) is the ministry responsible for the formulation and coordination of policies covering the environment. They also support the provision of technical standards and manuals.

6.5.1 ENVIRONMENTAL PROTECTION AGENCY

The Environmental Protection Agency (EPA) is the regulatory agency for the protection of the environment. They will be responsible for licensing transportation of hazardous waste on public roads, licensing waste treatment and disposal facilities and Monitoring of the same. The functions of EPA are set out in the Environmental Protection Agency (EPA) Act, 1994 (Act 490) and the Hazardous and Electronic Waste Control and Management Act, 2016 (Act 917).

6.6 MINISTRY OF FINANCE

The Ministry of Finance is responsible for raising financial resources and ensure budgetary allocations for infrastructure development and HCWM in health care facilities.

6.7 GHANA STANDARDS AUTHORITY

The Ghana Standards Authority is responsible for developing and setting quality standards for machinery and equipment.

6.8 FOOD AND DRUGS AUTHORITY

The Food and Drugs Authority is responsible for regulating quality of food and drugs and disposal of expired drugs, health consumables and equipment in partnership with other stakeholders.

6.9 THE GHANA ATOMIC AND NUCLEAR AUTHORITY

Ghana Atomic and Nuclear Authority is be responsible for managing all radioactive waste generated by the health care facilities in accordance with the authority's systems and procedures.

6.10 WASTE MANAGEMENT CONTRACTORS

Waste management contractors (Private Sector) are to operate within policies, regulations, supervisory and licensing arrangements set up by the MoH, GHS, MLGRD, EPA to promote efficiency and competitiveness in the management of health care waste and also to provide the bulk of HCWM services.

6.11 GHANA HEALTH SERVICE (GHS)

Ghana Health Service, which is the Agency responsible for managing public or government healthcare facilities excluding Teaching Hospitals, has responsibility to ensure safe management of healthcare waste from the facilities under its jurisdiction. GHS shall mandate Divisions/Departments such as ICD, OEHU, PHD and HASS to undertake appropriate steps for ensuring proper management of healthcare waste from the health facilities within the remit of the law, policy and guidelines introduced by GHS or mandated bodies. GHS shall include healthcare waste management in its medium and long term plans, annual budgets, reviews and reports. It shall also ensure that all donor projects undertaken in any of its Divisions/Departments have made financial provisions for healthcare waste management, especially those that generates waste.

In order for Ghana to meet its obligation under the Minamata Convention, GHS shall ensure that mercury free products/devices are procured and plans are developed to phase out mercury containing devices from the health sector. Moreover, healthcare waste treatment technologies that are environmentally friendly and complies with the Stockholm Convention should be promoted and adopted.

7 POLICY IMPLEMENTATION ARRANGEMENTS

7.1 Implementation Arrangements within the Health System

The following constitute implementation actions to be instituted at various levels of the health care system:

7.1.1 National Level

At the national level, the MoH will be responsible for the implementation planning and monitoring the implementation of the policy among the various agencies across the country.

Within the Ghana Health Service, the Institutional Care Division (ICD) will have ultimate responsibility for implementation. The Environmental Health Officers in collaboration with the Estate Management Unit (EMU) of the Health Administration and Support Services (HASS) will collaborate with the ICD on the day to day responsibility for coordinating waste management activities, ensuring that treatment and other related facilities are in functioning order and in the monitoring and supervision of the estate units within health facilities. This role will be performed in close co-operation with the ICD.

The Health Facilities Regulatory Agency (HEFRA) shall include the availability of appropriate technology and procedures to undertake efficient waste management in the qualification requirement for hospitals and clinics. , This requirement shall also be applied for monitoring of hospitals and

clinics to ensure the maintenance of a database of permits granted to health facilities with efficient waste management procedures.

The Occupational and environmental health unit (OEHU) of the Ghana Health Service in collaboration with the Estate Unit and the ICD shall coordinate and supervise the operational activities on health care waste management and occupational health and safety issues of personnel. The unit shall ensure that all the necessary health and safety measures to be adopted by staff are instituted and trainings to that effect are conducted regularly. The Occupational Health and Safety Coordinator and Environmental Health officers shall be the representatives of OEHU at the facility level. The occupational health nurse shall be responsible for the occupational safety of all staff. The Environmental health officer shall be responsible for health care waste management and the sanitary conditions at the hospital levels.

Teaching hospitals/Tertiary Level Hospitals which are semi-autonomous shall adhere to the policy and shall be model for other facilities in health care waste management. They are required to adopt the best technologies and practices that can be transferred to other facilities. They shall incorporate training modules on health care waste management in the curriculum of their health training programmes.

7.1.2 Regional Level

At the Regional level, the Regional Health Management Team shall have the overall responsibility for ensuring the implementation of the policy and monitoring of the implementation in the region.

7.1.3 District Level

At the District level, the District Health Management Team will have responsibility for co-ordination and supervision of the implementation of the policy at the various health institutions within the district.

7.1.4 Health Institutional Level

At the health institutional level, each facility shall establish a Health Care Waste Management Committee (HCWMC) to supervise, advice and manage the implementation of the policy within the facility.

The membership of HCWMC shall comprise the head of the institution, the Environmental Health Officer and three other senior officers (preferably heads of relevant departments involved in generating or handling waste in the facility).

The HCWMC shall ensure that BEP and BAT guidelines have been employed in the management of HCW in their facilities and green procurement approaches implemented.

7.2 Health Implementing Institutions

Health implementing agencies such as GHS, Teaching Hospitals, Research and Scientific institutions shall:

- ensure that institutions under their jurisdictions comply with the provisions in Hazardous and Electronic Waste Control Management Act, the National revised HCWM policy and National HCWM Guidelines.
- Be responsible for on-going monitoring in health institutions under their jurisdiction to ensure compliance to the provisions in the Hazardous and Electronic Waste Control Management Act the HCWM policy.
- The HCWMC shall ensure that BEP and BAT guidelines have been employed in the management of HCW in their facilities and green procurement approaches implemented.

7.3 Health Care Waste Service Providers / Contractors

Waste management companies, involved in Health care waste management (collection, transportation, treatment and disposal) shall apply in writing to the EPA and MMDAs and shall be permitted if the application meets the set requirements. They shall be responsible and liable for adverse effect resulting from their activities to human health and the environment.

- The health and safety of staff of waste management companies, involved in Health care waste management shall be ensured through the provision of safe systems of work and the institution of a system of regular medical monitoring and immunization complemented by relevant information and training. That is their staff are adequately trained in accordance with the minimum course content as contained in the National revised HCWM policy and National HCWM Guidelines.

7.4 Implementation Arrangements among Stakeholder Institutions

The MoH has ultimate responsibility for the implementation of this policy which is meant to provide guidance for the health sector as a whole. Each sub sector, namely, the Ghana Health Service, the Teaching Hospitals, Quasi-Government Hospitals, Mission Hospitals and the Private health institutions are expected to comply with the provisions of the policy and guidelines.

There are other ministries apart from the MoH, which play complementary roles in the management of health care waste. These include, the Ministry of Environment, Science, Technology and Innovation (MESTI), Ministry of Local Government and Rural Development (MoLGRD), Ministry of Defense, Ministry of Interior, Ministry of Sanitation and Water Resources and Ministry of Agriculture.

aThe policy is therefore meant to detail the plans and responsibilities of these MMDAs. Thus whilst the MoH through the individual institutions is responsible for segregating, storing and treating HCW, the district/municipal/metropolitan assemblies have to ensure that the waste is

transported and disposed of in an appropriate manner. In practice therefore, the health institutions' responsibility translates into the proper segregation, treatment where possible and transport to the transit point. The district/municipal/metropolitan assemblies must ensure that there are well trained and effective companies (certified /approved) to transport and dispose of and in some cases, treatment of the waste. They are the ones to screen, license and supervise the private waste management companies.

All relevant ministries, authorities and other stakeholders should mobilize the necessary human resources, material and finance for the implementation of this policy as it is part of their responsibility in the designated area. MoH in collaboration with relevant stakeholders shall develop a costed plan and implementation strategy and provides support to public hospitals, clinics and other health care institutions and subsequently secure adequate budget provisions to implement planned and approved Health Care Waste Management interventions.

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Abbreviations

BAT	Best Available Techniques
BEP	Best Environmental Practices
BED	Built Environment Department
CHPS	Community-Based Health Planning and Services
CCMC	Chemicals Controls and Management Center
EPA	Environmental Protection Agency
GEF	Global Environmental Fund
GHS	Ghana Health Service (GHS)
GAEC	Ghana Atomic Energy Commission
HCF	Health Care Facility
HCW	Health Care Waste
HCWH	Health Care Without Harm
HCWM	Health Care Waste Management
HEFRA	Health Facility Regulatory Authority
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
IPOPS	Intentionally Produces POPS
LI	Legislative Instrument
MLGRD	Ministry of Local Government and Rural Development
MOH	Ministry of Health
MSWR	Ministry of Sanitation and Water Resources
MMDAs	Metropolitan, Municipal and District Assemblies
PPEs	Personal Protective Equipment
PVCs	Poly Vinyl Chlorides

POPS	Persistent Organic Pollutants
SDGs	Sustainable Development Goals
TBAs	Traditional Birth Attendants
UNDP	United Nations Development Program
UPOPS	Unintentional Persistent Organic Pollutants
WHO	World Health Organisation
Zoompak	Health care waste treatment facility

Glossary of Terms

Best Available Technique (BAT) – using latest or state of the art technologies that are appropriate for treating health care waste and are proven to be environmentally friendly in terms of emissions and energy consumption.

Best Environmental Practices (BET) – "the application of the most appropriate combination of environmental control measures and strategies" in this case to reduce health and environmental impacts of health care waste management activities.

Hazardous Waste: This refers to waste considered hazardous due to their potential for creating a variety of health risks as a result of their actual or presumed biological, chemical and/or radioactive contamination.

Health Care Waste: All untreated solid and liquid waste (both hazardous and non-hazardous) generated during the administration of medical care, veterinary care or the performance of medical research involving humans and animals. These include infectious, pathological, radioactive, pharmaceutical and other hazardous wastes.

Infectious Waste: Waste containing pathogenic organisms like bacteria, viruses, parasites and fungi in sufficient quantities to cause disease in susceptible hosts.

Non-Hazardous Waste: refers to as domestic or municipal waste which includes waste such as paper, fabrics, glass, food residues and containers waste not contaminated with blood, body fluids, or other harmful agents or materials.

Pathological Waste: Tissues, organs, body parts, foetuses, etc. that have the potential to be infectious and are therefore sometimes classified as a subcategory of infectious wastes.

Persistent Organic Pollutants (POPs): POPs are Synthetic (man-made) organic chemicals either intentionally or non-intentionally produced/released into the environment.

properties e.g. needles, scalpels, knives, glass, syringes, pipettes and similar items having a point or sharp edge or that are likely to break during transportation and result in a pointed or sharp edge.

Service Industry: they are service provider such as "Wanzams", Barbers, Tattooists and Hairdressers/cosmetologists etc.

Sharps: All items that pose a risk of injury and infection due to their puncture and cutting

Unintentionally Produced POP (UPOPS): are organic chemicals unintentionally produced/released into the environment from anthropogenic activities such as burning of waste.

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