ANALYSIS OF LEGAL FRAMEWORK IN ADDRESSING MEDICAL-WASTE MENACE IN NIGERIA*

Abstract
Health is wealth! Ironically the health sectors responsible in guaranteeing that the citizens are healthy, have become questionable in their role. They are apparently contributing to environmental pollution in the society through their waste products known as clinical or medical waste. The earth has been put on trial to answer for a crime it did not commit, as medical waste pollution has become an alarming situation in developing countries and a quick response is needed to salvage mankind and his environment from ruin. Environmental sustainability cannot be achieved if wastes from hospitals and similar health centers are not properly managed. Could it be said that the health sector given the role of ensuring the wellness of its citizens is a contributory factor to the very illness which society suffer from? The study is aimed at analyzing relevant statutes in addressing medical-waste menace in Nigeria. The method used is doctrinal with resorts to the use of primary and secondary sources. The problem of environmental pollution, specifically medical waste pollution is a global phenomenon, and developing countries such as Ghana, Namibia and Nigeria are worst hit, because of their inefficient waste management systems and inability to enforce environmental statutes. In conclusion, medical waste cannot be simply thrown away anymore, rather, it must be expertly handled. This study recommends that proper medical waste disposal methods should be carried out in line with statutory standards for effective management and protection of the environment. Medical waste management is not only necessary for maintaining a hygienic environment. It is also important in reducing probable health hazards.

Keywords: Environment, Medical-Waste, Management, Statutes, Health Institutions and Sustainability.

1. Introduction

A healthy environment is not only a need, it is also a right. It is the right to live and work in an environment conducive to physical and mental health. Environmental health comprises aspects of human health and the presence of diseases that are determined by factors in the environment.[1]Everyone has a right to clean air, water, and food and an environment free from contamination and pollution. We are born from the earth; we are sustained by the earth, and we return to the earth. Hence, the environment in which we live is very important and directly affects our lives because as commonly said, man is the product of his environment. Clinical waste is generated worldwide and it is a global challenge not only peculiar to Nigeria, but what makes it seem overwhelming compared to other countries is the inability to manage it properly and obey laid-down regulations controlling effective management. According to the National Environmental (Sanitation and Waste Control) Regulation 2009, waste is considered to be hazardous if it falls within

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[1]National Environmental (Sanitation and Waste Control) Regulation 2009, Schedule XIV.

and possesses characteristics as defined in the classification under the regulation. [2] Using the classification, hazardous wastes are identified and characterized as such when explosive, oxidizing highly inflammable, corrosive, and organically peroxides Historically hazardous wastes have been subject to regulatory control and impose strict notification requirements. They are flammable, cause irritation, are corrosive, toxic infectious, metameric or carcinogenic. There should be directives and a consignment note system to track the transportation of such hazardous clinic waste which includes information like waste description, waste producers waste carries, and disposal or recovery. Managing the production and disposal of waste is one of the greatest environmental challenges Nigeria grapples with daily. **(**Includes figures daily, and yearly statistics). Waste comes from several sources ranging from household, industry, and commercial farm waste, and the one in focus which is medical waste. There are several types of waste ranging from domestic, industrial, agricultural, medical waste, and others, this article focuses on medical waste generation, management, and adherence to regulations controlling medical waste.

Good health is an asset that imbues man with a feeling of personal worth, it helps the individual actualize his creative potential and contribute to national development.[3] Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity. Enjoying the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political behalf economic, or social condition.[4] The health of all people is a fundamental goal of man and provides the keystone necessary for optimum psychological, and sociological development. Health operates as a total force affecting every level of human endeavor thus directly influencing one's way of life by improving personal efficiency in the attainment of individual goals.[5] No one is casting aspersion on the health care provision for the people, instead the bone of contention is whether attending to the health of the people pose another higher danger to their lives.

Providing healthcare for the people does not automatically give license to healthcare providers to pollute the environment.[6] Primary healthcare in itself includes the promotion of proper nutrition, adequate supply of safe water; basic sanitation, maternal and child care, prevention of disease, methods of preventing and controlling diseases which include

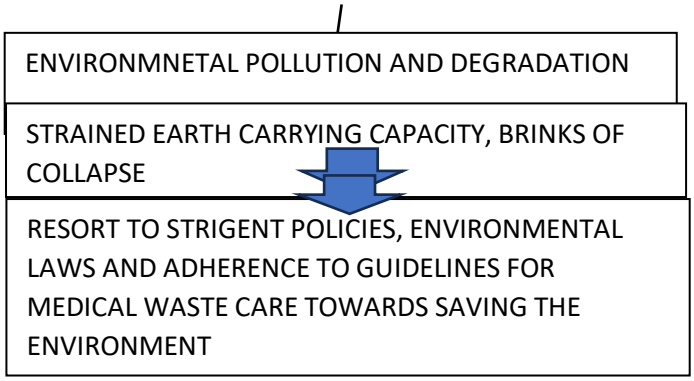
[2] *Ibid* (n 1).
[3]C.E. Emezi, 'Achieving Health for all Implications for Rural Development, inO. Robert and O Osemwota (eds), 'Management Problems of Primary Healthcare in Nigeria,'*The Institute of Public Administration and Extension Services*, University of Benin, Edo State, 2002.
[4]Z.A. Ademuwagun and S.O. Oduntan, *A School Health Education Handbook* (Ibadan: University Press, 1986) p.1.
[5]C.O. Udoh,*et al*, *Fundamentals of Health Education*, (Ibadan: Heinemann Educational Books, 1987) p. 16.
[6]J. Smith, 'Primary Health Care*,'* in K. Walshe and J. Smith, *Health and Management* (New York: Open University Press, 2016) p. 152.

proper environmental sanitation practices, tactical waste disposal methods especially medical waste and treatment of common diseases.[7]

Thus, the article appreciates the problems faced by the public due to improper medical waste management, and proceeds on the analyses of the legal instruments regulating proper medical waste disposal; the role of medical institutions in environmental waste management. It also assesses the available legal remedies and statutory instruments in tackling the scourge.

2. **Attainment of Sustainability through Proper Medical Waste Disposal**

Sustainable development is closely connected with health issues. How can it be said that a country has attained sustainable development when the citizens are ill daily from environmental pollution emanating from medical waste? The inability to properly manage medical waste can hamper sustainable development. A country that is grappling with issues of medical waste which has heavily polluted the environment can hardly attract investors, growth and development. The issue of proper medical waste handling has to be dealt with before sustainability can be achieved in any society. This brings us to the definition of sustainable development which is meeting the needs of the present without comprising the ability of future generations to meet their needs. Reducing health risks that are associated with environmental pollution from hazardous wastes (such as poor medical waste management systems) is top-notch among the priorities of the United Nations Conference on Environment (UNCED) 1992.

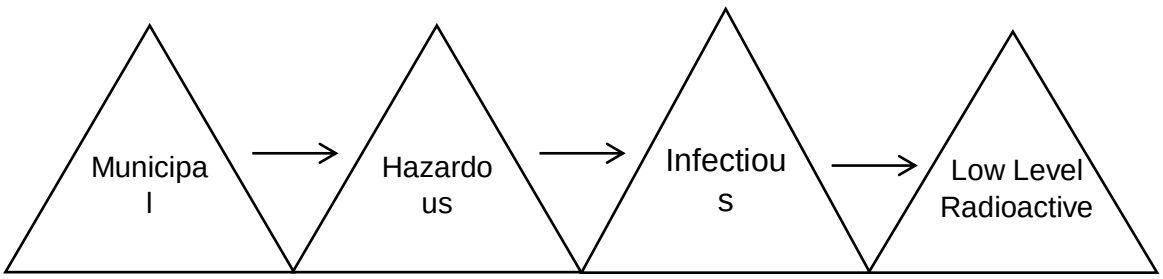


[7]WHO, 1978

The five principles of sustainable development listed, *to wit*:
(i) Living within earth's limits;
(ii) Ensuring a strong, healthy, and just society;
(iii) Promoting good governance;
(iv) Using sound science responsibly; and
(v) Achieving a sustainable economy. [8]

The United Kingdom (UK) round-table of sustainable development observed that: sustainable development is a continuous process, a journey, and not a destination. The key requirement is that we should all be moving in the right direction. This goes to show that attainment of sustainable development takes a lot of determination, resilience, and patience to do the right thing and follow the right direction.[9]

In this study, the right direction to follow in the area of medical waste management is the path toward ensuring that every aspect of medical waste should be properly handled. It is not enough to produce drugs, carry out surgeries, invent new technologies for advanced treatment of patients at the expense of the environment without due consideration of the health of our future tomorrow, our young minds who are prone and vulnerable to disease due to their tender and undeveloped nature. See below an overall categorization of the waste stream.



3. **Characterization of Healthcare Waste**
(a) **Infections Waste**: They are those that contain pathogens (bacteria, viruses, parasites, and fungi) in sufficient concentration or quantity to cause disease in susceptible hosts. They include:

[8]Report of our Common Future, the Brundtland Report (1987).
[9]Sustainable Development Commission Guide 2011 – Governing for the future, the opportunities for mainstreaming sustainable development

(i) Cultures and stock of infectious agents from laboratory work;
(ii) Waste from surgery and autopsies on patients with infectious disease (e.g., tissues, and materials or equipment that have been in contact with blood or other body fluids);
(iii) Waste from infected patients in isolation wards (e.g., excreta, dressings from infected or surgical wounds, clothes heavily soiled with human blood or other body fluids);
(iv) Waste that has been in contact with infected patients undergoing hemodialysis e.g. (dialysis equipment such as tubing and fitters, disposable towels, gowns, aprons, gloves, and laboratory coats);
(v) Infected animals from laboratories; and
(vi) Any other instruments or materials that have been in contact with infected persons or animals.
(b) Pathological waste: This includes tissues, organs, body parts, human fetus, animal carcasses, blood and body fluid.
(c) Sharps: This comprises of needles, hypodermic needles, scalpel and other blades, knives, infusion jet saws, nails etc.
(d) Genotoxic waste: These wastes can have mutagenic teratogenic or carcinogenic properties e.g. cytostatic drugs, vomits, urine, and faeces from patients treated with cytostatic drugs, chemicals & radioactive materials. Most common cytotoxic drugs used in health care include azathioprine, chlorambucil, chlronaphazine, ciclosporin, cyclophosphamide etc.
(e) Pharmaceutical wastes: These include expired, unused, contaminated, drugs, pharmaceuticals, vaccines, and sera that are no longer required. Other items in this category include bottle boxes, residual gloves, masks, connecting tubes, and vials.
(f) Others include chemical waste, waste with a high content of heavy metals, radioactive wastes, etc.[10]

4. **Sources of Biomedical Waste**

Statistics from the World Health Organization (WHO) state that the total amount of waste generated by healthcare activities is about 75%-90% general non-hazardous waste comparable to domestic waste. The remaining 10-25% is considered hazardous material that may be infectious, toxic, or radioactive.[11] Since low-income countries are not managing their healthcare care waste effectively through the non-separation of hazardous waste from non-hazardous waste, they end up producing the highest percentage of hazardous health-care-waste.[12]

Sources of medical waste could be classified as major and minor sources. The major sources include:

[10]O.G. Amokaye, *Environmental Law and Practice in Nigeria*, (2nd ed, Lagos: MIJ Publishers, 2014) 463.
[11]World Health Organization (WHO),'Health Care Aste (2018), available at<http://www,who,int/news-room/facts>,accessed on November 3, 2023.
[12]*Ibid.,* (Fn. 11).

(i) Government Hospitals/Private Hospitals
(ii) Primary Health Care Centres
(iii) Medical colleges and research centers
(iv) Veterinary colleges and animal research centers
(v) Blood banks/mortuaries/autopsy centers
(vi) Biotechnology centers
(vii) Production limits
(viii) Medical laboratories
The minor sources include:
(i) Physician dentist clinic
(ii) Blood donation camps
(iii) Vaccination centers
(iv) Acupuncturist/psychiatric clinics
(v) Cosmetic piercing centers
(vi) Institutions for a disabled person
(vii) Home treatment by (Nurses from pharmaceutical centers who administer injections to patients at home)
(viii) Old people's home.[13]

5. **Challenges of Poor Handling of Medical Wastes**

Poor handling of medical waste can be detrimental to care staff, employees who handle medical waste, patients, visitors, and the neighboring environment in proximity to the hospital. Above all, if these wastes are not properly handled or disposed of, it can lead to severe environmental contamination, which can span a wide range of places through the air, water and the land.

Normally, hospitals are responsible for the waste they produce. They must ensure that the handling, treatment, and disposal of that waste will not have harmful consequences for public health or the environment.[14] Poor handling methods are a major challenge of medical waste in Nigeria, where an evaluation was conducted, it was discovered that most of the health facilities disposed their waste into municipal dumpsites without segregation, treatment or any kind of special content exposing the environment and the people to health hazards.[15]

The problem associated with such careless forms of waste disposal is that these medical wastes are exposed to unlicensed waste collectors, which are mostly referred to as waste

[13]P. Mathur,*et al*, 'Need of Biomedical Waste Management System in Hospitals – An Emerging Issue- a Review,' *Current World Environment Journal* (2012) (7) (1).
[14]International Committee of the Red Cross, Medical Waste Management, Switzerland (2011).
[15]W.R. Yelebe,*et al*, 'Biomedical Waste Treatment: a Case Study of Some Selected Hospitals in Bayelsa state, South-South Nigeria,'*American Journal of Engineering Research* (2016) 5, 28.

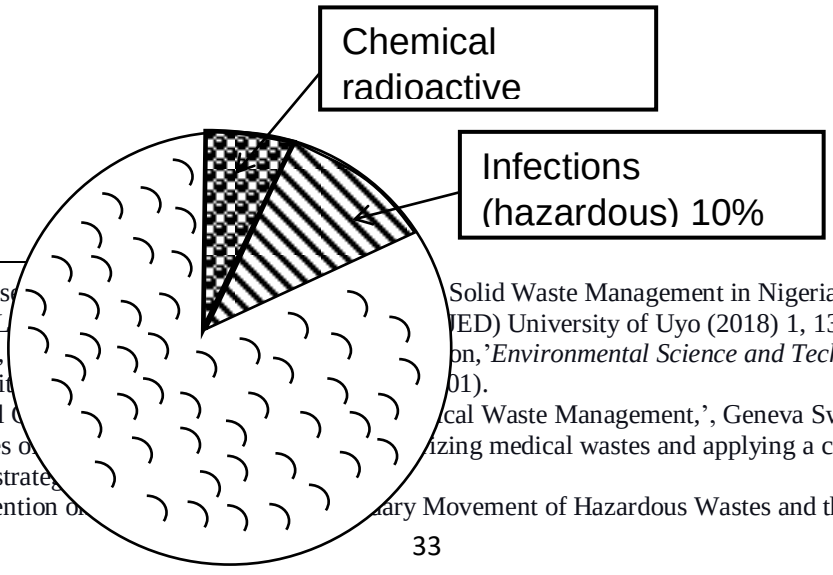
pickers or 'Aboki boys'.They contribute to environmental challenges and problems through their activities.[16] Their activities are illegitimate and they carry these medical waste from one location to another spreading diseases and even go as far as cleaning up some of the medical waste and sell for re-use to unsuspecting buyers.

It is pertinent to state that waste management entails availability of financial resources, robust legal framework, technical know-how, human resources, and heavy equipping of waste management staff. Since 75% to 90% of hospital wasters are similar to household refuse or municipal waste and do entail any particular hazard, they can be put through the care collection recycling, and processing procedures such as municipal waste incineration, grinding, and discharge to a sewer, milling, compaction, sanitary landfill dumping and burial at sea, pluralization, wet oxidation and anaerobic digestion.[17] The other 10% to 25% is called hazardous medical waste or special waste. This type of waste entails health risks.[18]

The major methods used for disposal of volumes of clinical waste is the use of high temperature thermal e.g. (Incineration, pyrolysis, gasification, etc.) In essence, disposal and management of medical waste is dependent on their categorization of whether they are first and foremost hazardous waste. Again, if they are hazardous in nature it will depend on the type of hazardous waste and the best method for it will have to be considered. Other things to be considered are their chemical components, radioactive, physical (liquid, gas and solid) components, and the most appropriate treatment method should be used.

Generally, waste management companies have reported that segregation at the point of generation is key to handling and treatment of costs, as well as assisting in appropriate recycling opportunities.[19] Environment waste should be managed in an environmentally sound manner, inclined to authorized sites.[20]

Breakdown of Health Care Waste



[16]F.K. Kwaghs Solid Waste Management in Nigeria, A Study of Makurdi and L JED) University of Uyo (2018) 1, 13.
[17]J.A. Salvato, on,'*Environmental Science and Technology Series*,(2nd Edit 01).
[18]International cal Waste Management,', Geneva Switzerland 2011.
[19]United States o izing medical wastes and applying a comprehensive management strate
[20]Basel Convention o ary Movement of Hazardous Wastes and their Disposal.

General non-hazardous waste

Other problems or risks associated with medical waste are, to wit:
(i) Transmission of infectious disease (from waste contaminated with blood and body fluids);
(ii) Physical injury from sharp wasters can expose the body to contamination from such injury; and
(iii) Chemical exposure (from cleaning solvents and treatment diagnostic and experimental work).

The risks associated with hazardous medical waste are numerous ranging from the risk of (trauma, infection, chemical, fire explosion, and radioactivity).[21] Above all, this research is mainly concerned with the risk of environmental pollution and contamination. Medical wastes not properly handled can cause the spread of disease, contamination of ground and surface waste if closely dumped to waste sources, land contamination, respiratory diseases (if by any means they are burnt), food contamination, food poisoning, injury, (land, water air pollution) and even death if the victim is not properly handled. Urban flooding is another major problem that can be caused by medical wastes if not properly handled and made to find their way to gutters and water passage channels, which can block their free flow when carried away by rain or erosion.

Healthcare waste poses serious hazards of secondary disease transmission due to exposure to infectious agents among waste pickers, waste workers, health workers, patients, and the community in general, where waste is not properly handled.[22]

6. **Legal Framework for the Control of Medical Waste in Nigeria**

6.1 **National Environmental Standard Regulation Enforcement Agency Act (NESREA)**[23]

The Act is focused on the protection and sustainable development of the environment and its natural resources. It provides for the establishment of an agency charged with the

[21]*Op. Cit*., (Fn. 18).
[22]Keith Alverson, Health Care Waste: What to do with It, Director of the United Nations Environment Program (UNEP) in Osaka, 2020 Japan, https://www.urep.org, accessed 4th November 2023.
[23]National Environmental Standard Regulation Enforcement Agency Act (NESREA)2007.

responsibility for the protection and development of the environment in Nigeria**.** It provides that the authority should ensure compliance with environmental laws, local and international, on environmental sanitation and pollution prevention and control through monitory and regulatory measures.[24] The Agency shall enforce compliance with the provisions of international agreements, protocols, conventions and treaties on the environment, including climate change, biodiversity, conservation, desertification, forestry, oil and gas, chemicals, hazardous waste, medical waste, ozone depletion, marine and wildlife, pollution, sanitation and such other environmental agreements as may from time to time come into force.[25] It enforces compliance with policies, standards, legislation and guidelines on water quality, environmental health and sanitation, including pollution abatement.[26] It creates public awareness and provide environmental education on sustainable environmental management, promote private sector compliance with environmental regulations other than oil and gas.[27] It also empowers the Agency to make and review regulations and guidelines on air and water quality, effluent limitations, waste management and environmental sanitation control of harmful substances and other forms of environmental pollution as well as sanitation and control of hazardous substances and removal control methods.[28] The agency shall make regulations to protect public health and promote sound environmental sanitation even in the area of medical waste.[29] Anyone who violates the provisions of the regulations made subject to subsection (1) of this section shall be guilty of an offense and punished under the penalties imposed in the regulations made pursuant thereto. It prohibits, without lawful authority, the discharge of hazardous substances into the environment. This offence is punishable under this section, with a fine not exceeding, N1,000,000 (One Million Naira) and an imprisonment term of 5 years. In the case of a company, there is an additional fine of N50,000, for every day the offence persists.[30] It provides that, where the offence is committed by a body corporate, every person who at the time of the offence was committed was in charge of the body cooperate shall be deemed to be guilty of such offence, and shall be liable to be proceeded against or punished accordingly.[31]

6.2**National Environmental (Sanitation and Waste Control)**[32]

The Minister of the Environment is empowered to make regulations to control environmental pollution in Nigeria. Some of the regulations include National

[24]National Environmental Standard Regulation Enforcement Agency Act (NESREA)2007, section 7.
[25]*Ibid*., section 7(c).
[26]*Ibid*., section 7(d).
[27]*Ibid*., section 7(1).
[28]National Environmental Standard Regulation Enforcement Agency Act (NESREA)2007, section 8(1).
[29]*Ibid*., section 25(1).
[30]*Ibid*., section 27.
[31]*Ibid*., section 27(3).
[32]National Environmental Waste Control 2009.

Environmental (Sanitation and Wastes Control) Regulations 2009; National Environmental (Permitting and Licensing System) Regulations 2009; National Environmental (Mining and Processing of Coal, Ores, and Industrial Minerals) Regulations 2009; The National Environmental Protection (Pollution Abatement in Industries and Facilities Generating Waste) Reg of 1991; National Environmental Protection Management of Solid and Hazardous Waste) 1991; National Environmental (Sanitation and Wastes Control) Regulations, 2009. The purpose of these Regulations is the adoption of sustainable and environmentally friendly practices in sanitation and waste management to minimize pollution.[33] Part 1 provides for preliminary issues. The Regulations apply to issues in environmental sanitation particularly food, market, and industrial sanitation; and all categories of wastes generated therein, especially, community, end-of-life, hazardous, health care, industrial, radioactive, solid, and packaging wastes. Part two deals with environmental sanitation matters relating to general cleanliness, and duties of owners and occupants of properties and premises. Any person whose activities generate waste shall ensure that the waste is bundled by persons licensed to transport and dispose of waste in designated waste management facilities. Part three provides for detailed provisions on the control of solid waste, effluent discharge, and hazardous and health care wastes.[34] It provides specifically for types of health care waste and other aspects of healthcare wastes such as treatment, segregation, transportation, registration etc.[35] In order to ensure the implementation at all levels of government of the NESREA Act, the National Environmental Sanitation Policy and Guidelines enforce compliance with the provisions of these regulations; ensure compliance with conditions of the permits issued as contained in the relevant schedules.
Part four provides for institutional roles and responsibilities of the federal, state and local governments by emphasizing the need for strategic cooperation and collaboration.[36] Part five seeks to ensure effective implementation of these regulations and promote stakeholder involvement in environmental sanitation through the public and private sector strategic alliance on approved intervention programmes; enforcement action and notices, offences and penalties.[37] This regulation specifically deals with health care waste from production to disposal. It also provides sanctions for violators of the regulation. Continuous enforcement is required to give more life to the regulation.

6.3**Harmful Waste (Special Criminal Provisions) Act, Cap H1, LFN 2004**

The Harmful Waste(Special Criminal Provisions) Act prohibits, without lawful authority, the carrying, dumping, or depositing of harmful waste in the air, land, or waters of

[33]National Environmental (Sanitation and Wastes Control) Regulations 2009, Regulation 2.
[34]National Environmental (Sanitation and Wastes Control) Regulations 2009, Regulation 23-63.
[35]*Ibid*., section 54.
[36]*Ibid*., sections 63-65.
[37]*Ibid*., sections 66-104.

Nigeria. All activities relating to the purchase, sale, importation, transit, transportation, deposit, and storage of harmful wastes are hereby prohibited and declared unlawful.[38] The law provides for a punishment of life imprisonment for offenders as well as the forfeiture of land or anything used to commit the offence.[39] It makes provision for the punishment accordingly, of any conniving, consenting or negligent officer where the offence is committed by a company.[40] The Act defines the civil liability of any offender. Accordingly, he would be liable to persons who have suffered injury as a result of his offending act.[41] Harmful waste has been defined as any injurious, poisonous, toxic, or noxious substance in particular including nuclear waste emitting any radioactive substance if the waste is in such quantity as to subject any person to the risk of death, fatal injury or incurable impairment of physical and mental health. This Act was enunciated solely to regulate dumping of toxic waste. This means it does not cover dumping of non-toxic wastes into the air, land, or waters of Nigeria.

Notably, the act provides for stiff penalty of life sentence,[42] yet, cases in which persons have actually been imprisoned for life are still awaited.Has the dumping of medical waste actually been curbed by the enactment of this law?The answer is in the negative, hence, more enforcement mechanisms ought to be put in place to see that violators are brought to book.

6.4 **The Criminal Code Act**[43]

Chapter 25 of the Criminal Code Act, sections 245-248 deal with offences against public health and protecting the environment while criminalizing acts which are done, contrary to the preservation of the environment and protection of man's health in the environment. Any person who corrupts or fowls the water of any spring, streams, well, tank, reservoir, or place, so as to render it unfit for the purposes for which it is ordinarily used, is guilty of a misdemeanor, and is liable to imprisonment for six months.[44] Further, any person who:

a. Vitiates the atmosphere in any place so as to make it noxious to the health of persons in general dwelling or carrying on business in the neighborhood;
b. Does any act which is, and which he knows or has reason to believe to be likely to spread the infection of any disease dangerous to life, whether human or animal, is guilty of a misdemeanor, and is liable to imprisonment for six months.[45]

[38] *Ibid*., section 1.
[39] *Ibid*., section 6.
[40] *Ibid*., section 7.
[41] Section 12
[42] See section 6 and 7
[43] Criminal code Cap 77, Laws of the federation Nigeria, 1990
[44] Section 245 criminal code
[45] section 247

As environmentally inclined these laws are, the fact is that they are focused on public health which is relevant in disposal of medical waste, the health of the public should be of topmost priority. The provisions of sections 245-245, the nature of the sanctions and it sappropriateness in sustaining environmental protection needs to be considered. Typically, when privatizing environmental offences, fines or imprisonment are considered for criminal offences.The problem of proof and *mens rea* poses difficulty in applying criminal law to environmental pollution issues, although in some jurisdictions. Strict liability is usually resorted to, without which, problems of proof would render public welfare legislation largely nugatory. This criminal provision nonetheless shows environmental issues relating to public health have been critical to Nigeria legislation.[46]Even though they cannot be regarded as serious environmental legislation, the provisions need to be well spelt out on environmental matters and the penalties and fines should be aggravated to serve as deterrence to defaulters.

6.5 **The Constitution of the Federal Republic of Nigeria(CFRN)**[47]

The constitution strongly directs the Nigerian government to protect the environment. Though protection of the environment was not provided for in the Nigerian constitution before 1999,[48] the 1999 Constitution imposes an obligation on the government to protect and improve the environment, particularly the land, water, and air.[49] The phrase to 'protect and improve' used by section 20 of the constitution literally imposed an obligation on the legislature to make new laws and improve on the existing rules to protect the Nigerian environment from all kinds of pollution. This provision of the constitution has been fulfilled as the Nigerian parliament enacted a series of environmental protection laws. The constitution has recognized the importance of prioritizing protection and improvement on the environment.[50] The Constitution of the Federal Republic of Nigeria, remains the apex law of the country. It has as its primary objective the protection of the air, land, water forest and wild life of Nigeria.[51]Logically speaking, to have a right to life entails a right to a clean and healthy environment.

All these are steps in the right direction, but more needs to be done to ensure that the constitution enshrines environmental right as a fundamental and justifiable right. Section 17[52] and 20[53] have restrictions on the rights of the citizen. The provisions being mere

[46] L. Atsegbua,*et al*, Environmental Law in Nigeria: Theory and Practice (Benin: Ambik Press, 2010), 1.
[47]The Constitution of the Federal Republic of Nigeria 1999.
[48]A. Odinkalu, 'Negative Effects of Gas Flaring: The Nigerian Experience',*Journal of Environment Pollution and Human Health* (2013) 1(1)6-8.
[49]Constitution of the Federal Republic of Nigeria, 1999 (as amended), section 20.
[50]*Ibid*., section 20.
[51]*Ibid*., section 33 and 34.
[52]*Ibid*., section 17 (2) (d): 'exploitation of human or natural resources in any form whatsoever for reason, other than the good of the common shall be prevented.'

fundamental objectives and directive principles are non-justifiable.[54] A call for restructuring of the country if adhered to could include re-visiting the constitution and making the provisions which relate to protection of the environment more elaborate, justiciable and clear. It could even consider making environmental right a constitutional right as has been done by India through the court's interpretation in the case of *Attakoya Thangel v Union of India* in 1990, where the Kerala High Court ruled that the right to sweet water, and the right to free air, are attributes of the right to life, for these are the basic elements, which sustain life itself.[55] Also, in the case of *Subhash Kumar v State of Bihar*, the court ruled that the right to life includes the right to enjoy water free of pollution.

Thus, the enlistment of right to a healthy environment in the constitutional will only make such other entrenched constitutional rights such as right to life more meaningful and realistic.[56]A right to life without the means by which the right can be sustained is like cutting one's nose to spite one's face,[57] whatsoever is gained by the entrenchment of the right to life is lost by non-inclusion of the right to environment as enforceable right in the constitution.[58] The article advocates for the advancement the concept of environmental right into constitutionally recognized rights in Nigeria.[59]

6.6**National Environmental (Healthcare Waste Control) Regulations 2021**

The objectives of this regulation are to:

(i) Prevent and minimize waste emanating from activities of healthcare facilities to safeguard human health and the Nigeria environment; and

(ii) to manage healthcare waste, including all categories of waste in medical care centers.

A health care facility shall prepare and implement a functional Health Care Waste Management Plan (HCWMP) which shall include measures to be taken:

(a) in the generation of health care waste;

(b) to safely contain, store, and transport healthcare waste;

(c) in the effective treatment and disposal of healthcare waste; and

(d) to mitigate the adverse effects of such healthcare waste.

Every owner, operator, occupant, or person in charge of management or control of healthcare facilities shall not handle, mix, treat, store, transport, or dispose of non-

[53] States shall protect and improve the environment and safeguard the water, air, land forest and wild life of Nigeria.

[54]Constitution of the Federal Republic of Nigeria, 1999 (as amended), section 6(6)(c).

[55] Available at <http://ww/ela.org/resources/text.asp>, accessed on November 7, 2023.

[56]*Ibid.* (Fn. 55).

[57] T. Ajala 'Taking Environmental Danger Seriously: Time to Break New Grounds'*LASU Law Journal* (2000)

[58]*Ibid.* (Fn. 56).

[59] C.A. Omaka, 'Imperativeness of Insertion of Environmental Right as a Fundamental Human Right in the Constitution of the Federal Republic of Nigeria,'*Benue State Journal* (2013) (1)(2)155.

hazardous items with hazardous healthcare waste. The Agency shall have the power to grant permit to qualified persons, and facilities to manage or treat healthcare waste. It shall also exercise the power to revoke permit granted by the provision of the National Environmental (Permitting and license system) Regulation to the following effect:
(i) A person shall not own or operate a healthcare waste treatment facility without a valid license. The health care facility must take appropriate measures to manage waste properly.[60]
(ii) The Agency shall have the power to serve an enforcement notice to an owner or occupant of premises in control or management of a health care facility or health care treatment facility, for contravention of any provision of the regulation, guideline, or any condition of permit.

The Regulation provides for offenses and penalties. Thus, a person who violates the provision of the regulation (40) commits an offense and is liable on conviction to a fine of not less than N500.000.00 or imprisonment for a term of not less than 2 years or both. Where it is committed by a corporate body, such corporate body shall be liable, on conviction, to a fine not less than N1,000,000 and an additional fine of N50,000 each day of the continuation of the default.[61] However, a person who violates the provisions of this Regulation, where no specific penalty is provided, commits an offense and is liable to a fine of not less than N200,000,00.[62]

7. **International Instrument for Medical Waste Management**

The international community has formulated numerous multilateral environmental agreements intended to protect the environment, hence the need for collective adherence to environmental treaty regimes. Environmental law is properly implemented and enforced at national level. In Nigeria, for instance, by virtue of the constitution, 'no treaty between the federation and other country shall have the force of law except to the extent to which any such treaty has been enacted into law by the National assembly.'[63] This section provides for implementation of treaties which also covers international environmental law treaties. Accordingly, the NESREA Act, 2007 provides:

> The agency shall enforce compliance with the provisions of international agreements, protocols, conventions and treaties on the environment including climate change, biodiversity, conservation desertification, forestry, oil and gas, chemicals hazardous wastes, ozone depletion, marine and wild life, pollution, sanitation and such other environmental agreements as may from time to time come into force.[64]

[60]National Environmental (Healthcare Waste Control) Regulations 2021, section 40.
[61]*Ibid*., section 47.
[62]*Ibid*., section 47(4).
[63]Constitution of the Federal Republic of Nigeria, 1999 (as amended), section 12(1).
[64] National Environmental Standard regulation enforcement Agency (NESREA) Act, 2007, section 7(c).

This section of the Act ratifies international environmental laws into Nigeria. Both provisions of section 12(1) of the 1999 constitution and section 7(c) of the NESREA act provide a platform for domesticating international environmental laws in Nigeria.

The first international conference on environmental protection in 1972, called the United Nations Conference on the Human Environment in Stockholm,[65] saw to the generation of significant number of multivalent environmental agreements (MEAs).One of the first serious attempts to establish the basis for a more comprehensive international approach to waste management was the 1976 OECD Council Recommendation on a Comprehensive Waste Management Policy to protect the environment and ensure rational use of energy and resources while taking account of economic restraints. Recommended principles include the need to take environmental protection into account;to encourage waste prevention by promoting recycling; to use policy instruments; and to ensure access to information. The Recommendation also endorsed administrative arrangements, including inventories of waste to be disposed of; organization of waste collection; establishment of disposal centers; and promotion of research and development on disposal methods. Years later UNEP Governing Council endorsed the 1987 Cairo Guidelines and Principles for the Environmentally Sound Management of Hazardous Waste, helping the government to develop policies for guidelines for environmentally sound management of hazardous waste from generation to disposal.[66]

7.1 **Basel Convention**

The Basel Convention seeks to protect the environment and human health against the adverse effects from the generation, management of trans-boundary movement, and disposal of hazardous and other waste. The convention was ratified by 178 countries including Nigeria to face the challenges associated with the trans-boundary movement of hazardous waste. The agreement entered into force on May 5th, 1992. Nigeria is a signatory to this convention. The convention aims at ensuring the minimization of waste generation as well as its environmentally sound management.[67] Some medical waste has been categorized as hazardous waste which this convention covers. Healthcare facilities are enjoined to treat waste generated in an environmentally friendly manner and take particular interest in the proper handling and disposal of hazardous medical waste for the safety and well-being of the people.

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[65] Report of the 1972 UN Conference on the Human Environment (UN Doc. Conf. 48/14/Rev.1), available at <http://www.un.documents.net/aconf48-14rl.pdfaccessed18-8-19>, accessed on November 30, 2023.
[66]P. Sands, *Principles of International Environmental Law* (Manchester University Press: New York, 1995) 492.
[67]UNGA, 'Gaps in International Environmental Related Instruments: Towards a Global Pact for the Environment, United Nations General Assembly, 30 March 2018, Res. 28.

7.2 **Bamako Convention on the Ban of Imports into Africa**[68]

The convention is on the ban of importation of all hazardous waste into Africa and management of hazardous waste within Africa, January 29 1991. It was adopted by all African governments following the negotiations under the auspices of the Organization of African Unity. Accordingly, all parties shall take appropriate legal, administrative, and other measures within the area under their jurisdiction to prohibit the import of all hazardous waste, for any reason, into Africa from non-contracting parties, and such import shall be deemed illegal and a criminal act.[69]

The Bamako convention bans explicitly dumping of hazardous waste, including those generated from the medical industries at sea and internal waters. Thus, parties must ensure that hazardous wastes to be exported are managed in an environmentally sound manner in the state of import and transit, and only authorized persons may store such waste.[70]

7.3**Stockholm Convention on Persistent Organic Pollutants**

The convention is a multilateral agreement that seeks to regulate the release of persistent organic pollutant into the environment. Persistent organic pollutants (POP) are chemicals that remain intact in the environment for long periods, becoming widely distributed;widely accumulate in the fatty tissues of living organisms, and are toxic to humans and wildlife.[71] These chemicals are formed and released to the environment by medical waste incinerators hence, the relevance of this Stockholm convention to health-care waste management. The objective of this convention is to protect human health and environment from these persistent organic pollutants. Nigeria is a signatory to this convention, which has been ratified giving it the legal force in the country. Parties to this convention commit themselves to take measures prescribed in the convention to reduce the total release derived from anthropogenic activities.[72] The POP's are unintentionally formed and released from thermal processes involving organic matter and chlorine as a result of incomplete combustion or chemical reaction. Waste incinerators of municipal hazardous and medical waste are cited as having the potential for comparatively high formation and release of these chemicals into the environment.

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[68]Bamako Convention on the Ban of Import into Africa and the Control of Trans-boundary Movement and Management of Hazardous Wastes within Africa (adopted 30 January 1999, and entered into force on 22 April, 1998).

[69]*Ibid*., article 4(1).

[70]*Ibid*., article 3.

[71] Y. Charter, *et al, Safe Management of Wastes from Health-care Activities* (2nd edn, World Health Organization, 2014).

[72]Bamako Convention on the Ban of Import into Africa and the Control of Trans-boundary Movement and Management of Hazardous Wastes within Africa (adopted 30 January 1999, and entered into force on 22 April, 1998), article 5.

There are a plethora of legal framework and international instruments for the protection of the environment, and for addressing the problem of health care waste in Nigeria. However, there is inadequate enforcement mechanisms for addressing medical-waste menace in Nigeria.

8. **Conclusion**

No waste should be handled carelessly especially wastes generated from medical facilities because of the contagious nature of such waste. The fact is, such waste cannot be prevented because people have to be treated to get well again.Therefore, the question is not why are these wastes generated but rather what are the proper environmentally friendly manner in which this waste can be handled so that they do not cause another problem. Several techniques for waste handling have been suggested, but this article, among other things, analyzes the legal frameworks for management and disposal of medical-waste. It is proper to direct people to properly dispose of their waste and introduce them to several methods of medical waste handling yet, they flout such directive until they are compelled by the law to do so, while being reminded of the punishment for refusal to do so. Hence, the saying that 'the fear of the law is the beginning of wisdom' holds good. It is pertinent to say that it is the enforcement process which puts the flesh on the bones of any regulatory system. The bane usually lies in the dearth of effectiveness and efficacy enforcement of relevant extant laws.[73] What makes the difference between Nigeria and other countries such as the United States of America who have taken the right step in the right direction towards proper medical waste management are tightened regulations of various environmental pollution backed up with action driven compliance mechanism; promotion of pollution prevention; aggressive environmental sanitation; proper disposal methods; technological advanced systems; recycling and stringent enforcement of regulation and sanctions, which include clean ups incarceration; and civil and criminal litigation against violators are strictly adhered to without cutting corners.

As health practitioners go about their legal duties attending to the health of their patients, they should ensure that the ecosystem, which is the end receiver of this medical waste has a limited carrying capacity of hazardous and non-hazardous waste and needs not be overstretched.

The judiciary, stakeholders, environmentalists, enforcement agencies, medical waste handlers, the government, and even the citizens have to be united toward a single goal which is earth sustainability and preservation for the benefit of all to the exclusion of non, through environmentally healthy practice knowing full well that we have only one earth. Thus, public campaigns, talk shows, seminars, and conferences should be organized

[73] E. Fisher,*Environmental Law: A Very Short Introduction* (London: Oxford University Press, 2017) p. 100.

periodically to sensitize people to the risks associated with healthcare waste. There should also be effective monitoring of medical care facilities (such as pharmaceutical companies, and hospital laboratories), etc. to ensure medical wastes are disposed of in compliance with the law. Importantly, the relevant institutions and enforcement agencies should strictly enforce penalties attached to environmental laws. The article further advocate for ccollaboration with national and international partners on novel ways to handle medical waste generated if the archaic methods are proving unsuitable. Thus, the government should invest in more technological facilities in the health facilities; train waste handlers, and ensure that license is granted only to approved trained medical waste handlers. The article calls for improved access to environmental justice, functionality of environmental courts for speedy determination of environmental litigation. Enforcement mechanisms and strict adherence to the provision of the law on the disposal and management of medical waste can go a long way to reducing drastic incidences of medical waste pollution in the environment.