

Biomedical Waste Management in Cameroon: A Legal Paradigm

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Abstract

Understanding how biomedical waste can be managed can lead to better and more effective way of curbing the effects it possesses to the society. In this light, the work sets out to make an analysis of biomedical waste management under Cameroonian law. The objective of this work has been to find the extent the laws in the environmental and health sectors step in to address management of biomedical waste. The doctrinal and empirical method has both been used to come up with this work. From our findings it has been demonstrated that, the Cameroonian legislators passively addresses the issue of biomedical waste management. This gives laxity to Cameroonian health operators who carelessly dispose of their waste without taking into consideration the environmental harm and health hazards they can produce. As such, it has been recommended that a comprehensive legal piece should be put in place, which will serve as a kick off to bring various stakeholders to order, thereby achieving an ecologically safe and healthy environment.

Keywords: Waste, biomedical waste, management

INTRODUCTION

Bio medical waste, [1] a by-product of health care establishments has become a global concern. In this light; they need special handling due to their highly toxic and infectious nature, which may pose a serious threat to human health as well as the environment if not managed properly. The response to the COVID-19 pandemic has accelerated the demand, use, and disposal of medical waste especially discarded personal protective equipment (PPE) and single-use plastics, which is causing significant challenges for infrastructure and strategic management and waste disposal particularly in countries with economies in transition where medical waste has not been adequately regulated.

Health care services in Cameroon is provided by the government, private individuals, missionary institutions and private corporations. Most of the laws that exists in the health care sector in Cameroon are regulatory framework laws amongst which are the 1964 Law on the Conservation of Public Health and the 1996 Framework Health Law (96/103 of 04/01/96). This, further coexist with environmental laws such as; “1996 Law on Environmental Management, Law No. 96/12 of 05/08/1996. As secondary norm, Order No. 003/Minepded [2] of 15 October 2012 to lay down specific conditions for managing medical and pharmaceutical waste [3].

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Despite the availability of regulations and policies in Cameroon with regards to management of health care wastes, their management has become a major problem due to increase in the use of disposable items, with the advent scientific discoveries on various drugs. Moreover, Cameroon has to tackle problems of improper segregation and

disposal of hazardous healthcare waste especially unsegregated and untreated hazardous waste which are openly dumped into municipal dumping sites and roads or are being incompletely burnt in the open. The situation has been worsened by the growth of mushroom roadside Medicare shops and clandestine hospitals flooding our cities who care less of what transpires of the waste they generate. It becomes problematic to reconcile the wrongful management of biomedical waste in spite of the available regulatory text. The emergence of all these problems guided the objective of this paper which is to examine the extent to which the laws in the environmental and health sector ensure the effective management of biomedical waste in Cameroon.

Judicial Categorization of Biomedical Wastes in Cameroon

It is worth mentioning that the Ministry of Environment Nature and Sustainable Development also took out time to classify medical waste in her Ministerial Order of 2012 [4]. Medical and pharmaceutical waste are grouped as follows:

Class 1

Category 1

Category 1 is classified as infectious waste. The elements of this group are viable micro-organisms or toxins that may cause diseases in humans or other living organisms (pathogenic waste), as well as unidentifiable human or animal organs and tissues. Examples include: piercing or sharp material to be discarded and damaged or expired therapeutic blood products and derivatives.

Class 2

Unused, spoiled or expired drugs, chemical and biological products and containers (vials, boxes) are the fundamental aspects that makes up this class. Genotoxic wastes which forms part of hazardous waste is also of part of it [5].

Class 3

These are waste that can be easily identified by a layman. It is made of human or animal organs and tissues.

Class 4

Household wastes are waste resulting from the use of house hold materials or any other common substance like food, clothes and brewages. The disposal of household waste can be influenced by the behaviour of people in a particular community [6]. The ministerial Order categorically provides that class four is limited to waste assimilated to household waste [7].

Legal Basis of Biomedical Waste Management in Cameroon

To tackle the problems associated with the improper management of biomedical wastes, the Cameroonian law makers have made considerable efforts to guides health care operators on the manner in which bio medical wastes are to be collected, sorted, treated and even transported.

Law No. 64-LF-23 of 13th November, 1964 on the protection of Public Health on the Protection of Public Health

This law comprises of six articles. The law gives room for its enabling instrument such as decrees and orders to define [8];

- The measures to be observed in terms of health policy at borders, on the coasts, in ports, aerodromes, railway and bus stations, hospitals, lazarets, cemeteries and other public or private places as well as during burials or cremations;
- The rules of sanitation of urban centers and inhabited places, buildings and their dependencies, public and private places, housing estates as well as the definition, the conditions of expropriation, prohibition of use and demolition of recognized buildings unsanitary or dangerous;

- The measures necessary for the prevention of epidemics, the suppression and treatment of communicable diseases in particular.
- The powers of the departments responsible for general health policing and monitoring the application of the regulations

Similarly, the law gives power to the court to authorize coercive measures likely to put an end to the irregularities or the offence and may also attach a fine to overrun the deadlines they set for the offenders to regulate the situation [9]. They also determine the amount of the said penalty payments in the event that the application texts are silent on this point. It is based on this that medical institution can be held accountable for wrongful management of biomedical waste following the applicable ministerial order which will be examined subsequently.

Law No.89/27 of 29 December 1989 on Toxic and Hazardous Waste

The prohibition of the introduction, production, storage, possession, transport, transit and discharge on the national territory of toxic and/or hazardous wastes in all their forms in Cameroon are governed by the **1989 law**.

Under the canopy of the law, local industries whose activities produces toxic or hazardous waste are to declare the volume and nature of their production. The companies are to further ensure the manner in which they handle their waste constitute no is danger to man and his environment [10]. This law provides a quantum of sentences to deter defaulters who violates the rules starting with *punishment by death imprisonment of 5 (five) to 10 (ten) years and a fine of 5 000 000 (five million) CFAF to 500 000 000 (five hundred million) CFAF [11].* One can applaud this legal instrument because it introduces stringent sanctions against defaulters which if implemented by the competent institutions, it will go a long way to minimize the improper disposal of biomedical wastes.

One of the strength of this law is that; looking at this provision, we find the law more stringent and precise resolving the discrepancies which arise when imposing liability on legal entities. A controversy arises when it concerns biomedical waste whose composition is not totally hazardous, but a substantial portion toxic and dangerous. In this light this provision can apply on the mishandling of hazardous biomedical waste, wherein hospital, health establishment can be held liable under civil law and the individual who committed the mischief the individual who committed the mischief, a criminal or civil liability can be imposed on him.

Law No 96/03 of 4th January, on the Outline in the Domain of Health

The framework law in its entirety provides basic rules to be adhered to by those involved in the health sector. As such a plan of action, measures to reduce risks exposure to infection and disease to medical staff must be respected [12]. This will be achieved by promoting hygiene, encouraging environmental sanitation and immunization, putting in place proper cleaning and waste evacuation system, trained health personnel and follow-up waste management in hospitals. It comprises of 6 Articles and is currently in a process of revision.

The 1996 Framework Law on Environmental Management

From a national point of view, it is worth highlighting that the Law is the main legal framework on national environmental policies in Cameroon.

Firstly, it is important to point out that under this law the national environmental policy is defined by the President of the Republic and the framework law on the environment. It presents the environment as a heritage common to the nation.

The law equally aims at guaranteeing to its citizens the right to a healthy environment [13]. Waste have to be treated so as not to cause harm to man and his environment [14]. This law is flawed in that

only a the sub section dedicated to addressed a mini review of biomedical waste in Cameroon. This is just one of the numerous weaknesses of this law which shall be further expounded in the chapter dealing with the challenges inherent to biomedical waste management and the law in Cameroon.

To proceed, persons who produce or own waste can either eliminate or recycle it. However, the operation must be approved by the administration in charge of the environment [15]. This law forbids the dumping of special industrial waste in stock plants where it can get mixed with other categories of waste, wherein biomedical waste is one of them as seen in the foregone. Stringent sanctions are provided to deter person who dumps toxic and/or dangerous waste [16].

Decree No. 2012/2809/PM of September 2012 to Lay Down Conditions for Sorting, Collecting Transporting, Retrieving, Recycling, Treating and Final Disposal of Waste

The Environmental Code is just a regulatory framework. To ensure full compliance with the provisions stated therein, there was the need for the 2012 Decree to be enacted. Chapter 1 contains general dispositions and defines the key words found in the Decree.

Chapter 2 is divided into four sections, section I on household and assimilated waste; section II on biodegradable, agricultural and inert waste; section III on industrial (toxic and/or dangerous waste) and finally section IV on medical and pharmaceutical waste. Of all the categories of waste management envisaged by the decree, that which is of concern to us is that of section IV on medical and pharmaceutical waste. The following provisions regulate biomedical waste management in Cameroon.

Medical and pharmaceutical waste must undergo specific management to prevent any harm to human health and the environment. To ensure proper management of biomedical waste, the public health administrations in conjunction with the competent authorities have to draw up a plan for managing medical and pharmaceutical waste [17].

In addition, for any natural or legal person to be involved in the process of collecting and transporting medical and pharmaceutical waste, they must obtain an environmental permit issued by the administration in charge of environment [18]. The Decree in chapter III is prohibits medical waste to be disposed of in landfills.

Chapter VI axis on administrative and technical monitoring of collecting, transporting and final disposal of waste operations. Here, it is a condition *sino quanom* that all equipment carrying biomedical waste must be labeled. Their labeling must specify the nature and type of waste transported/ or to be transported whatever the case [19].

Order No.003/Minepded of 15 October 2012, to Lay Down Specific Conditions for Managing Medical and Pharmaceutical Waste

It is a document which consists of five chapters and 23 Articles. Chapter I comprise of the general provisions, Chapter II lays down provisions for sorting, packaging and stocking methods, Chapter III is on the transport requirement, Chapter IV on treatment and disposal modalities and lastly Chapter V deals with the transitional, miscellaneous and final provisions.

Based on the provisions of this Order, every medical and pharmaceutical waste generator has to set up an internal management system [20].

Sorting, packaging and stocking methods are amongst the key issues discussed in the order. As far as sorting is concerned, waste must be coloured for easy identification. As part of the transportation requirements, transport operators of medical and pharmaceutical waste keeps a manifest of traceability of the said waste [21]. The transport operator has as duty to ensure that the classification code for medical and pharmaceutical waste put on the waste container corresponds to that indicated in the waste traceability manifest, signed when loading medical and pharmaceutical waste.

Setbacks in Biomedical Waste Management and the Law in Cameroon

The following are the difficulties encountered in coining biomedical waste management and the law in Cameroon:

Inadequate Laws and Poorly Formulated Norms

To begin, the Cameroonian legislator has failed to provide a comprehensive Law on the management of biomedical waste, but rather assigns this task to the ministries concerned, who has issued a ministerial order but its normative value is not as rigid as that of a law enacted by parliament. For example, there is no specific law on the management of biomedical waste in Cameroon. As a result of these lacunae, stakeholders tend to rely on other laws to regulate management of biomedical waste. The law on toxic and hazardous waste for instance provides rigid sanctions for defaulters in a manner which is repressive. However, stakeholders find a challenge on the interpretation of this law which brings uncertainty in its application in the area of bio medical waste management.

In order to realize this work, we sample some minds in order to get their views on the subject by way of questionnaire and interviews. This was the reality observed at arrival at the ministry of health. In an interview conducted with personnel at the legal department of the Ministry of Health, the following question was tabled;

Is there a law governing biomedical waste in Cameroon?

I think there should be, but I can't trace it. But there is one on toxic and dangerous waste.

So far has that law been applicable to health institutions?

I don't know you are the researcher; you are the one to tell me [22].

From this, we find out that, the provisions are overlapping and not well understood by institutions charged with their applicability. It should be recalled that; 80 to 85% of biomedical waste is non-hazardous in nature; the remaining 20-15% has hazardous components. As such there is a difficulty in concretely classifying such waste into the 1989 Law on toxic and hazardous waste, because it dwells solely on toxic and hazardous waste. But taking into consideration the spirit of the law, it aims at prohibiting the dumping of hazardous waste on the national territory. As such, the court which is the laboratory of the law can rely on the aforementioned law to punish defaulters. Moreover, this law does not address the issue of management of biomedical waste. This has opened rooms for laxity to the practice. Thus, enforcement authorities tend to passively on this law when crosschecking biomedical waste management practices in Cameroon. Due to this, resort is made on the framework law on environmental management, which in turn does not sufficiently/succinctly address the problem of biomedical waste management. An examination of the Environmental Code will be used to back up this affirmation.

Firstly, it is important to point out that under this law; the national environmental policy is defined by the President of the Republic. The law is the first legislative blue print in the area of environmental management [23]. It provides a fair attempt in tackling environmental concerns [24]. It presents the environment as a heritage common to the nation and also provides basic principles in environmental management.

However, this law is not without shortcomings. The law fails to addressed vital issues like the treatment of waste prior to disposal. This is a hurdle when it comes to biomedical waste management which require treatment prior to disposal, as such when an instrument of this magnitude fails to properly denote this necessity, it accounts for the laxity of biomedical waste handlers who tend to dispose of these waste without treatment.

Also, the law forbids incineration of waste only on water and not land despite the effect mentioned in the foregone. This is disastrous for a country like Cameroon where majority of the wastes are incinerated on land. The 1991 Antarctic Environmental Protocol has banned the open burning of

waste, since the end of 1989 session, but allows the burning of certain non-hazardous combustible waste incineration which is to the maximum extent practicable in reducing harmful emission. This lacuna in the Environmental Code makes it possible for people to burn or incinerate medical waste openly and go unpunished. There is no doubt that this act can be permitted but on the condition that an authorization to do so is obtained from the competent authority.

Lack of implementation commission for hygiene in healthcare units/ waste management unit

From an interview conducted with a personnel [25] at the hygiene and sanitation unit at the central hospital Yaoundé, the later mentioned that, there is lack of hygiene medical agents, what the statute refer to as waste management unit, those who particular take care waste in hospitals, as such this defiance has given rise for smaller institutions to suit their selves as they can with the means they have like in the case of the Soa District Hospital as revealed by our source. This poses a problem because this unit is to particular be in charge of the follow up of waste in hospitals, making sure that the practice on ground conforms to the ministerial order. For instance, the keeping of a register of waste generated and its categories as required in Article 4 of the regulatory statute is supposed to be handle by this unit same as the other provisions for the statute Article 7, 8 and 9 is to be implemented by the Unit.

Irregular inspections from the enforcements authorities

Since the outbreak of COVID-19 pandemic, the inspections carried out by the Ministry of the Environment, Nature Protection and Sustainable Development (MINEDEP) and Ministry of Health have been irregular. This was viewed with the interview carried out by the researchers at the different hospitals where the medical personnel opened up that the visit of the inspection teams to their hospitals have been very irregular. This thus undermine proper waste management in Cameroon.

Lack of segregation practices

From the hospitals surveyed, it was noticed only two of the five practiced segregation and these were the Mission hospital and medical center affiliated to the American embassy, the remaining hospital mixed up Category 1 and 2 of biomedical waste haphazardly contamination the entire waste stream. This was the pointed out during the interview with a nurse administrator at Yaoundé Central Hospital:

“The dustbins for segregation are not available, though general dustbins are there. Duty timings are so fixed, that in the morning many staff members are available, whereas in the night nobody [26].”

Poor collection, disposal/ transportation of waste streams

Wastes are improperly collected in the Cameroon’s healthcare service providers. Most at times some hospital personnels assigned to transport the waste go and disposed of it in uncontrolled landfill, these individuals are not found with a traceability manifest as require by the statutory instrument most often the vans for transportation of waste in big hospital are not available, waste is left to rot in these centers for days. This was the revelation of a senior administrator of one of the health centers in partnership with the Central Hospital whom we met during the field work. The latter said:

“Today the situation is that the garbage remains for three continuous days in the same position. It is source of infection and its removal depends on the mercy of the hospital van that has been arranged for transportation of the waste [27].”

Absence of adequate staff training

In the hospitals surveyed, hospital staffs were found lacking in the knowledge of biomedical waste management, there exist a lack of consciousness. From an interview with a lab technician at CMH, the latter said:

“we owe a duty of care to others and many of us are not conscious of that, it is my place to know that I cannot dispose of sharps on the floor because it may

injure the person in charge of cleaningHence it is necessary every personnel to grab consciousness, that we are the one to pay better attention to how we dispose of our waste so it doesn't injure another person [28]"

Awareness of appropriate handling and disposal of health-care wastes among health personnel is lacking; not everyone knows the potential health and environmental hazards mishandling of biomedical waste generates.

Fly tipping and illegal waste dumping

This is a viral state of affairs in the country. With the mushroom growth of small commercial medical care shops that equally generate biomedical waste; they are preoccupied with making money and less concerned of the waste they generate. This is in compilation with clandestine health facilities situated at the extremes of quarters, who equally are engaged in fly tipping and illegal waste dumping. Often this waste is co-disposed with municipal waste where animals, passer-by, children can get injured by its content or provoking a spread of diseases in the country. This was the revelation of personnel of the waste management unit of Central hospital. The following question was posed to her during the interview.

We see waste stock piled right in front of the hospital, what accounts for this?

“The Central Hospital is not the author of this. This is due to the lack of civic sense of some health operators who do not have the willingness to pay for their waste collection and transportation; (a service which the central hospital offers to those centers affiliated to our hospital but do not have incinerators), so they go ahead to engage in night dumping in front of our hospital so we will be accountable for it.”

Lack of citizens' involvement in biomedical waste management

Many citizens in Cameroon care less on the environmental and health challenges associated with the improper disposal of biomedical wastes. This problem stems from the fact that the citizens are not aware that wastes are to be disposed following laid down rules. There are insufficient regulatory texts in this domain. This gives a laissez-faire attitude to health centers when it comes to proper disposal of waste.

GENERAL CONCLUSION

The development and innovations in the field of medical services and research are no doubt a boon to mankind but along with its merits is the negative aspects brought with it like improper disposal of waste. The improper disposal of waste has not only contributed to environmental and health challenges, it has increased government costs in resolving these externalities. The laws relied upon; have not proven efficient enough in engaging responsibility on the part of biomedical waste handlers, due to the discrepancies in interpretation and loopholes therein. In view of this equivocation, it has resulted in a laissez-faire system wherein medical operators tend to dispose of their waste, without regard to if it can cause harm to man or the environment, but for the few who are duty conscious. In view of redressing this situation, the following are firmly recommended.

The primary step in imposing duties to biomedical waste generators and handlers and conserving the right for the population to seek redress thereto; is by coming up with a legal provision that attacks the management of biomedical waste in a holistic manner, this will enable stakeholders to have a rigid legal constraint, to properly manage their waste. This will resolve the challenge of the law 1989 on toxic and hazardous waste, which has not really been stringent in imputing penalties on biomedical waste due to its dual nature. As such in order to bring in a total network of control of the waste generated by Medicare, a good legal drafting should be mounted, it has to be precise and in clear terms, leaving no room for vagueness or varied meaning. The rules must provide accountability and

penalties to habitual offenders. This legal provision should clearly outline the sanction for defaulters so as to call to order medical institutions and individuals in charge with this task, there should be a clause on how to punish those who violate the rule.

To proceed, the implementing instrument has not equally been very helpful. As such the ministries concerned must come up with a regulatory instrument, it has to be comprehensive enough, to include all the steps necessary in the management of waste. For instance, the treatment standard to us which has not been tackled by the ministerial order, how to dispose of the waste, if using an incinerator, it must provide how the incinerator should operate. Also the level of emission should be precise; this has been a real problem because regulatory instrument available has failed to address this point.

Also the 1996 Framework law on the Domain of Health which is currently in course of revision, should endeavor to put an axis solely on biomedical waste management, this will call for an awareness on the different stakeholders that biomedical waste is a growing concern and that appropriate steps and strategies must be adopted for an effective management in different health centers both public and private.

It is suggested that the ministry of Environment should work hand in glove with the ministry of Health so they can better come up with an inclusive document that comprise of all the steps in the management of biomedical waste.

When the comprehensive legal document has been set up, it has to be publicized as widely as possible, making sure that each medical establishment should have knowledge about it, because the reality noticed during the field work is that many establishment lack knowledge of the regulatory instrument in force that is why they tend to handle their waste as they wish.

Following the above, when this is done, equally enforcement authorities should also step up to their duties, by bringing to action whoever, whether public or private establishment right down to clandestine establishment when they fail to comply to regulation. In view of the complexity of biomedical waste, an effecting monitoring organ should be set specifically for biomedical waste management, equipped with the human resource, technical expertise to be able to denote and handle such waste streams, so as to be able to bring offenders to justice when they derail.

Judicial sensitivism should also step up, wherein; there courts should be actively empowered to hear matters arising from mismanagement of biomedical waste as regarding the human environment or human health. This is a fundamental right which can't be gripped away and so far the courts have been sleeping on their competence to hear such claims, this can be due to the fact that there have been the problem of *locus standi* that has been dominant in the area of environmental law, but this challenge has been dealt with of recent, with the introduction of public litigations. As such the courts should be empowered with human resources in handle and resolving complex technological medi-sciences; with assistance of a committee and experts, also the monitoring of the implementation of its own orders. The dynamism if implemented in its true spirit will bring judicial justice, from the judgment book to justice in action.

There's need for training programs on how to better managed biomedical wastes. During the interview with the lab technician at *Centre Medicale Hippodrome* the later mentioned that they got training from SLAMTA, a reputed training center for training health workers in laboratory management, medical waste management amongst others. As such it is recommended that the government should partner with her, to subsidize training programs, so as to have a waste management unit equipped with the required skills.

In addition, it is recommended that the government should set up a center for treatment of biomedical waste, where in institution can pay an affordable fee for medical waste treatment and

disposal. If the above is put in place, a private company, who will solely be in charge of biomedical waste in medical centers, should be hired for waste collection and transportation from the medical centers to the disposal site. This will solve the challenge of poor transportation of waste stream.

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