
EVACUATION AND DISPOSAL OF MEDICAL WASTES IN PUBLIC HEALTH INSTITUTIONS IN OBIO/AKPOR LGA, RIVERS STATE

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ABSTRACT: *This study investigated the Evacuation and disposal of medical wastes in public health care Institutions in Obio/Akpor Local government area of Rivers State. The study employed descriptive cross-sectional survey research design. A sample size of 300 respondents was sampled and used for the study through a simple random sampling technique. Data was collected through a research instrument known as Public Health facilities waste disposal questionnaire (PHFWDQ) designed along Likert 4-Point scale rating. Data was analyzed with mean, Standard deviation and one way analysis of variance (ANOVA). The results of the study showed that the two research questions were accepted as they were above the cut off mean mark of 2.50 (2.92, and 3.16). Further analysis of the results revealed that there is no significant variation in the various methods of disposing medical waste generation across the three levels of health institutions in Obio/Akpor Local government Area of Rivers State; and as well as there is no significant variation on the periodic evacuation and disposal of medical waste generated in Public healthcare facilities among the three levels of health institutions in Obio/Akpor Local Government Area. The study concludes by calling on the management of Public Healthcare Facilities in the area to take the issue of medical waste evacuation and disposal very seriously and as well as recommending that medical waste should be properly classified into general medical waste (GMW) and regulated medical waste (RMW) in order to ensure that the waste is disposed off properly at designated sites.*

KEYWORDS: MEDICAL WASTE, PERIODIC EVACUATION AND DISPOSAL, PUBLIC HEALTHCARE FACILITIES

INTRODUCTION

Healthcare facilities are service providers to sick people. In the course of their service wastes are generated in both liquid and solid forms. These wastes could be toxic and non-toxic. These wastes includes (i) anything that is soaked in blood (gloves, gauze, gowns, etc), (ii) human or animal tissues created during surgical procedures (iii) cultures of infectious diseases/agents (iv) any waste produced in patients room with communicable diseases, and (v) discarded vaccines.

According to Medpro disposal (2018), medical waste "is any kind of waste that contains infectious material (or material that's potentially infectious)". This definition includes waste generated by healthcare facilities like Physician's offices, hospitals, dental practices, laboratories medical research facilities and veterinary clinics. In the view of sharp disposal (2018), medical waste is defined as potentially infectious waste materials generated at healthcare facilities such as hospitals, clinics, physicians office, dental practices, blood banks and veterinary hospital/clinics, as well as medical research facilities and laboratories.

Medical waste does exist in the form of solid, fluid or gas which is produced from different human endeavour. Overo (2010) opines that a portion of the issues confronting our general public i.e urban communities in Nigeria is the transfer of strong (solid) waste which gathers in the urban communities as a result of expanding populace and industrialization. The vast majority of the medical waste produced in the urban communities are essentially strong waste and are dumped either on street side or in open dump with little in regards to its wellbeing and natural ramifications.(Abel, Chukwu-Okeah and Okemini, 2018).

The issue of medical waste emergencies in Nigeria and Obio/Akpor Local government Area specifically is credited to three factors, which to be specific are increment in urban populace, way of life urban dwellers and improper waste handling and wastefulness of the experts to oversee waste management successfully in the urban communities (Ajadike, 2001).

The Israeli's service on solid waste division (2003) yearly report declared that solid waste administration is quite expensive costing the Government large amount of money on its management. Waste differs in creation and this might be affected by numerous variables, for example, culture, abundance and popular. Waste management especially in public Health facilities relies upon the arrangement, molecule estimate, compound creation and the thickness which helps in the transfer, recuperation and waste processing (Lamsisi in Etuk 2010).

Hospital or medical waste is a solid waste produced from hospitals, restorative research centers and nursing homes, dental, veterinary and emergency treatment at homes. The hospital's facility waste is an extremely touchy, fragile and uncommon waste that requires extraordinary consideration and care because of irresistible, dangerous and poisonous nature (Abel, Chukwu- Okeah and Okemini, 2018). Public health facility waste administration is to guarantee that hospitals are perfect and sterile with the goal that illness and contamination don't spread. Public health facility waste is regularly anticipated that would be taken care of uniquely in contrast to the typical solid waste (residential and modern waste).

According to Baveja, Murallidhar and Aggaval (2005), medical waste that is generated in the process of health care delivery includes sharps, human tissues, or body parts and other infectious materials and all these are environmentally unfriendly. Some of the developing nations of the world are quite ignorant of the enormous risks associated with poor handling and management of hospital waste. In the city of Port Harcourt, South-South region of Nigeria where Obi/Akpor Local Government Area is situated, not many people are aware that medical waste contribute substantially to environmental pollution and hazards for waste scavengers, who ravage the sites of hospital waste dumps in search of used clothing to be sold as rags, and other metals, polythene for recycling purposes. Thus enacting the policy of waste to wealth in a highly polluted and hazardous environment that can endanger health of these scavengers and also the health of the final consumers is a serious challenge with high detrimental effects. It is against this foundation that this research tries to assess waste disposal practices of public health care facilities in Obio/Akpor Local Government Area of Rivers State in recent time.

Conceptual Framework: Concept of Medical Waste:

Medical waste has been conceptualized in different ways by various medical personnel. But technically speaking, medical waste is a waste generated in a health care facility. According to Medpro disposal (2018), medical waste "is any kind of waste that contains infectious material (or material that's potentially infectious)". This definition includes waste generated by healthcare facilities and veterinary clinics. In the view of sharp disposal (2018), medical waste is aennueu as potentially infectious waste materials generated at healthcare facilities such as hospitals, clinics, physicians office, dental practices, blood banks and veterinary hospital/clinics, as well as medical

research facilities and laboratories. Examples of medical waste include: (i) anything that is soaked in blood (gloves, gauze, gowns, etc), (ii) human or animal tissues created during procedures (iii) cultures of infectious diseases/agents (iv) any waste produced in patients room with communicable diseases, and (v) discarded vaccines.

The United States Medical Waste tracking Act of 1988 defines medical waste as any solid waste that is generated in the diagnosis, treatment or immunization of human beings or animals, in research pertaining thereto, or in the production or testing biological" this definition includes, but not limited to:

- Blood-soaked bandages
- Discarded surgical instrument
- Culture dishes and other glassware
- Cultures, stocks, swabs used to inoculate cultures
- Discarded needles used to give shots or draw blood (e.g. medical sharps)
- Discarded surgical gloves
- Discarded lancets
- Removed body organs (limbs, tonsils)

Medical waste can contain body fluids like blood or other contaminants. Medical wastes goes by several names that all have the same basic definition. All of the terms listed below refers to waste created during healthcare process that's either contaminated or potentially contaminated by infectious material:

- Medical waste
- Biomedical waste
- Clinical waste
- Biohazardous waste
- Health care waste
- Infectious medical waste
- Regulated medical waste
- General medical waste

The terms are used interchangeably, but there is a distinction between general healthcare waste and hazardous medical waste. The World Health Organization (WHO) categorizes sharps, equipment and animal tissue as "general medical waste". In fact, office paper, sweeping waste and kitchen waste from healthcare facilities is still technically medical waste, though it is not regulated and not hazardous in nature.

General medical waste is the lion's share of medical waste in the facility and is not typically hazardous. On the other hand, Regulated medical waste (RMW), is also known as "Bio-hazardous" waste or infectious medical waste is the portion of the waste stream that may be contaminated by blood, body fluids or other potentially infectious materials thus posing a significant risk of transmitting infection.

Medical waste disposal is one of the biggest day-to-day challenges faced by healthcare providers. It is often complicated by other concerns like epidemiology, potential civil litigation and state and local regulation in the United States of America (USA). In the United States, there are three main methods for disposal of medical waste: on site, Truck service and disposal by mail.

Theoretical Background: Holland's Theory of Man-Environment Relationship

This theory was put forth by Holland (1997) and it was born out of the need to create a balance between man environment relationship owing to the complex nature of the environment and its influence on man as put forth by the environmental determinism school of thought. The idea of the theory building from the works of Parsons (1909) was that man's response is as a result of his relationship with the environment and the psychological influence the environment have on him. In Holland's argument, people go into an environment due to the need they have and the aspiration that such environment can offer them the desired satisfaction they look up to, and as such are willing to remain in the particular environment because of the satisfaction they derive, the opportunities offered

by that environment and the tendency to improve their productive capacity. The theory further explains that if the environment is unable to provide the requirements needed by man for his existence there is the possibility of moving from that environment to another have the capacity to influence man's thinking as well expose him to the theory also suggest that the activities that happen in an environment have the capacity to influence man negatively as it exposes him to the consequences or attending challenges prone to that environment and this have critical implications on man's relationship with other components man in this new found abode alters the already existing equilibrium state of the environment hence the introduction of foreign or alien conditions which reacts with the environment that puts man into a state of devastation hence crying for other forms of life support to elongate his continual existence. Summarily, the theory examines the environmental influences and the subtleties of the Man-Environment interaction that may affect the development, definition, manifestation, and enhancement of strengths.

Aim and Objectives of the study

This study aims to evaluate the disposal of Medical wastes in Public health institutions in Obio/Akpor LGA of Rivers State. To achieve this aim the following objectives are sated:

- i. To investigate the methods evacuating and disposal medical wastes in Public health institutions in Obio/Akpor Local Government Area
- ii. To determine the periodic evacuation and disposal of medical wastes in Public Health institution Obio/Akpor Local Government Area.

Research Questions

The study hopes to answer the following research Questions:

- i. What are the methods used to evacuate and dispose medical wastes in Public health institutions in Obio/Akpor Local Government Area?
- ii. Which period is mostly used to evacuate and dispose medical waste in Public health institutions in Obio/Akpor Local Government Area?

Hypotheses

The following research hypotheses are formulated to guide the study:

1. There is significant variation in the methods used to evacuate and dispose medical waste in public health institutions in Obio/Akpor Local Government Area among the three levels of health institutions.
2. There is significant variation in the periodic evacuation and disposal of medical waste in Public Health institutions in Obio/Akpor Local Government Area among the three levels of health institutions.

Location and Extent

Obio/Akpor lies between latitudes 4° 45' and 4° 60'N and longitudes 6° 50' and 8° 00'E. It is bounded in the East by Oyigbo and Eleme local Government areas, West by Emohua Local Government area, North by Ikwerre and Etche Local Government areas and South by Port Harcourt city Council (PHCC). Obio/Akpor covers about 260 square kilometers, a lowland area with average elevation below 30m above sea level. **Weather , Climate and Vegetation**

The local government areas features a humid tropical climate rainfall is seasonal, variable and heavy and averages 300mm a year; and it last for about seven months (April to October). The amount of rain fall is adequate all year round crop production. The month of September receives the heaviest rainfall. Temperature is high throughout the year and typically averages between 25°C - 28°C. The mean annual temperature is 26°C. December and January are the two hottest and driest month of the year. Relative humidity is high throughout the year about 80% and decreases slightly in the dry season (Salau in Chukwu. Okeah 2012).

The "upland" of the Niger Delta area of which Obio/Akpor is one was originally occupied by rainforest which has been drastically modified by human activities. The area has fresh water forest trees which are the edaphic variants of rainforest. The oil palm, raffia palm, shrubs, lianas, rainforest ferns, floating grasses and the reeds are the typical vegetation of Obio/Akpor.

Social Background

Obio/Akpor Local Government Area was created in 1987, out of Port Harcourt Local Government Area and is principally made up of two clans namely Obio and Akpor.

Obio/Akpor belongs to the Ikwerre ethnic group, the largest in Rivers State. It has a population size of 464, 789 people according to the 2006 National Population Census. OBALGA is made up of diverse people from all parts of the country and other parts of the world residing area. The inhabitants of the area are predominantly civil/public servants, traders, corporate employees, students, business men and women etc. Obio/Akpor LGA is highly urbanized to the extent that the local people (indigenes) are engaged in minor farming activities. The inhabitants of the area are made up of people with low income, medium income and high income earners.

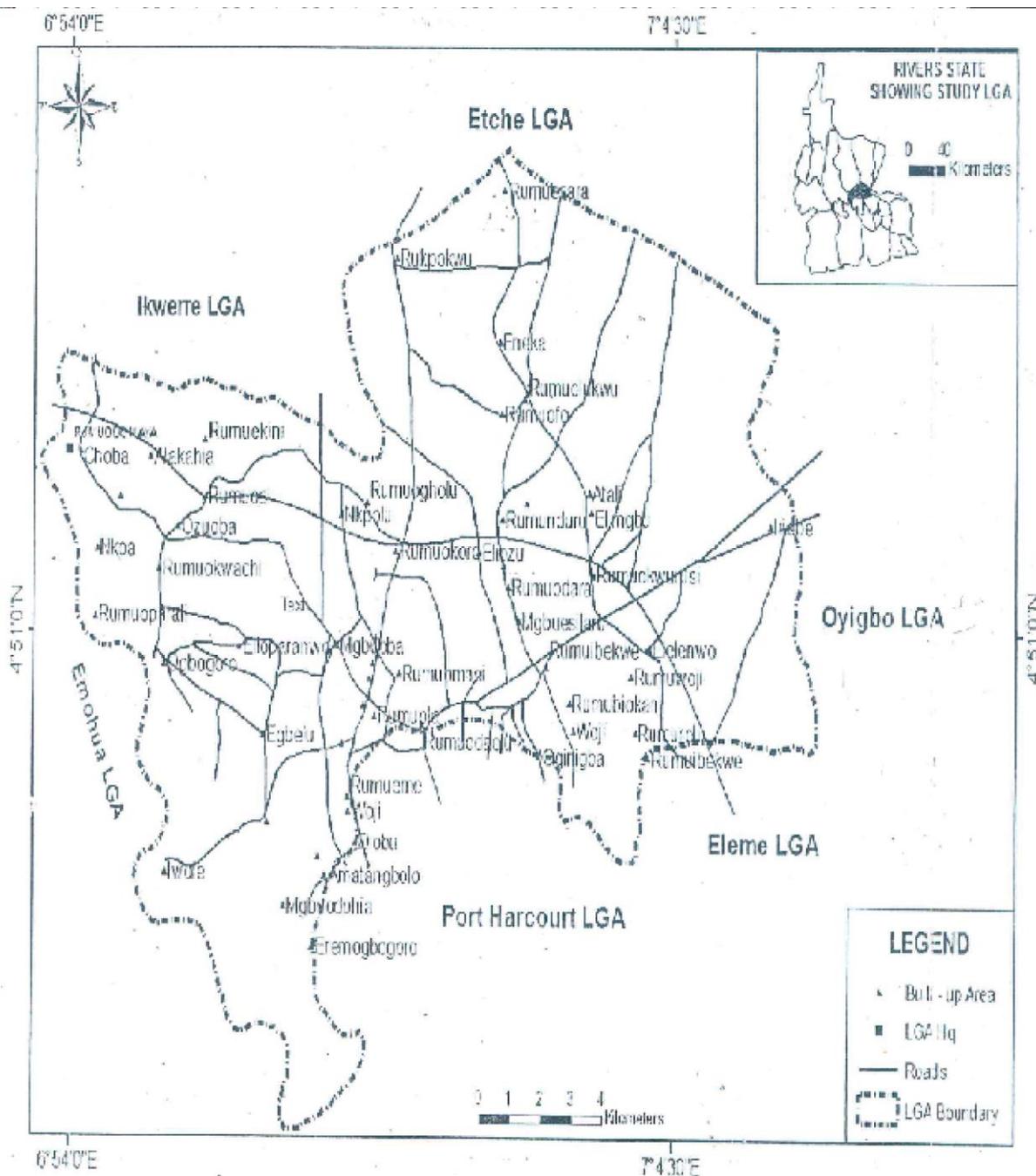


Fig 1: Obio/Akpor L.G.A showing Communities (Source: Rivers State ministry of lands and Housing, 2014).

important in the state because of so many reasons. It boast of two universities (One federal and One state, One Polytechnic, One collage of Health Science and Technology, One school of Nursing, One school of Midwifery, twenty public secondary schools and countless number of private secondary schools, primary and Nursery schools. It host three military bases of the Army in Rumuola (Bori camp), Airforce in Rumuomasi and Navy in Rumuolumeni. **Economic and Social Activities**

In industrial activities, a greater part of the Trans-Amadi Industrial layout and national industrial zone is located in Obio/Akpor Local Government Area. Thus many multi-national

companies, especially in the hydrocarbon industry such as Shell Petroleum Development Company (SPDC), Nigerian Agip Oil company (NAOC), Total Fina Elf, the Schlumberger group, Halliburton Energy Services, Dufil Prima Foods Ltd has their presence in this area. The presence of these companies have provided massive employment services for the people, and have assisted the host communities with their corporate social responsibility programmes aimed towards the development of the area. It also boasts of many commercial centres such as the popular weekly Oil Mill market, Rumuokoro market and periodic Choba market.

The local government area also host a major number of medical institutions such as the University of Port Harcourt Teaching Hospital (UPTH) Military Hospital at Rumuola, Neuro-psychiatry Hospital at Rumuigbo, the Airforce Reference Hospital at Rumuomasi. Obio/Akpor Local government area holds a population of 464,789 (NPC 2006).

METHODOLOGY

Research Design

The term research design as stated by Ojo (2003) is concerned with the restructuring of an investigation for the purpose of identifying the relevant variables and their relationships to one another. The research design that employed in this study is the descriptive cross-sectional survey research design. **Sample and Sampling Technique**

A purposive sample size of 10 respondents will be selected from each of the primary, secondary and tertiary healthcare centres located around the four clans in Obio/Akpor local government area. This means that a sample size of 300 respondents was selected for the study based on simple random sampling technique.

Method of Data Collection and Instrumentation

This study made use of a compound research instrument known as **Public Health Facilities Waste Management Disposal And Practices Questionnaire** (PHFWMDPQ) designed by the researcher consist of two sections in line with the research questions and alongside the Likert-type 4-point scale rating of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD) and weighted 4points, 3points, 2points and 1point respectively. **Method of Data Analysis**

Socio-Demographic Backgrounds of Respondents

S/n	Variable	Category	N	Percentage
1	Sex	Male	195	65.0
		Female	105	35.0
	Total	2	300	100%
2	Marital Status	Single	96	32
		Married	168	56.0
		Widow/widower	18	6.0
		Divorced/Separated	18	6.0
	Total	4	300	100%
3	Age (Years)	20 -29 Years	24	8.0
		30 - 39 Years	110	36.7
		40 - 49 Years	131	43.7
		50 - 59 Years	35	11.7
	Total	4	300	100%
4	Occupation	Health Personnel	189	63
		Non-Health personnel	111	37
	Total	2	300	100%
5	Educational Level	Primary Education Qualification	10	3.3
		Secondary Education Qualification	40	13.3
		Tertiary Educational qualification	200	66.7
		Professional qualification	50	16.7
	Total	4	300	100%

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Source: Authors Fieldwork, (2019)

Table 1 shows responses of the respondents on their socio-demographic backgrounds. It can be seen that 65% of the respondents are male and 35% are female. It can also be seen that majority (56%) of the respondents interviewed are married while 32% are single. Also, respondents in the age bracket of 40-49 years range (43.7%) has the highest percentage while the remaining three age brackets (20-29 years), (30-39 years) and (50-59 years) shared 28.4% among themselves. Respondents in age group 50-59 years had the lowest percentage of 11.7% followed by age 20-29 age range with 8%.

Concurrently, the table shows that majority of the respondents are Health personnel (63%) and non-health professionals accounted for the remaining 37%. The result in the table

This study employed both descriptive and inferential statistics to analyze the data. Simple percentage was used to analyze the socio-demographic characteristics of respondents. The research questions were answered through the use of descriptive statistics of mean and standard deviation. In the analysis of the research question, the mean of the Likert 4point scale rating is 2.50, will form the cutoff mean

mark. Thus any research question mean value of 2.50 and above are accepted while these below this cut off mean mark of 2.50 was rejected. The grand mean value for the combined research question items representing any research question was used to accept or reject the research question. The hypothesis were tested with one way analysis of variance at 0.05 level of significance qualification and is followed by those

respondents with primary educational qualification have lowest percentage of 3.3%.

Research Question 1: What are the methods used to evacuate and dispose medical wastes in Public health institutions in Obio/Akpor Local Government Area?

Table 2 Mean Rating and Standard Deviation on Methods of Disposing medical waste generated in Public healthcare facilities in Obio/Akpor LGA

S/N	Medical Waste Management Disposal Techniques	N	SA	A	D	SD	Mean	SD	Remarks
1	Medical waste generated in public healthcare facilities should be disposed in open pits and sump sites	200	84	128	55	33	2.88	0.94	Accepted
2	Medical waste generated in Public healthcare facilities should be disposed by incineration method	200	90	123	64	23	2.93	0.90	Accepted
3	Medical waste generated in public healthcare facilities should be recycled and raised	200	108	116	37	39	2.98	1.10	Accepted
4	Medical waste generated in public healthcare facilities should be treated with chemicals.	200	111	108	38	43	2.96	1.04	Accepted
5	Medical waste generated in Public healthcare facilities should be disposed off in open water bodies	200	93	105	64	38	2.84	1.10	Accepted
	Grand Mean						2.92	0.60	Accepted

Source: Researcher's Fieldwork (2019) used in disposing medical government area of Rivers State. From the grand mean and standard deviation values 2.92 and 0.60, the results reveal that all the methods identified (recycled and reused, treatment with chemicals, incineration method, open pits/dump sites and open water bodies) were accepted means of disposing medical waste on this local government area.

The responses of the respondents revealed that the major disposal technique that should be used to dispose medical waste generated in Public healthcare facilities is that of recycling and re-using the medical waste (M=2.98, SD=1.00) and is closely followed by that of treating medical waste with chemicals (M=2.96, SD=1.04). The least method of disposing medical waste generated in the area by Public health facilities was disposal in open water bodies (M=2.84, SD=1.00). This open water bodies represents rivers, streams, creeks, and swamps among others.

S/N	Ways of Handling Medical wastes by Public healthcare Facilities	N	SA	A	D	SD	Mean	SD	Remarks
6	Medical waste of Public healthcare facilities should be evacuated and disposed off in a daily basis	200	86	97	77	40	2.76	1.01	Accepted
7	Medical waste of Public healthcare facilities should be evacuated and disposed off twice weekly	200	132	85	37	46	3.01	1.09	Accepted
8	Medical waste of Public healthcare facilities should be evacuated and disposed off once a week	200	129	85	66	20	3.08	0.96	Accepted
9	Medical waste of public healthcare facilities should be evacuated and disposed off every two weeks.	200	112	98	58	32	2.97	1.00	Accepted

10	Medical waste of public healthcare facilities should be evacuated and disposed off once a month	200	62	123	57	58	2.63	1.02	Accepted
	Grand Mean						2.89	0.71	Accepted

Research Question 2: Which period is mostly used to evacuate and dispose medical waste in Public health institutions in Obio/Akpor Local Government Area?

The rationale underlying this research question is to discover the period evacuation and disposal of medical waste generated in Public health care facilities in Obio/Akpor local government area. This research question was answered on the responses on questionnaire items 16, 17, 18, 19 and 20 of the research instrument, and the results are presented in table 3

Table 3: Mean Rating and Standard Deviation on the Periodic Evacuation and disposal of Medical wastes generated in Public Healthcare facilities in Obio/Akpor LGA

Source: Researcher's Fieldwork (2019)

The result in table 3 on the periodic evacuation and disposal of medical wastes by Public healthcare facilities in Obio/Akpor local government are shows that the item statements (16-20) were accepted because their mean scores were above 2.50 cutoff mean mark. Thus the grand mean of 2.98 illustrates that medical wastes are periodically disposed off at different set times. Hence it was accepted, the key period of medical waste evacuation and disposal was that of weekly basis (M=3.08, SD=0.96) and is closely followed by that of bi-weekly basis (M=3.01, SD=1.09). The least was that of monthly basis (M=2.63, SD=1.02).

Hypothesis Testing

Null Hypothesis One (H_{0i}):

Alternate Hypothesis One (H_{1i}):

There is no significant variation in the various methods of disposing medical wastes generated in public healthcare facilities among the three levels of health institutions in Obio/Akpor LGA

There is significant variation in the various methods of disposing medical wastes generated in public healthcare facilities among the three levels of health institutions in Obio/Akpor LGA

Data in table 4 indicated that there is no significant variation in the various methods of disposing medical waste generation across the three levels of health institution in Obio/Akpor local government area of

Table 4: ANOVA showing variations in the methods of disposing medical waste generated among the three levels of health institutions in Obio/Akpor LGA

Various Methods of Disposing Medical Wastes	Sum of Sources	D.F	Mean Square	F	Sig.(P-Value)	Decision
Between groups	.458	2	.229	0.63	0.53	Accepted
Within groups	107.252	297	.361			
Total	107.710	299				

Source: Researcher's Fieldwork (2019)

Rivers State. Thus suggesting that the various methods mentioned (open pits and dump sites, incineration, recycling, chemical treatment and open water bodies) do not vary among themselves across Primary health institution, Secondary health institution and tertiary health institution in the said local government area. This is shown in the F-ratio .634, $df=2$, $p<0.05$. Consequently, the hypothesis was retained.

Null Hypothesis 2 (H0₂): there is no significant variation on the periodic evacuation and disposal of medical waste generated in Public healthcare facilities among the three levels of health institutions in Obio/Akpor LGA

Alternate Hypothesis 2 (H_{a2}) There is significant variation on the periodic evacuation and disposal of medical waste generated in Public healthcare facilities among the three levels of health institutions in Obio/Akpor LGA

Table 5 ANOVA analysis on the variation of periodic evacuation and disposal of medical wastes generated among the three levels of health institutions in Obio/Akpor LGA

Periodic evacuation & Disposal of waste	Sum of Sources	D.F	Mean Square	F	Sig. CP-Value)	Decision
Between groups	1.138	2	.569	1.14	.322	Accepted
Within groups	148.308	297	.499			
Total	149.446	299				

Source: Researcher's Fieldwork (2019)

It can be seen from table 5 that the five periods (daily, weekly, bi-weekly, for-nightly and monthly) of medical waste evacuation and disposal across the three levels of health institutions in the local government area have between groups sum of squares of 1.138, degrees of freedom of 3 and mean squares of .569. Their within groups sum of squares is 148.308 with 297 degrees of freedom and .499 mean square. The total sum of squares is 149.446 and 299 total degrees of freedom. The F is 1.14 that has a P-Value (sig) of .322, since the P-value of 0.322 is greater than the chosen alpha level (.05), the null hypothesis of no significant variation in the statement items of periodic evacuation and disposal of medical wastes is retained; $F(2, 297) = 1.14$, $P>0.05$ is retained. To this end, the null hypothesis is accepted.

DISCUSSION OF FINDINGS

The result of this study concurs with the findings of Ali chaundry, wang and Geng (2017) on a mini review of hospital waste management in developing countries. Ali et al (2017) observed that hospitals in developing countries suffer from poor waste segregation, collection, storage, transportation and disposal practices, which can lead to occupational and environmental risks. Thus the finding of this study concurs with research question 2 which observed that medical waste generated in Public Health Facilities should

be properly classified accordingly, furthermore, this study findings who noted that in developing countries

solid waste has been placed together with the non-clinical waste which is now creating unavoidable.

This results of this study also agrees with the findings of Al Emadi (2011) which observed that hospital wastes in most developing countries are still mixed together with municipal waste in collecting bins of roadsides and disposal dumps. This is an agreement with our research question one which discusses on the various methods of disposing medical wastes generated in Public healthcare facilities in Obio/Akpor Local government area of Rivers State. That medical waste are disposed of in an open pits and dump sites. Thus in comparing with another country, it is observed that in Korea medical waste are often mixed with municipal wastes disposed off in residential waste landfills or improperly generated facilities (Youngchi, Cargo, oh, sub, hwdong, 2006).

CONCLUSION

The services of healthcare providers whether at the Primary, Secondary or tertiary level involves generation of medical waste and medical waste disposal is one of the biggest problems healthcare providers face daily. Therefore the relevance of this study, cannot be overemphasized. The findings of this study substantiate the fact that medical waste is hazardous and dangerous in nature and disposing it must be done thoroughly in order to safeguard the handlers and the environment. The study is of the view that medical wastes disposal should be taken seriously by the management of healthcare providers and should not be disposed off in the same place with municipal solid waste (MSW). To this end, all necessary measures must be made by both the local government authority and the state government to ensure that medical wastes are properly disposed off in the state. Thus policies, programmes and plans must be put in place for this to be achieved. This is because public healthcare facility waste administration should be to guarantee that hospitals are in perfect shape and strive with the goal that illness and contamination do not spread around the hospital and its environment.

It is imperative for the stakeholders in the health sector to advance the importance of taking medical waste disposal seriously at all level of healthcare institutions. Thus there ought to be a coordinated effort by all and sundry to put all hands on deck to have a guarantee on safe medical waste disposal strategy and general healthcare facilities waste administration.

Thus this research has examined, methods of disposing and periodic evacuation of medical wastes across the three levels of public health institution in Obio/Akpor local government area of Rivers State.

RECOMMENDATIONS

Based on the results of this study, the following recommendation were made:

- The public healthcare institutions in Obio/Akpor local government area should adopt and follow the best international practice of classifying medical waste into general medical waste (GMW) and regulated medical waste (RMW) in order to ensure safe disposal of medical waste.
- There is need for the management of public health institutions in the local government area to educate and train those responsible for disposing medical waste. This is because; medical waste is not like solid municipal waste that any person can engage its evacuation and disposal.
- There is need of the state government to encourage the private sector to be involved in commercial evacuation and disposal of medical wastes from hospitals, as it is obtained in advanced nations of the world, where specialized equipment and trucks are used and disposed off at on-site treatment facility.
- The public healthcare facilities in the area should endeavour to come up with a written document policy on medical waste generation and disposal for proper guidance and compliance. This will form one of the ways the management of these public healthcare facilities will be serious about medical waste disposal.

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