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**Assessment of the Effectiveness of Healthcare Waste
Management Practices in Major Town of Niger State,
Nigeria.**



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Assessment of the Effectiveness of Healthcare Waste Management Practices in Major Town of Niger State, Nigeria.

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Abstract:

Purpose: The study was to examine the healthcare waste management practices in Niger State, Nigeria, with a view of promoting the quality of environment. The study has the following objectives: Determine the factors which influenced healthcare waste management practices in Niger State, assess the problems hindering the provision of adequate healthcare waste management practices, examine the physical planning implications on their sustainability, and examine the existing waste-management practices vis-a-vis of GHG emissions mitigation mechanism.

Methodology: A questionnaires survey was carried out on the one hundred and fifty (150) respondents who were workers in the health facilities selected for the study for proper assessment of healthcare waste management of the hospitals. There was an interview of the various heads of departments of the hospitals' administration to obtain accurate information on the management of the healthcare waste.

Findings: The study found that the health facilities do not have records of the volume of waste which they generate. The medical wastes generated range from 0.116 to 0.561 kg/bed/day, but there is no standard gauge for measuring waste collected in Niger state. Thus, the average generation rate is approximately 0.181 kg/bed/day. What the study classified as general waste was found to be common among the health facilities in the study area. About 66.4% of the respondents ascertained this type of waste which constituted of paper, food and plastic.

Unique Contribution to Theory, Policy and Practice: Policies and monitoring mechanisms should be generated and coordinated at the federal and State levels and including Local Governments Areas (LGA) and Health facilities levels.

Keywords: *Healthcare Waste Management practices, Environmental Hazard, Physical planning and Sustainability.*

I. Introduction

Global waste crises, among other environmental issues, confronting mankind in both developed and developing countries threatens both the assimilative and carrying capacity of the earth which supports life system. This modern world functions as a throw – way society and the price for that is a growing problem on how to handle the waste that is generated as precious spaces for its disposal is decreasing. It continues to be a major challenge, particularly, in most healthcare facilities of the developing countries where it is hampered by technological, economic, social difficulties and inadequate training of staff responsible for handling of the waste. Poor conduct and inappropriate management and disposal methods exercised during handling and disposal of medical waste (MW) is increasing significant health hazards and environmental pollution/hazards due to the infectious nature and unpleasant smell of the waste.

Health-care activities generate significant amounts of hazardous waste such as mercury and expired pharmaceuticals, as well as large amounts of general waste. As a matter of fact, the management of health-care waste is an integral part of a national health-care system. A holistic approach to health-care waste management should include a clear delineation of responsibilities, occupational health and safety programs, waste minimization and segregation, development, adoption of safe and environmentally sound technologies, and capacity building.

Recognizing the urgency of this problem, a growing number of countries have taken initial steps to respond to this need. These include the establishment of regulatory frameworks, development of national plans and the demonstration of innovative approaches. However, funding of health-care waste management remains very inadequate.



Figure 1: Medical Waste Dump at General Hospital Minna Waste Dump site for Specialist Hospital Gwagwalada

The population of Niger State is on the increase and the amount of hospital waste generated is snowballing at alarming rates due to growth of population and healthcare facilities. However, there are some problems encountered with the management of MW and they are- improper storage, frequent dumping of infectious waste with municipal waste, no uniform definition and identification of hazardous waste and low level of awareness about the management of medical waste.

In order to maintain a clean Municipal environment, HCW must be effectively managed through appropriate reduction, reuse and/or recycled practices [8] Waste management generally involves the collection, transfer, treatment, recycling, resources recovery and disposal of waste in any location. The goals of waste management are therefore, to promote a quality environment, generate employment, and thus, support the efficiency and productivity of the economy.

[10] observed that, the quantity of waste generated in urban areas in industrialized countries is higher than in developing countries, still municipal solid waste management remains inadequate in the latter. Also, waste in developing countries differs from developed countries. Most developing countries, example Nigeria, would therefore have waste management problems different from those found in developed countries in areas of composition, density, political and economic framework, waste amount, access to waste for collection, awareness and attitude. [11] Also reported that, waste in developing countries is generally heavier, wetter and more corrosive.

I Aims and objectives of study

The Aims of this study are therefore, to promote a quality environment, generate employment, and thus, support the efficiency and productivity of the economy.

In order to achieve these goals, the following objectives set out for the study are to: -

- i. Determine the factors that influence healthcare waste management practices in Niger State.
- ii. Assess the problems hindering the provision of adequate healthcare waste management practices,
- iii. Examine the existing waste-management practices and to provide effective disposal and mitigation of GHG emissions.
- iv. Examine the physical planning implications on their sustainability

II Statement of the research problem

Healthcare waste management involves the collection, transportation, storage, treatment and care of disposal sites. It is very alarming today, considering the nature and composition of waste generated, only little attention is given to proper treatment and care of the wastes. The volume of waste being generated continues to increase at a faster rate than the ability of the agencies to improve on the financial and technical resources needed to parallel this growth. Waste management in Nigeria is generally characterized by inefficient collection methods, insufficient coverage of the collection system and improper disposal of waste materials [9]

Municipal solid wastes that do not contain valuables' and often re – usable materials (such as glass, paper, plastics and food remains) but also contain increasing amount of hazardous substances [12] Typical of the latter is mercury from batteries, cadmium from fluorescent tubes, pesticides and bleaches as well as wide range of toxic chemicals such as solvents, paints, disinfectants and wood preservations, chemicals.

III. The Study Area

Niger State lies between the latitude of 3°20' east and longitude 8 and 11.3' north. It is bordered to the North by Sokoto State, West by Kebbi State, South by Kogi and South-West by Kwara State. Kaduna and Federal Capital Territory border the State to both North-East and South-East respectively. The State has a common boundary with the Republic of Benin along New Bussa, Agwara and Wushishi Local Government Area. This has given rise to common inter border trade between the two countries. As at 26th August 1991 (before the merger of Borgu and Agwara LGAs), the State covered a land area of 74,244 square Kilometers, which is about 8% of the total

land area of Nigeria.



IV Justification; -

The need to generate baseline data from this study in order to enhance proper healthcare waste management practice and environmental evaluation constitute one of the justifications for this study. Also, the need to contribute to existing knowledge on medical healthcare waste management practices in other parts of the world also justifies the present study. Moreover, the death of data on medical waste management practice in the study area makes this research imperative. Finally, the outcome of the study could be beneficial to people thereby enhancing their economic status.

V. Methodology

This evaluation of the status of Health care waste management (HCWM) includes interview, observations, Sampling and Data collection of all available information on issues associated with waste management in Niger State.

Five Hundred (500) questionnaires survey was carried out of which only One Hundred and Fifty (150) respondents who were workers in the health facilities selected for the study responded for proper assessment on healthcare waste management of the hospitals, there was an interview of the various heads of Departments of the hospitals administration to obtain accurate information on the management of the healthcare waste.

VI. Results and Discussion

The respondents in the various facilities had adequate knowledge of waste categorization. About 76.67 % of the respondents rightly categorized paper, food, plastics and bottles as general waste. Soiled cotton wool, swab and Surgical gloves and cultures were also classified by 76.67 % of the respondents as infectious wastes. The majority of respondents also got it right by classifying Chemical (Medical and industrial) old drugs and sharps (Needles, scalpels, lancets etc.) as Hazardous wastes. There was a significant association ($p < 0.05$) between the profession of the respondents and categorization of General wastes. However, there were no significant differences ($p > 0.05$) between socio-demographic variables and categorization of Hazardous waste. The respondents in the various facilities had adequate knowledge of waste categorization as 83.33%

perceived all of the above in table 28 above. 62 % indicated that segregation should be done at the source, as against 24.67 % who indicated otherwise. There was satisfactory knowledge of colour coding of wastes which is an essential factor for proper segregation of waste.

- i. The study found that the health facilities do not have records of the volume of waste which they generate. The medical wastes generated range from 0.116 to 0.561 kg/bed/day, but there is no standard gauge for measuring waste collected in Niger state. Thus, the average generation rate is approximately 0.181 kg/bed/day.
- ii. What the study classified as general waste was found to be common among the health facilities in the study area. About 66.4% of the respondents ascertained this type of waste which constituted of paper, food and plastic
- iii. It was found from the study that it is always important to segregate medical waste in the hospital and other medical institution facilities. About 57.27% of the respondent agreed that medical waste should be segregated.
- iv. It was observed that waste management in hospitals and other health care facilities had safety boxes and containers where all sharp objects and used syringes were deposited. About 66.4% of the respondents ascertain Needles, Scalpels, Syringes as sharp waste in the study area.
- v. It was found from the study to be common among the health facilities that people should be sensitized about the importance of recycling of sensitive hospital wastes. About 58(52.73%) of the respondent agreed to possible solutions to prevent land pollution by sensitizing people about Recycling of sensitive hospital wastes.
- vi. It was also observed that people were aware of Government campaign about waste management practices in the study areas. About 65(59.09%) of the respondents Agreed that Government is campaigning about waste management practices in the study areas.
- vii. It was found that facilities for the movement waste from health facilities to the dump site are available as the respondents in the study area all agreed to it. About 60(54.55%) of the respondents agreed that there are facilities available for the movement of waste from health facilities to the dump site.

Conclusion

After evaluating the various researches relating to assessment of effective healthcare waste management practices by various authors, the following conclusions were drawn:

- i. These problems have been compounded by many factors including in – appropriate planning for waste management particularly waste collection, waste storage, waste disposal, population growth and rapid technological development
- ii. There is Poor conduct and inappropriate management and disposal methods exercised during handling and disposal of medical waste.

- iii. Policies and regulations as stipulated by World Health Organization (W H O) are not strictly adhere to. These major components of inputs to healthcare waste management guide must be fully available and properly implemented for achievement of sustainability.
- iv. Existing policies on healthcare waste management must be seen to be implemented fully and adoption of effective health practices that will ensure that those principles are observed.
- v. Despite the fact that current medical waste management (MWM) practices vary from hospital to hospital, the problematic areas are similar for all healthcare units and at all stages of management.

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