

# The Knowledge and Awareness Level in Handling bio-Medical Waste Amongst Health Personnel in Cottage Hospital, Akpet, Cross River State Nigeria

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## ABSTRACT

*Bio- medical waste is "any waste, which is generated during the diagnosis, treatment or immunization of human beings or animals or in research activities pertaining there to or in the production and testing of biological and including categories mentioned in schedule 1 of the Rule, in the bio-medical waste". Medical system and health care is a sensitive field and area which need more carefulness in handling client and staff safety and care, today there is increasing rate of hospital acquired infection and niddle stick infection especially amongst staff and long duration in patient, the waste generated from medical activities that is responsible for this problem . The Improper management of waste materials generated in health care facilities and bio medical laboratories causes a direct health impact on the health care workers, client, community health and environment at large, so proper management prior to its final disposal is very important. The article deals with the knowledge and awareness level in handling biomedical waste in accordance with the schedule and categories.*

*Biomedical waste management today is giving greater attention following the recent regulation the Biomedical Wastes (Management and Handling) Rules, 1998. Inadequate and improper management of biomedical waste can be associated with high risks and hazardous effect to healthcare workers, patients, communities and their environment therefore the quantities and proportions of different constituents of wastes, their handling, treatment and disposal methods is very important in health -care settings. And these details will be discussed in the full paper. For proper handling of bio-medical waste the development of waste management policies, plans, and SOP are recommended, in addition to establishing training programs on proper waste management for all healthcare workers in the state.*

**Keywords:** Biomedical, Handling, Standard Operating Procedure (SOP), Waste

## 1. INTRODUCTION

Bio- medical waste is "any waste, which is generated during the diagnosis, treatment or immunization of human beings or animals or in research activities pertaining there to or in the

production and testing of biological and including categories mentioned in schedule 1 of the Rule, in the bio-medical waste”.[11]

Medical system and health care is a sensitive field and area which need more carefulness in handling client and staff safety and care, today there is increasing rate of hospital acquired infection and niddle stick infection especially amongst staff and long duration in patient, the waste generated from medical activities that is responsible for this problem . The Improper management of waste materials generated in health care facilities and bio medical laboratories causes a direct health impact on the health care workers, client, community health and environment at large, so proper management prior to its final disposal is very important. The article deals with the knowledge and awareness level in handling biomedical waste in accordance with the schedule and categories. [9,8]

## **2. SCENERIO**

Biomedical waste management today is giving greater attention following the recent regulation the Biomedical Wastes (Management and Handling) Rules, 1998. Inadequate and improper management of biomedical waste can be associated with high risks and hazardous effect to healthcare workers, patients, communities and their environment therefore the quantities and proportions of different constituents of wastes, their handling, treatment and disposal methods is very important in health -care settings.[8,1]

Before the disposal of this waste there must be treated first with hypochlorite solution, then properly separated according to infective and non-infective materials and stored or collected according with the categories following the colour and properly labeled. Finally during transportation for disposal no material or waste should be allowed to fall along the way to avoid public hazard.[2,10]


## **3. SCHEDULE OF BIO-MEDICAL WASTE MANAGEMENT**

It is a necessity to take all steps to ensure that waste is handled without any adverse effect to human health & the environment and by doing this you must install an appropriate facility to ensure requisite treatment of waste in accordance with Schedule – I which is the treatment of the waste and in compliance with standards prescribed in Schedule – V, Ensure proper segregation of waste into containers/ bags at the point of generation in accordance with Schedule – II waste segregation, Ensure proper labeling of containers/bags according to Schedule - III labeling colours containers and IV proper transportation, [5,3]

Maintain Records about generation, collection, storage, treatment & disposal of wastes, All records are subject to inspection & verification by SPCB at any time Any person aggrieved by an order made by SPCB under these Rules may prefer an appeal in Form V within 30 days to the Appellate Authority.[4,9]

### **Schedule-I: CATEGORIES OF BIO-MEDICAL WASTE**


**Table 1**

 <b>BIOHAZARD</b> <b>OPTION</b>	<b>WASTE CATEGORY</b>	<b>TREATMENT &amp; DISPOSAL</b>
Category No. 1	Human Anatomical Waste (human tissues, organs, body parts)	incineration /deep burial
Category No. 2	Animal Waste (animal tissues, organs, body parts carcasses, bleeding parts, fluid, blood and experimental animals used in research, waste generated by veterinary hospitals, colleges, discharge from hospitals, animal houses)	incineration/deep burial
Category No. 3	Microbiology & Biotechnology Waste (Wastes from laboratory cultures, stocks or micro-organisms live or vaccines, human and animal cell culture used in research and infectious agents from research and industrial laboratories, wastes from production of biologicals, toxins, dishes and devices used for transfer of cultures)	local autoclaving/micro-waving/incineration
Category No. 4	Waste Sharps (needles, syringes, scalpels, blade, glass, etc. that may cause puncture and cuts. This includes both used and unused sharps)	disinfection and mutilation/shredding (chemical treatment /autoclaving /microwaving)
Category No. 5	Discarded Medicines and Cytotoxic drugs (Waste comprising of outdated, contaminated and discarded medicines)	incineration/destruction and drugs disposal in secured land fills

**Schedule-I**

**CATEGORIES OF BIO-MEDICAL WASTE**

**Table 2**

 <b>BIOHAZARD</b> <b>OPTION</b>	<b>WASTE CATEGORY</b>	<b>TREATMENT &amp; DISPOSAL</b>
Category No. 6	Soiled Waste (items contaminated with blood, and body fluids including cotton, dressings, soiled plaster casts, lines, bedding, other material contaminated with blood)	Incineration/autoclaving/microwaving
Category No. 7	Solid Waste (Waste generated from disposal items other than the sharps such a tubing's, catheters, intravenous sets etc.)	disinfection by chemical treatment autoclaving/microwaving and mutilation/shredding
Category No. 8	Liquid Waste (Waste generated from laboratory and washing, cleaning, housekeeping and disinfecting activities)	disinfection by and discharge into drains
Category No. 9	Incineration Ash Ash from incineration of any bio-medical waste)	disposal in municipal landfill
Category No. 10	Chemical Waste (Chemicals used in production of biologicals, chemicals used in production of biologicals, chemicals used in disinfection, as insecticides, etc.)	chemical treatment and discharge into drains for liquids and secured landfill for solids

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Above tables 1&2 illustrate the proper practice in accordance with the BWM LAW of EPA 1986 but in cottage hospital and Nigeria at large this policy has not been enacted and is not under practice thus posing a high level of risk to the environment.

#### **4. THE BAD PRACTICES ADOPTED IN BWM IN COTTAGE HOSPITAL**

- All waste generated from the hospital are stored in one (1) container
- Waste are never treated with hypochlorite solution
- Nipples are not shredded and separated from the tubing's
- Infective and non-infective waste not separated
- Containers not coloured and labeled
- No incineration is done all waste are discarded in open pit not buried

#### **5. CHALLENGES OF BIO MEDICAL WASTE MANAGEMENT DUE TO POOR KNOWLEDGE AND AWARENESS IN NIGERIA**

- Occupational risk, Lack of will and lack of awareness, Bio-medical waste gets mixed with other Municipal Solid Waste most times.
- Improper management & handling of waste, Risk to the staff and patient, dumping of waste in municipality collecting bin
- Adverse impact to public Health & Environment here comes the role of Government of India - 1998 biomedical waste management and handling rules under EPA 1986 by Ministry of Env. and Forest
- Staff was ignorant on all the practice counts. [5,6,7]

#### **6. RECOMMENDATION**

- There is need for the government of Nigeria To promote proper handling of BWM by putting documents in place to monitor and re-enforce it
- The development of waste management policies, plans,
- Standard Operating Procedure (SOP's) in all institutes
- Establishing in service training programs on proper waste management for all health care workers
- And a board to manage and run the affairs.[3]

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