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Research Article

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Chlorinated plastic biomedical waste management in hospitals

Dr.V.Kalarani

MD, Assistant Professor, Dept. Hospital Administration, ACSRGGH, Nellore, SPSR Nellore District, Andhra Pradesh.

***Corresponding author: Dr.V.Kalarani**

ABSTRACT

Under supervision of Indian Ministry of Environment and Forests, it has been framed a stringent the procedure for the management of bio-medical waste generated in our country. In this study we have focused on the usage of plastic gloves and bags in few hospitals, as it is definitely a serious cause of concern that potentially in high proportion materials (PVC) from the hospitals. Irrespective of other biomedical wastes such as bandage clothes, syringes, infectious materials, etc., PVC generated gloves and bags are of the primordial importance. It has been emphasized by the Government of India to phase out the usage of chlorinated polybags and gloves promptly; hence the chance of getting of this kind of materials are massive in clinical set up. For this reason only, a remarkable attention has been paid on the pattern of PVC originate material and its waste management strategy in few hospitals has been debated.

Keywords: Chlorinated PVC, Government stringency, Quantity and pattern of disposal.

INTRODUCTION

On an average the quantum of waste generated in India is estimated to be 1-2 kg per bed per day in a hospital and 600 gm per day per bed in a clinic. 85% of the hospital waste is non-hazardous, 15% is infectious/hazardous. Mixing of hazardous results in to contamination and makes the entire waste hazardous. Hence there is necessity to segregate and treat. Improper disposal increases risk of infection; encourages recycling of prohibited disposables and disposed drugs; and develops resistant microorganisms [1, 2].

METHODOLOGY

Aspect survey audit form is prepared which is used to collect the essential in progression related to hospital waste. Hospital wise waste compilation data is obtained. Data collection has been made by making presence personally to main hospitals in the city. Relationship is established with the kind of hospital and the quantity of waste generated, using this quantification of hospital waste is done. Current hospital waste organization by the hospital and districts management is studied. An effort is made to propose the paramount management practice which can utilized in hospitals as well as by a district administration. An Incinerator facility will be

designed for the amount estimated throughout the analysis for major hospitals which generates more extent of hospital waste [3]. Promising alternatives are explored for the recycling of hospital waste which will help to diminish the amount of generation of hospital ravage.

Government standpoint on waste management

Underlining the effort to protect the environment and human health from infectious bio-medical waste under Union Ministry for Environment, Forest and Climate Change, Bio-Medical Waste Management Rules, 2016 Rules have been amended to improve compliance and strengthen the implementation of environmentally sound management of biomedical waste in India. It has been pointed out that the

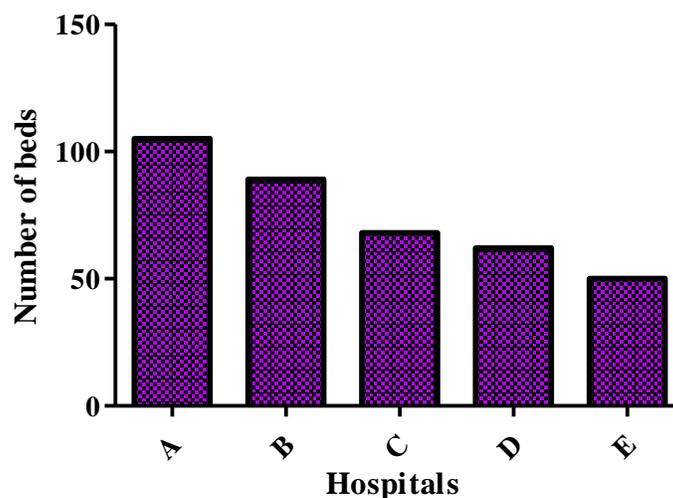
amended rules stipulate that generators of bio-medical waste such as hospitals, nursing homes, clinics, and dispensaries etc will not use chlorinated plastic bags and gloves beyond March 27, 2019 in medical applications to save the environment. The Ministry added that Blood bags have been exempted for phase-out, as per the amended BMW rules, 2018.

SAMPLING AND DATA COLLECTION

The general survey of the operating procedures practiced in the handling, treatment and disposal of medical waste was carried out in hospitals present in the city with the capacity to handle simple to fairly complicated health problems [4, 5].

Hospitals	Type of hospital	Number of beds
A	Private	105
B	Private	89
C	Private	68
D	Private	62
E	Private	50
Total	5	374

Hospitals and number of beds



Segregation of waste

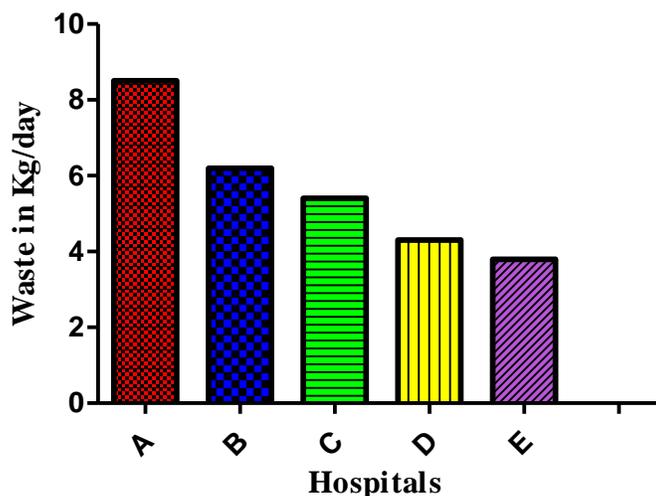
Although various wastes are accountable and considered to be harmful, which are generated from the hospitals, the rate of PVC originated materials are

of prime importance as, these wastes have the potential for non biodegradability and other related causes to the eco system as well.

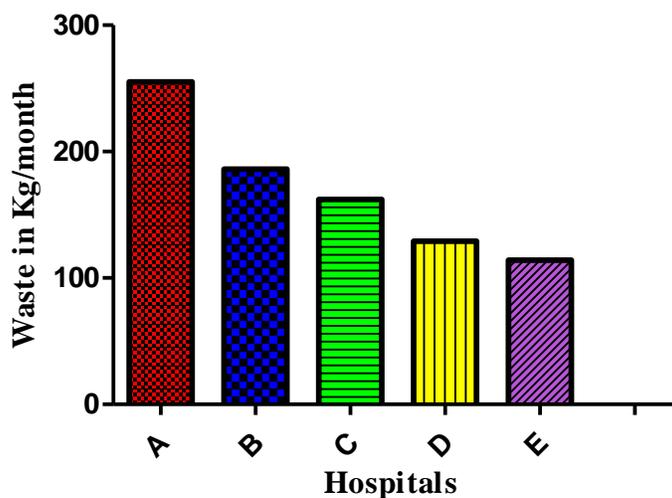
Details of waste generated from the hospitals

Hospitals	Nature of waste	Average Waste in Kg/day	Average wastes in an month (kg/Month)	Average wastes in an month (kg/year)
A		8.5	255	3060
B	PVC related	6.2	186	2232
C	Wastes	5.4	162	1944
D		4.3	129	1548
E		3.8	114	1368
Total		28.2	846	10152

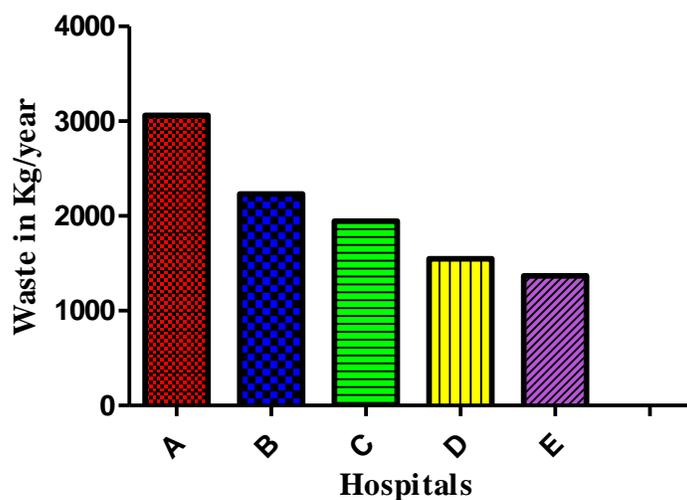
Average wastes per day in kilograms



Average wastes per month in kilograms



Average wastes per year in kilograms



From the above study the quantity of chlorinated PVC generated waste has been in the upfront as compared the other wastes in the clinical and hospitals set up.

CONCLUSION

In this context, the management of biomedical wastes especially of chlorinated PVC materials in the health sector has been on focus, as implemented by

the government of India in recent times. For this reason only, the effective management of PVC related waste management is very essential, as the proportion of this kind of waste is comparatively high. In order to step out and facilitate the positive ecosystem the usage of chlorinated polybags and gloves are already at the emphasized as a global initiative.

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