BMW Management

A STUDY ON THE EFFECTIVENESS OF CORRECTIVE ACTIONS TAKEN BY THUMBAY HOSPITAL, FUJAIRAH, UAE, FOR THE BIOMEDICAL WASTE MANAGEMENT PROCESS POST-APR 19 TO APR 23

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TITLE

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INTRODUCTION

Biomedical waste (BMW) is defined as any waste generated when patient care activities are carried out in a health - care setting, which has the potential to cause harm to human beings and the environment. It is also known as clinical waste, medical waste, and healthcare waste.

- In the United States, the Environmental Protection Agency (EPA) regulates biomedical waste management, and each state has its own regulations.
- In India, the Biomedical Waste Management (BMW) Rules of 2016 have been implemented for the safe and effective management of biomedical waste.
- In the United Kingdom, the National Health Service (NHS) has guidelines for the management of healthcare waste.

LITERATURE REVIEW

1. Biomedical waste management in a Large teaching hospital.

A study was conducted at a 600 bedded teaching hospital (Sher-I-Kashmir Institute of Medical Sciences, Srinagar) to determine the quantity of waste generated and the methods of disposal. A **survey of the various hospital areas was done** to study the process of collection, segregation, storage, transportation, treatment, and disposal of hospital waste. Through **personal observations,** the area-wise generation of waste from inpatients, Accident & Emergency, Operation Theatre, OPD, Laboratories, Kitchen, CSSD, and Pharmacy was recorded. SKIMS generates 2.02 Kg per bed per day. Though waste management practice in this hospital is better than other hospitals in the state, yet, all the waste management activities like collection, segregation, transportation, treatment, and disposal need to be done on a scientific basis. Segregation should start at the source of generation, containers of recommended colors should be used for different types of waste.

RESEARCH QUESTION

Has there been any change in the overall quantity of biomedical waste generation due to corrective measures taken by Thumbay Hospital, Fujairah between April - 19, to April - 23?

AIM

The aim of this study is to compare the biomedical waste generation in Thumbay Hospital, Fujairah, between April - 19 and April - 23, and to know the effect of the corrective measures implemented post-April - 19 for biomedical waste management.

OBJECTIVES

1. To compare the Biomedical Waste Generation in the hospital between Apr - 19 and Apr - 23.
2. To know the effect of the corrective measures which were taken post-Apr - 19 by Thumbay Hospital, Fujairah for Biomedical Waste Management.

METHODOLOGY

- **Study Design –** A cross-sectional comparative study.

1. The study is based on the information provided on the Internet, Journals & Magazines, and from the hospital records.
2. The interaction with the staff who are related to this research.

- **Study Area -** Thumbay Hospital, Fujairah UAE
- **Study period -** 2 months
- **Type of data:**

Secondary data.

- **Data Analysis Tool:** Ms. Excel.

JCI RULES

As per the JCI standards, hospitals need to follow the following rules for biomedical waste management:

- Develop and implement a **biomedical waste management plan** that is in compliance with international, national, and local regulations and guidelines.
- **Establish a system** to segregate, collect, store, transport, and dispose of biomedical waste safely and effectively.
- Provide **appropriate training** to healthcare workers and support staff on the proper handling and disposal of biomedical waste.
- Ensure that the biomedical waste management system is **regularly monitored and reviewed** to ensure compliance with regulations and guidelines.
- **Establish procedures** for emergency response and spill management related to biomedical waste.
- **Maintain detailed records** of the biomedical waste management system, including waste generated, transporter details, and disposal method.
- **Implement a waste reduction plan** to minimize the amount of waste generated. These rules are designed to ensure the safe and effective management of biomedical waste within hospitals, which helps to protect the environment and public health.

BMW Management Process In THF

BMW Generation & Segregation at Source	BMW Collection & Weighing	BMW Storage in Hospital before Disposal	Disposal
BMW Generated is segregated at the point of generation by the staff of the respective departments as per color codes.	segregated waste is collected by the Housekeeping staff and weight is measured in the presence of the staff nurse of the respective department's Nurse in charge/staff nurse makes the note of weight in the compliance sheet.	Housekeeping staff collects the waste in the same color-coded bags as per source segregation and stores them in the BMW room/compartments.	Municipality picks up the waste on every Tuesday and Friday

Corrective Actions/Measures In The Process

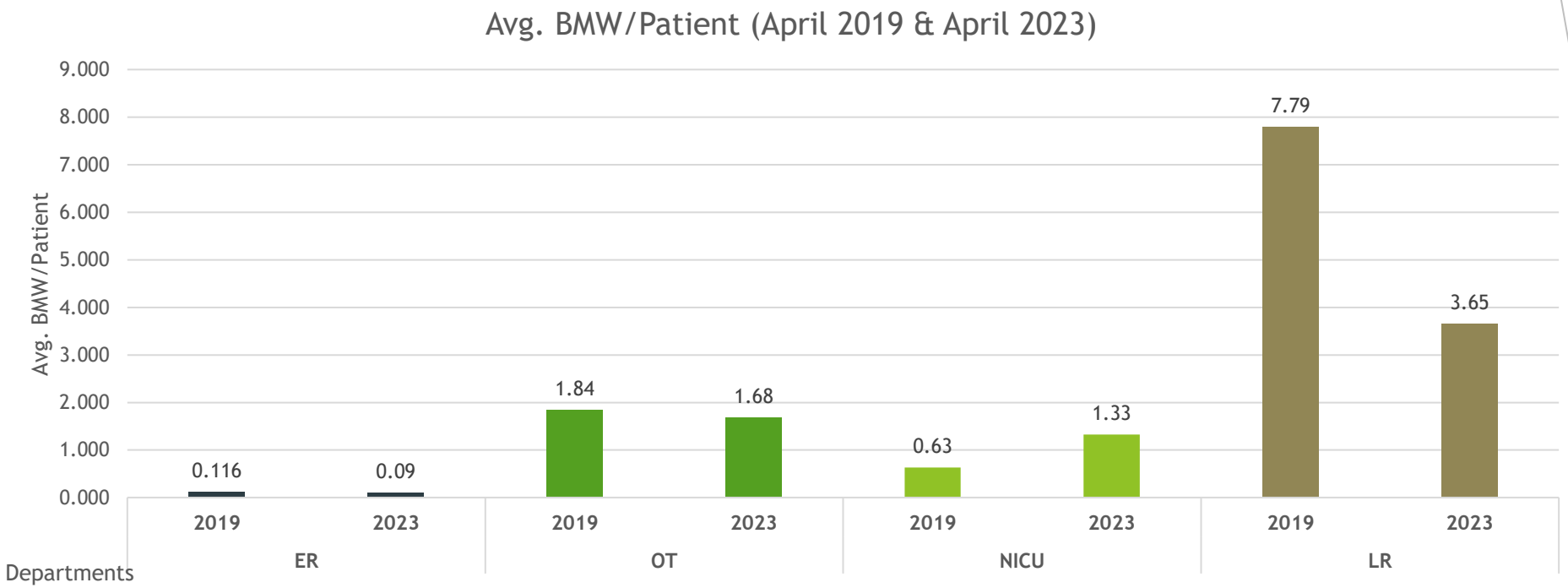
- Ensure the only required places Yellow bins are placed.
- Separating waste collection bags for Bottles (White bags).
- Daily Rounds from ICN to check compliance.
- Training for Nurses on materials that have to be discarded in yellow bag.
- Training for HK staffs on waste segregation and labeling the yellow bag with location and weight.

Waste Generation April - 19 v/s April - 23

April	ER		OT		NICU		LR	
	2019	2023	2019	2023	2019	2023	2019	2023
Total BMW	370.6	296.26	209.7	134.25	12	22.55	109	40.15
Total Patients	3201	3121	114	80	19	17	14	11
Average BMW per patient	0.116	0.09	1.84	1.68	0.63	1.33	7.79	3.65
Average BMW per Day	12.35	9.88	6.99	4.475	0.40	0.75	3.63	1.34

	ER	OT	NICU	LR
Diff. Total BMW/Month	-74.34	-75.45	10.55	-68.85

Waste Generation April - 19 v/s April - 23



Interpretation :

- The Bar Graph depicts that, the waste generation in LR is decreased to 3.65 kg/patient from 7.79 kg/patient which is a 53.14% reduction.
- In NICU, waste generation is increased to 1.33kg/patient from 0.63 kg/patient which is an increase of 111.11%.

RESULTS

- This study aimed to compare biomedical waste generation in Thumbay Hospital, Fujairah between April - 19 and April - 23, and evaluate the effectiveness of corrective measures implemented post April - 19 for biomedical waste management. The analysis revealed interesting findings regarding waste generation in different areas of the hospital.

- Firstly, in the Labor Room, there was a notable reduction in waste generation from 7.79 kg per patient on April - 19 to 3.65 kg per patient in April - 2023, representing a significant 53.14% decrease. This reduction suggests that the corrective measures implemented by the hospital have effectively improved waste management practices in this area.

- However, in the Neonatal Intensive Care Unit (NICU), there was an unexpected increase in waste generation from 0.63 kg per patient on April - 19 to 1.33 kg per patient on April - 23, indicating a significant 111.11% increase. Moreover, the analysis identified a significant increase of -10.55 kg in waste generation specifically in the NICU on April 23.

CONCLUSION

Due to the interventions, it is evident from the analysis that each department except NICU has seen a drop in the production of biomedical waste, allowing the process to be optimized. Numerous departments have also experienced major transformation, which has decreased costs.

RECOMMENDATIONS

- Further investigation to understand the underlying reasons for the increase in waste generation in NICU
- Observe trends in waste generation and implement additional targeted measures to ensure effective biomedical waste management across all areas of the hospital.
- Continuous monitoring and evaluation of waste management practices will be essential in maintaining a safe and environmentally friendly healthcare facility.

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THANK YOU