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Implementation of the Management of Hospital Wastes: An Assessment

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Abstract**—** *This paper described the perceived strategies by the hospital owners/administrators in implementing waste management. Further, this paper described the challenges faced by the hospital owners/administrators in implementing waste management. From the challenges, the paper described its coping mechanisms towards the implementation of waste management. A total of 49 respondents composed of 41 administrators and 8 hospital owners were surveyed in the study using descriptive method. The result of this study would be very helpful as a guideline for improving and developing the healthcare related waste management. It will also create awareness regarding the magnitude of the problem of waste management in hospitals of Cabanatuan City and has generated interest for systematic control efforts for hospital waste disposal. Hospital waste management cannot succeed without documented plans, certain equipment, defined staff trainings, and periodic evaluations. The major challenged for most of the hospitals in Cabanatuan City is the financial constraints, awareness, implementation and monitoring waste management. Many efforts have been made by environmental regulatory agencies and waste generators to better manage the waste from healthcare facilities in recent years but still these are not sufficient enough to prevent environmental hazards and associated health hazards caused by health care waste.*

Keywords**— Waste Management, Hospital Waste, Health-care waste, Medical Waste.**

I. INTRODUCTION

One of the crucial procedures of hospital is its waste management. Inadequate waste management has contributed to pollution of water, soil and environment and a significant impact on public health (Giusti, 2009). The segregation of medical waste is an essential step in minimizing the amount of hazardous waste since it allows the ability to make reliable measurements of its content by using labelled bags to accurately distinguish infectious waste from domestic waste (Longe & Williams, 2006). Hence, to understand the hospital function and the proper collection and transport of hospital waste, orientation programs for newcomers are also needed (Sachan et al., 2012).

Health-care waste comprises all waste created by medical operations which includes medical practices as well as prevention, curative and palliative procedures in the area of human and veterinary medicine (World Health Organization, 2002). Also, waste from healthcare services is a source of potentially harmful micro-organisms that can infect patients in hospitals, workers and the general public (International Committee of the Red Cross, 2011).

In light of the foregoing insights, the researcher wanted to assess the waste management of hospitals in Cabanatuan City. Further, the researcher aims to raise awareness to the owners/administrators regarding the strategies, and coping mechanisms towards the challenges in hospital waste management.

II. CONCEPTUAL FRAMEWORK

Healthcare centers are reluctant to segregate hospital solid waste due to removal, which exacerbates health consequences and high disposal costs as it is observed that the generation of clinical solid waste has increased due to the widespread

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acceptance of disposable single-use products (Hossain et al., 2011).

Groups working in the area of public health or environmental conservation should encourage sound waste management for health care in their advocacy and incorporate services and practices that lead to sound waste management for health care (Walkinshaw, 2011).

As it needs careful handling and treatment preferable to its final disposal, hospital waste can be troubling to the environment as well as the community as the rise in the number of hospitals inevitably increases the amount of waste discarded without any treatment (Ali et al., 2017).

III. OBJECTIVES OF THE STUDY

This paper described the perceived strategies by the hospital owners/administrators in implementing waste management. Further, this paper described the challenges faced by the hospital owners/administrators in implementing waste management. From the challenges, the paper described its coping mechanisms towards the implementation of waste management.

IV. METHODOLOGY

This paper used a descriptive approach designed for researchers to collect information on the presentation of current situations and to explain the essence of the situation as it occurred at the time of the study and to investigate the causes of particular phenomena (Camic et al., 2003). A total of 49 respondents composed of 41 administrators and 8 hospital owners were surveyed in the study. The researcher used likert-scale questionnaires to assess the perception of the respondents with the likert-scale responses (Vagias, 2006) and to evaluate the data obtained by mean and weighted mean.

V. RESULTS AND DISCUSSIONS

Table 1. Perceived strategies by the Hospital Owners/Administrators in implementing Waste Management

	Mean	Verbal Interpretation
1. Conducting education and public information on effective management of waste.	4.52	Agree
2. Collecting hospital wastes is done in a manner that prevents damage to the container.	3.50	Agree
3. Wearing protective gear when necessary and requiring employees to wear protective gear when handling hazardous waste	3.59	Agree
4. Implementing color coded and labelled trash bins and containers for waste disposal	3.57	Agree
5. Enforcing proper waste segregation practice among clients	3.20	Neither Agree nor Disagree
6. Segregating of different types of waste	4.54	Strongly Agree
7. Collecting and transporting of hospital wastes is available with the use of proper equipment	4.27	Strongly Agree
8. Maintaining in good condition and keeping clean of the machines to prevent the harboring of vectors and creation of nuisances	4.14	Agree
9. Treating infectious or hazardous wastes of hospital facility is properly managed	4.17	Agree
10. Operating and maintaining health and safety hazards to the collectors and other personnel of hospital waste	4.55	Strongly Agree
11. Partnering with third party for healthcare waste treatment for hazardous and infectious waste	3.20	Neither Agree nor Disagree
12. Securing licenses related to pollution control, environmental management, and control of toxic substances and hazardous wastes for the purposes of hospital facility	4.16	Agree
General Weighted Mean	**3.95**	**Agree**

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Table 1 presents the results on the perceived strategies by the hospital owners/administrators in implementing waste management with a general weighted average mean of 3.95 and has a verbal interpretation of "Agree".

Based on the results, hospital owners/administrators "Strongly Agreed" they perceived that the strategies in implementing waste management were the following: "Operating and maintaining health and safety hazards to the collectors and other personnel of hospital waste" (Mean = 4.55), "Segregating of different types of waste" (Mean = 4.54), "Conducting education and public information on effective management of waste." (Mean = 4.52), and "Collecting and transporting of hospital wastes is available with the use of proper equipment." (Mean = 4.27). The results imply that strategies in implementing hospital waste management should focus on educating people and having available equipment in operation and maintenance of health and safety hazards among hospital staff and clients.

On the other hand, hospital owners/administrators neither agreed nor disagreed on these statements; "Enforcing proper waste segregation practice among clients" (M = 3.20) and "Partnering with third party for healthcare waste treatment for hazardous and infectious waste" (M = 3.20).

Table 2. Challenges faced by the Hospital Owners/Administrators in implementing Waste Management.

	Weighted Mean	Verbal Interpretation
1. Not all employees and consumers observe proper segregation of waste.	1.17	Strongly Disagree
2. Regarding the waste management program, the institution lacks a proper operational plan.	2.15	Disagree
3. To comply with the requirements of government regulatory bodies, the hospital must invest in services, equipment and manpower.	1.39	Disagree
4. The desire to follow the policy of green procurement is an issue.	1.13	Strongly Disagree
5. High maintenance facilities for the storage, processing, treatment and disposal of healthcare waste could not be provided by the institution.	1.53	Strongly Disagree
6. The concrete waste management plan in operation is not properly disseminated.	2.47	Disagree
7. There is only small allocation of budget for waste management program.	3.65	Agree
8. Awareness and training program for waste management is not prioritized.	1.61	Strongly Disagree
9. There is a lack of commitment on the part of top management to ensure a proper waste management program	1.41	Strongly Disagree
10. The management is not converted to effect change in waste management practices.	3.12	Neither Agree nor Disagree
General Weighted Mean	**1.96**	**Disagree**

Table 2 presents the results on the Challenges faced by the Hospital Owners/Administrators in implementing Waste Management with a general weighted average mean of 1.96 and has a verbal interpretation of "Disagree".

Hospital owners/administrators Strong Disagreed that they faced the following challenges such as "The desire to follow the policy of green procurement is an issue." (M = 1.13), "Not all employees and consumers observe proper segregation of waste." (M = 1.17), "There is a lack of commitment on the part of top management to ensure a proper waste management program" (M = 1.41), High maintenance facilities for the storage, processing, treatment and disposal of healthcare waste could not be provided by the institution." (M = 1.53), and "Awareness and training program for waste management is not prioritized." (M = 1.61). These results imply that hospital owners/administrators faced challenges that are on the areas on the employees' strict compliance on their segregation policy, as well as the consumers, the management commitment, the use of waste management facility, and the development program for waste management.

However, hospital owners/administrators Agreed that their challenge was "There is only small allocation of budget for waste management program." (M = 3.65). This means that lack of financial support is a factor to maintain the waste management program.

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Table 3. Coping Mechanism of hospital owners/administrators towards the challenges of implementing waste management.

	Weighted Mean	Description
Using more environmental-friendly medical supplies	3.12	Neither Agree nor Disagree
Exploring possibilities of recycling of the used products so that it can be used to offer similar or other benefits with less wastage	3.63	Agree
Making sure that patients , relatives, employees are aware of proper waste management through information dissemination	3.49	Neither Agree nor Disagree
Being consistent in waste management campaign	4.45	Strongly Agree
Investing in research and development on proper implementation of waste management	3.69	Agree
Waste management should be backed up by other promotional tools	4.20	Strongly Agree
Always making sure to substantiate any claim of waste reduction in packaging, brochures and company website	3.20	Neither Agree nor Disagree
Developing information materials (flyers, posters) on proper waste management	3.47	Agree
Having an intensive evaluation on the effectiveness and monitoring of implementation of proper waste management	4.33	Strongly Agree
General Weighted Mean	**3.62**	**Agree**

Table 3 presents the coping mechanisms of hospital owners/administrators towards the challenges of implementing waste management with a general weighted average mean of 3.62 and has a verbal interpretation of "Agree".

Based on the results, they Strongly Agreed on the following coping mechanisms: "Be consistent in waste management campaign" (M = 4.45), "Having an intensive evaluation on the effectiveness and monitoring of implementation of proper waste management" (M = 4.33), and "Waste management should be backed up by other promotional tools" (M = 4.20). These imply that all hospitals are ready to embrace the changes in extensive implementation of hospital waste management. The above findings clearly pointed out that majority of the hospitals had high willingness to accept challenges and accept the new trends on how to treat the hospital waste.

Furthermore, hospital owners and administrators Agreed also that "Investing in research and development on proper implementation of waste management" (M = 3.69) and "Exploring possibilities of recycling of the used products so that it can be used to offer similar or other benefits with less wastage" (M = 3.63) were also their coping mechanisms toward the challenges they faced in waste management.

VI. CONCLUSIONS AND RECOMMENDATIONS

The result of this study would be very helpful as a guideline for improving and developing the healthcare related waste management.

It will also create awareness regarding the magnitude of the problem of waste management in hospitals of Cabanatuan City and has generated interest for systematic control efforts for hospital waste disposal. Hospital waste management cannot succeed without documented plans, certain equipment, defined staff trainings, and periodic evaluations. The major challenged for most of the hospitals in Cabanatuan City is the financial constraints, awareness, implementation and monitoring waste management.

Many efforts have been made by environmental regulatory agencies and waste generators to better manage the waste from healthcare facilities in recent years but still these are not sufficient enough to prevent environmental hazards and associated health hazards caused by health care waste.

Healthcare institution must prioritize, implement and strengthen waste management policy and ensure that government standards and policies are being met, the use of environmental-friendly medical supplies, continuous improvement of policy manual regarding waste management. Coordination, cooperation, and compliance with local government unit and environmental management bureau

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regarding regulatory standards in order to mitigate health and environmental danger.

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