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Evaluation of Solid Medical Waste Management at Prof. Dr. W. Z. Johannes Kupang Hospital

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Abstract
Background : Analyze resources in the management of solid medical waste include : Human Resources (quality and quantity), costs, facilities, Standard Operating Procedures (SOP), operational technique, output of solid medical waste management at hospital. Analyze phases of solid medical waste management process includes : a source of waste, minimization, segregation, collection, transportation, temporary storage, processing and final disposal.
Methods : This is a evaluation research which describe medical solid waste management system.
Result : Analyze the results of medical solid waste management include : the conditions in temporary storage and the final disposal. Minimization stages acquire good category with score 86,11%, segregation stages acquire sufficient category with score 67,33%, collecting stages acquire good category with score 88,89%, transportation stages acquire good category with score 84,72%, temporary storage stages acquire sufficient category with score 75,40%, processing stages acquire sufficient category with score 58,33% and final disposal stages acquire sufficient category with score 70,63%.
Conclusion : For human resources in the management of solid medical waste in hospitals Prof. Dr. Z. W. Johannes Kupang, sanitary installations officers have not been trained in the management of solid medical waste hospitals, infrastructure is still lacking, socialization SOP related waste management is still lacking. TPS condition in a permanent housing is open, so no unauthorized parties can enter and not free from vermin. No incidence of occupational accidents resulting solid medical waste includes physical injury

Keywords: *Evaluation, Solid waste management, Hospital*

Introduction

Environmental problems that occur at this time are extremely diverse one is the problem are waste. Waste problem that occurs is closely related to the world of health. To achieve the society healthy needs a healthy and good environment. The hospital is a health care institution which organizes personal health services in the plenary that provides inpatient, outpatient and emergency. Exposure to solid medical waste in health care can lead to disease or injury. Hazardous properties of solid medical waste of health services arise due to the following characteristics: waste containing infectious agents, genotoxic waste, the waste contains chemicals or harmful drugs or toxic, radioactive waste, the waste contains sharp objects. Peoples are exposed solid medical waste in health facilities be people at risk, including those that are in facilities that produce waste and has the task of managing waste.

Medical waste is potentially dangerous because of the waste containing pathogenic agents that can cause a person to become ill. The production of this waste will continue to be a phenomenon that continues along the existing human activities. Solid medical waste management is a new issue that is magnified by the lack of training, awareness, and financial resources to support the solution. Waste collection and disposal is very important because it has a direct impact to the public and environmental health. There are several groups of people who have a risk for a disruption due to discharge Hospital. The first, patient who came to the hospital to obtain aid treatment and hospital care, this group is the most vulnerable groups. Second, Hospital employees in carrying out daily tasks always in contact with a sick person who is the source of the disease agent. Third, visitors or escort of sick people who visited the hospital, the risk of health problems will be even greater. Fourth, people who live in the nearby of the hospital, where hospital dispose of waste products do not fit standard hospital procedures into the surrounding environment as a result is a decline in the quality of the environment as a result of the sequel is the declining level of public health in the neigborhood. Therefore, the Hospital shall implement the waste management with good and

right to carry out sanitation activities Hospital by referring to government regulations Kepmenkes RI 1204 / Menkes / SK / X / 2004.

Prof. DR. W.Z Johannes Hospital Kupang Hospital is type B Non education belongs to the NTT provincial government. Location of the hospital is located in Kota Kupang with total area of 51.670 m^2. The strategic position of this hospital is the only one referral-level advanced in Nusa Tenggara Timur that serves a population of approximately 4.6 million inhabitants. In carrying out the duties and functions of health services to the community Prof. Dr. WZ Johannes Kupang Hospital equipped with a capacity of 358 beds with the composition of the class III 182 beds (50,84%), class II 73 beds (20,39%), Class I 34 beds (9,50%), Pavilion 23 beds (6,42%), 46 bed installations intensive (12,85%), and supported by the facility outpatient services, emergency, inpatient, intensive care, surgical central, childbirth, KIA, perinatology and family planning, endoscopy, hemodialysis, laboratory, medical rehabilitation, radiology, blood bank, nutrition, pharmacy, laundry, mortuary, forensics and medicolegal, hospitals occupational, facilities and infrastructure maintenance, ambulances and hearses, sanitation and medical records. The hospital is able to provide services of medical specialists and limited subspecialists. Prof. Dr. Z. W. Johannes Kupang Hospital also accommodate referral services from the district hospital in the province of East Nusa Tenggara.

Methods

Evaluation Research of solid medical waste management of Prof. Dr. W. Z Johannes Kupang Hospital is a descriptive study with design formative. This design was chosen because the evaluation is done to improve ongoing programs and activities based on the days, weeks, months or even years of time is relatively short (Supriyanto and Damayanti, 2006).

This evaluative research is an evaluation study that explains how the process of implementing an activity of solid medical waste management medical hospitals include variable input, process and output so that it can be seen the obstacles encountered in the solid medical waste management. Based on the time of this study, the study design was cross-sectional because in this study only look at and analyze a situation within a certain time.

Result

Analyze the results of medical solid waste management include : the conditions in temporary storage and the final disposal. Minimization stages acquire good category with score 86,11%, segregation stages acquire sufficient category with score 67,33%, collecting stages acquire good category with score 88,89%, transportation stages acquire good category with score 84,72%, temporary storage stages acquire sufficient category with score 75,40%, processing stages acquire sufficient category with score 58,33% and final disposal stages acquire sufficient category with score 70,63%.

Discussion

Based on the information and data quality of personnel in the solid medical waste management in Prof. Dr. W.Z. Johannes Kupang Hospital where the person in sanitary installations are public health undergraduate and has a sanitarian Certificate of Regustrasi (STR). Person in charge of environmental health at the hospital class A and B (public hospitals) and the equivalent is a personnel qualified sanitarian as low as qualified undergraduate (S1) in the field of environmental health, environmental engineering, biology, chemical engineering, and civil engineering.

Waste management in a hospital or other health care depends on a good administration and organization, also requires policies and adequate funding. Funds of solid medical waste management in Prof. Dr. Z. W. Johannes Kupang Hospital sourced from APBD with a total budget Rp. 253 183 014, - the budget is sufficient even though there are some requests proposals that not realized.

Based on the data and information about infrastructure related to the solid medical waste management in Prof. Dr. Z. W. Johannes Kupang hospital, it can be concluded that for infrastructure, still less where a garbage disposal in each room is only trash for medical and non medical waste and safety box for needles. There is still a trolly carrier damaged, temporary sstorage still open and the processing only using mechanical incinerator with a capacity of 1 m^3. Not all infrastructure is well some of them in a unfit condition as a broken lid trash, trolly wheels that do not work.

Based on the data and information about SOP related to the solid medical waste management in Prof. Dr. Z. W. Johannes Kupang

Hospital, it can be concluded that solid medical waste management is carried out in accordance with the SOP, namely sharps medical waste management, non-medical waste management (domestic waste) and medical waste management (solid medical waste).

In interviews with the person in sanitary installations, waste generated in each room accommodated at the shelter container according to the type of waste produced and then transported by a cleaning service to be taken to Temporary storage (TPS). Non-medical waste taken to the landfill, while medical waste combustion process is carried out using the existing incinerators. Combustion will be done if all the garbage of each room have been collected at polling stations. The burning process is usually done 2-3 times a day and carried out by the officer in charge and doing by burner in the combustion process until all solid medical waste are burnt.

Measurement of solid medical waste in Prof. Dr. Z. W. Johannes Kupang Hospital made 3 days in a row on 14 to 16 June 2016, with the result a total of 126.20 Kg with an average of 42.07 Kg / day.

Waste minimization was an attempt by the hospital to reduce the amount of waste generated by reducing material, re-use of waste and recycling of waste. Waste segregation should start from a source of waste consisting of infectious waste, pathological waste, sharps waste, pharmaceutical waste, chemical waste, radioactive waste, waste pressurized containers high and waste containing heavy metals

Waste collection is a method or process waste retrieval from a lug / waste storage of sources to temporary storage to landfills.

Solid medical waste storage must fit with tropical climate that during the rainy season later than 48 hours (maximum 2 days) and the dry season maximum of 24 hours (1 day). For hospitals had a incinerators must burn the waste no later than 24 hours

Waste transporting starts from waste discharge storage in every room and transported to temporary storage. Transportation is usually done with a special closed trolly.

Based on results, Prof. Dr. W. Z. Johannes Kupang Hospital have a incinerator with good condition even have noat license. Medical waste treatment is purpose to change the characteristics of biological and / or chemical waste so potential danger to humans is reduced or absent. Solid medical waste is not allowed to dispose directly into landfills domestic waste before it is safe for health.

Conclusion

For human resources in the solid medical waste management in Prof. Dr. Z. W. Johannes Kupang Hospital , sanitary installations officers have not been trained in the management of solid medical waste hospitals, infrastructure is still lacking, socialization SOP related waste management is still lacking. TPS condition is a open permanent housing, so no unauthorized parties can enter and not free from vermin. Incidence of occupational by solid medical waste is physical injury

Recommendations are given is training for officers sanitary in terms of solid medical waste management, infrastructure repair and complement the PPE for the janitor.

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