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Management of medical waste procedures in government hospitals

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Abstract

Background: Medical waste due to the Corona Virus Disease (Covid-19) is a new threat to our environment. The waste which is included in hazardous and toxic materials will become a source of new diseases and pollute the environment.

Objective: The purpose of this study was to determine the procedures for medical waste management during the Covid-19 pandemic.

Method: We used qualitative descriptive research. Data collection techniques with observation and in-depth interviews. Research informants are sanitation officers, nurses, pharmacy officers, cleaners, and the Director of the hospital. Data processing through three stages, namely data reduction, data presentation, and verification.

Result: The sorting process was carried out by preparing a

container that was a label and a yellow plastic. The collection process takes a maximum of 12 hours, then sprayed with disinfectant liquid. Storage procedure is carried out for a maximum of 48 hours. The storage room is located outside the building. The building is watertight and closed. The transportation process uses a special closed trolley and then is handed over to the outsourcing agent. The processing of solid medical waste is not carried out in this hospital.

Conclusion: The process of solid medical waste management starting from sorting, collecting, storing, and transporting medical waste by government regulations and the ministry of health but still requires close supervision. There is still a lack of sanitarian personnel and the unavailability of incinerators in this hospital.

Keywords: Medical Solid Waste, Covid-19

Introduction

Hospitals as institutions that provide health services to the community must be responsible for the health of the surrounding environment by managing medical waste properly. Solid medical waste is consisting of infectious waste, pathological waste, pharmaceutical waste, cytotoxic waste, chemical, radioactive, and waste with high heavy metal content ^[1]. During the Covid-19 pandemic, the hospital should be more consent about medical solid waste management.

Medical waste generated from medical efforts such as hospitals is a type of waste that is a bio-hazard category that is very dangerous to the environment. Consist of viruses, bacteria, and other harmful substances that must be destroyed by burning inside temperatures above 800⁰ Celsius. However, the management of medical waste originating from hospitals, health centers, medical centers, and medical laboratories in Indonesia is still below professional standards. Even many hospitals that dispose of and treat medical waste are not by applicable regulations ^[2]. Hospital waste management has many obstacles. Constraints commonly found in waste management are expensive management costs because they are related to high technology, operational mechanisms and monitoring and maintenance of waste management as well as conflicts related to government policies ^[3].

The staff managing the waste must adhere to the World Health Organization guidelines⁴. Sources of solid medical waste include masks, gloves, bandages, tissues, syringes, infusion sets, and Personal Protective Equipment (PPE). The increase in the number of patients suffering from Covid-19 continues to result in increased medical waste. There are 31 hospitals in Pekanbaru City, Riau Province producing 5.95.6 kg/day ^[5]. Poor waste management can harm humans and employees. The incidence rate of hepatitis B infection, due to work accidents, was found by nurses who had injuries as many as 800-7.500 people and as many as 2-15 people infected with the hepatitis virus ^[6, 7]. This study aims to describe the process of managing medical solid waste in hospitals.

Method

We used qualitative descriptive research. Data collection techniques with observation and in-depth interviews. The research informants consisted of 5 participants, namely: sanitation officer, nurse, pharmacy officer, cleaning service, and hospital director. The research variables were: sorting, collecting, storing, and transporting medical solid waste at Bhayangkara Hospital, Riau Province. The research was conducted for 3 months (June-August 2020). Data processing was carried out through three stages, namely: data reduction, data display, and verification.

Results and Discussion

1. Solid Waste Sorting Process

Sorting is done by medical personnel present in each room. The bucket was labeled. Each bucket must be covered with a plastic bag. Then the process of sorting between infectious and non-infectious waste is carried out. The procedure for separating medical waste is based on the regulation of the Minister of Environment and Health (NO.SE.2 / MENLHK / PSLB.3 / PLB.3 / 3/2020). The purpose of this sorting is to reduce the risk of disease transmission and infection in humans^[8].

2. Solid Waste Collection Process

The waste that is collected for a maximum of 12-48 hours is packed, tied then sprayed with a disinfectant. Cleaners are required to use complete personal protective equipment. Collection of waste to the medical waste disposal site using a trolley. The stages of collecting solid medical waste from patients based on regulations of the minister of health and environment (NO.SE.2/ MENLHK / PSLB.3/PLB.3 /3/2020). Each source of medical waste must have a container. The impact arising from hospital medical waste can be transmitted through blood, body fluids, and feces. This causes the entry of diseases, such as infections in the blood. The case in Bangladesh was a scavenger collect medical waste such as syringes, IV bottles, blood bags, etc then reused it. It causes infections such as AIDS and hepatitis^[9-11].

3. Temporary Storage Process

The storage room is located outside the building. That location is free of floods and natural disasters have a long distance from health service activities of 100-200 meters. Waterproof room and closed storage container. But it is not locked, making it easier for flies, mice, and cockroaches to enter the container. The room is routinely disinfected using chlorine liquid and they used Personal Protection Equipment (PPE). The medical waste that has been collected will be destroyed by outsourcing who collaborates with the Hospital. The stages of storing solid medical waste from patients based on regulations of the Minister of the Environment and health (NO.SE.2/MENLHK/ PSLB.3/PLB.3/ 3/2020). The location for temporary waste disposal is based on regulations.

4. Solid Waste Transport Process

The process of transporting from a temporary storage room using a trolley. The transportation process is carried out a maximum of 2 x 24 hours. The volume of waste transported must be recorded in a logbook. Transportation is carried out by outsourcing in collaboration with the Hospital. The impact of transporting medical waste that does not meet the requirements is that it can cause waste to be transported by carts that do not have a cover which will result in the waste

scattered and cause bacteria that cause nosocomial infections, such as needle sticks and bacterial transmission from scattered bandages during the collection to disposal process^[12]. For the procurement of an incinerator for the disposal of solid waste before disposal to the final disposal site so that the waste is safe for the environment^[13, 14].

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Conclusion

The medical solid waste management process from sorting, collecting, temporary storage, and transporting based on government regulations and the ministry of health, but still requires close supervision. There is still a lack of sanitarian personnel and the unavailability of incinerators in this hospital.

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