

Overview of Domestic Solid Waste Management System at Islamic Hospital A. Yani Surabaya

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Abstract

Introduction: Hospital waste can threaten surfaces, water, air, soil, environment, and human health. Almost 80% of the waste produced by hospitals is in the form of non-medical waste, and 20% is in the form of medical waste. Based on the total amount of waste generated by health service activities, about 85% is general non-hazardous waste which is comparable to domestic waste. **Objective:** The purpose of this study is to describe the domestic solid waste management system at Isam A. Yani Hospital, Surabaya. **Method:** This type of research is a quantitative study with a cross-sectional approach. The population in this study is to 5 informants. **Results and Discussion:** of the research at the stage of handling domestic solid waste for storage have distinguished between organic and non-organic waste, the transporter uses PPE and is stored in the Landfills for 1 day. The facilities available are trolleys with uk 660 liters and 240 liters, sinks, green carts, dustbins, cikrak etc. Vector control is always carried out when there is a density of vector animals. **Conclusion:** The conclusion of the domestic solid waste management system at the Islamic Hospital A. Yani Surabaya is that RSI has carried out the stages of waste management in accordance with existing regulations.

Keywords: Hospitals; Domestic Waste; Waste Management;

Introduction

Hospital waste is all garbage and waste generated by hospital activities and other supporting activities (Young, 2020). Health care waste contains potentially harmful microorganisms that can infect hospital patients, healthcare workers, and the general public.

Hospital waste can threaten surfaces, water, air, soil, the environment and human health. Waste generated by human activities can provide changes associated with lifestyle threatening humans. Hospital wastewater is all liquid waste derived from the process of all hospital activities which includes domestic liquid waste, namely room waste from hospitals that may contain microorganisms, toxic chemicals, and radioactivity (Islamey, 2016)

In developing countries, hospital waste has not received adequate attention, especially if it is disposed of together with domestic waste (Kuchibanda & Mayo, 2015). In many of these countries, medical waste is still handled and disposed of along with domestic waste, posing a major health risk to health care workers, municipal workers, communities and the environment (Awodele et al., 2016)

Almost 80% of the waste produced by hospitals is in the form of non-medical waste, and 20% is in the form of medical waste (Kusumaningtiar et al., 2021). As much as 15% of hospital waste is infectious waste and body tissue waste; sharps waste by 1% chemical and pharmaceutical waste 3%; and genotoxic and radioactive waste by 1%. Based on the total amount of waste generated by health care activities, about 85% is non-hazardous general waste comparable to domestic waste (Tadesse & Kumie, 2014). The remaining 15% are considered hazardous materials that may be infectious, chemical or radiooaccative. Improper hospital waste management practices can indeed have a direct or indirect impact on health workers, patients and the hospital environment. Garbage can cause contamination of drinking water, surface water, and groundwater if the landfill is not built properly.

According to non-medical waste, waste is waste from hospital activities outside of medical activities. This waste can come from kitchens, offices, parks and yards, as well as service units (Ardhani, 2019). For example: cardboard, cans and bottles, and waste from the patient's room that can be reused if there is technology. Garbage is defined as an object that is unused, unwanted and thrown away or something that is not used, not used, disliked or something that is thrown away comes from human activities and does not occur by itself.

Based on research in Nepal, it was concluded that the waste management system at Narayani Sub-Regional Hospital has not been segregated hospital waste (Febrina, 2011). All hospital waste, all hospital garbage is collected in a precise, uncovered trash can, transportation using plastic bags that are not tightly closed allows spills that are harmful to health. Other potential dangers may include drug-resistant microorganisms spreading from healthcare facilities to the environment (Tait et al., 2020)

Improper hospital waste management practices can indeed have a direct or indirect impact on health workers, patients, and the hospital environment (Alvandi Simbolo,

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2022). Disposal of untreated health care waste in landfills can lead to contamination of drinking water, surface water, and groundwater if such landfills are not built properly. Hospital waste management is needed which is part of hospital environmental health activities aimed at protecting the community from the dangers of environmental pollution sourced from hospital waste (Aini, 2019)

Pathogenic microorganisms that grow in waste can be transferred through insects, such as flies, mosquitoes, and cockroaches, or by rodents such as rats, which often use garbage as a place to live and source food. House flies have been identified as carriers of disease-causing microorganisms such as typhoid fever, amoebic dysentery, and tuberculosis. A single fly can carry as many as 6 million microbes on its surface, and more on its body.

Data obtained by researchers at A. Yani Islamic Hospital Surabaya, regarding the number of drills as many as 139 and the number of volumes for domestic solid waste produced by A. Yani Islamic Hospital Surabaya such as tissue waste, paper, cardboard, plastic, leaves, straws, drink bottles and food wrappers every day as many as 10 trolleys with a size of 240 lt. For solid food waste every day produces 1 trolley measuring 240 lt according to the number of patients each day, the more patients, the more food waste is wasted. So, it is necessary to conduct research on the Overview of Domestic Solid Waste Management at A. Yani Islamic Hospital Surabaya.

Method

This type of research is a quantitative study with a *cross-sectional approach*. This study was conducted to determine the Overview of the Domestic Solid Waste Management System at A.Yani Islamic Hospital Surabaya. The population in this study was 5 informants, namely informant 1 Head of Environmental Health Sanitation, informant 2 namely the Environmental Health Sanitation Unit and 3 informants namely the domestic solid waste carrier at A. Yani Islamic Hospital Surabaya. The data used in this study are primary and secondary data. Primary data were collected directly by observation and through interviews. The information obtained will be recorded and documented using a *mobile phone* with the consent of the respondent. Secondary data is obtained from A. Yani Islamic Hospital which is reports and recorded data.

Results and Discussion

1. Overview of A. Yani Islamic Hospital Surabaya

Surabaya Islamic Hospital was established on the initiative of NU Muslimat Surabaya Branch figures under the auspices of the Surabaya Islamic Hospital Foundation (YARSIS). Surabaya Islamic Hospital is located on Jl. Achmad Yani No. 2-4, Wonokromo, Wonokromo District, Surabaya City, East Java 60243. Islamic Hospital was established on March 25, 1975, and has a vision, mission, and goals.

2. Stages of Handling Domestic Solid Waste at A. Yani Islamic Hospital Surabaya

In research conducted by means of in-depth interviews and observations. The results of interviews and observations that have been made about the stages of handling domestic solid waste at RSI A.Yani Surabaya are at the stage of different containers between organic and non-organic waste, which separates or distinguishes its place, namely from the nutrition unit. Waste is transported to the Domestic Landfills usually 1 day 3 times morning, afternoon, and night. There is 1 trash can in each patient room and corridor in the hospital. Each trash can is cleaned using water, usually 1 week 1-2x cleaning. Garbage cans that are damaged but still fit for use will be repaired, but trash cans that are already damaged and not functioning will be discarded and submitted to logistics to request a new one.

Transportation of waste into the Domestic Landfills is usually in the morning at 06.00-08.00 WIB, during the day 12.00-14.00 WIB and at night at 18.00-20.00. Trolleys and trains that transport garbage to polling stations are eligible. Transport officers also use PPE such as masks, boots, hand serum, aprons. Storage at Landfills 1x24 hours. For the final waste handling process, the collected waste will be taken to the cleaning service to the Landfills after being at the Landfills every 02.00 pm / early morning will be taken / transported by the 3rd party.

3. Domestic Solid Waste Sorting and Reduction Efforts

Efforts to sort and reduce domestic waste in this study were carried out by means of in-depth interviews. The results of the interview on efforts to sort and reduce domestic waste at A.Yani Islamic Hospital Surabaya were sorted between organic and non-organic types in the nutrition unit that separated solid and dry patient food waste, then made one in the Domestic Landfills at the hospital. For liquid patient food waste, it will be processed by the hospital using WWTP. Non-medical waste in the form of paper, cardboard, plastic, and others produced from kitchens, waiting rooms, parks, and treatment rooms.

Waste such as cardboard is collected by cleaning services for sale and there is no reuse by the hospital. The color of domestic/non-infectious garbage cans at A. Yani Islamic Hospital Surabaya is green, gray, blue with black plastic bags. For recording the volume of organic and non-organic waste types in one day transported and stored in RSI domestic Landfills as many as 10 trolleys with a size of 240 lt and 1 trolley with a size of 240 lt for food waste. No waste is recycled/reused with the hospital.

4. Efforts to Provide Domestic Solid Waste Handling Facilities

Efforts to provide domestic solid waste handling facilities at A. Yani Islamic Hospital Surabaya in this study were carried out by means of in-depth interviews and observations. The results of interviews on efforts to provide domestic solid waste handling facilities are the existence of facilities for handling domestic solid waste such

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as trolleys, trash cans and in the Domestic Landfills itself there are also facilities such as sinks, apar, green garbage carts, trolleys measuring 660 lt and 240 lt, hoses, cikrak, brooms and mops. The design of the building at the Domestic Landfills measures 4.5 x 3 cm. At domestic polling stations, cleaning is also carried out for every 3rd party pick-up.

5. Efforts to Handle Vectors and Animals Carrying Domestic Solid Waste Disease

Efforts to handle vectors in domestic polling stations in this study were carried out by means of in-depth interviews. Inside domestic polling stations there are usually nuisance binatang such as flies, rats, cockroaches and flies. For fly control usually from RSI using fly trees and for rats using traps. The 3rd party provides environmentally friendly pesticide ingredients when picking up at the RSI A. Yani Surabaya Domestic Landfills. Environmental and physical hygiene efforts carried out by RSI are by cleaning the Domestic Landfills and the place where garbage collection is finished.

Conclusion

The stages of Handling Domestic Solid Waste are distinguished in their place / container between organic and non-organic. Transported into Landfills 1 day 3x morning, afternoon, and night. Waste transporters into domestic polling stations use PPE. Sorting between organic and non-organic waste from nutritional units / food waste. There is a label / writing on domestic / non-infectious waste to distinguish infectious and non-infectious waste bins.

Facilities available in handling domestic solid waste are trolleys with sizes of 660 Lt and 240 Lt, sinks, apar, green garbage carts, dustbins, hoses, dustpan, broom, and mops. Vector control carried out by the RSI on fly density using fly trees and rats using traps. Environmental hygiene and physical hygiene efforts carried out by RSI are by cleaning domestic polling stations and trash cans after each collection.

References

- Aini, F. (2019). Pengelolaan Sampah Medis Rumah Sakit atau Limbah B3 (Bahan Beracun dan Berbahaya) di Sumatera Barat. *Jurnal Education And Development*, 7(1), 13.
- Alvandi Simbolo, D. (2022). *PENGELOLAAN LIMBAH MEDIS DI RUMAH SAKIT BRATANATA JAMBI*. Universitas Jambi.
- Ardhani, R. M. (2019). *PENGELOLAAN LIMBAH MEDIS PADAT DI RUMAH SAKIT IBU DAN ANAK PUTRI SURABAYA TAHUN 2019*. STIKES Yayasan RS Dr. Soetomo Surabaya.
- Awodele, O. Oparah, A. C. (2016). Assessment of medical waste management in seven hospitals in Lagos, Nigeria. *BMC Public Health*, 16(1), 1–11.
- Febrina, R. (2011). *Sistem Pengelolaan Sampah Padat di Rumah Sakit X Jakarta tahun 2011*. Skripsi: Universitas Indonesia.
- Islamey, F. E. (2016). Perlakuan akuntansi lingkungan terhadap pengelolaan limbah pada rumah sakit paru jember. *Jurnal Fakultas Ekonomi Universitas Muhammadiyah Jember*, 1(1), 1–20.
- Kuchibanda, K., & Mayo, A. W. (2015). Public health risks from mismanagement of healthcare wastes in Shinyanga municipality health facilities, Tanzania. *The Scientific World Journal*, 2015.
- Kusumaningtiar, D. A. Nitami, M. (2021). Tantangan limbah (sampah) infeksius covid-19 rumah tangga dan tempat-tempat umum. *Jurnal Pengabdian Masyarakat AbdiMas*, 7(2), 87–88.
- Noor, E. A. (2020). Pertanggung jawaban rumah sakit terhadap limbah bahan beracun berbahaya (B3). *Jurnal Penegakan Hukum Indonesia*, 1(1).
- Tadesse, M. L., & Kumie, A. (2014). Healthcare waste generation and management practice in government health centers of Addis Ababa, Ethiopia. *BMC Public Health*, 14(1), 1–9.
- Tait, P. W. Rowcliff, K. (2020). The health impacts of waste incineration: a systematic review. *Australian and New Zealand Journal of Public Health*, 44(1), 40–48.

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