

## Solid medical waste management system at the Regional General Hospital (Rsud) Puri Husada Tembilahan 2023

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### Abstract

**Backgrounds:** Hospital is a health service institution with preventive, curative, rehabilitative and promotive service activities. Hospital solid medical waste contains hazardous materials (infectious, toxic and radioactive) if not managed properly it can pollute the environment and is considered a link in the chain of spread of infectious diseases. This study aims to look at the solid medical waste management system at the Puri Husada Tembilahan Regional General Hospital.

**Method:** This research is a qualitative research with a research design using observation design. This research was conducted in January-May 2023 at the Puri Husada Tembilahan Regional General Hospital (RSUD). The informants in this study were 1 head of non-medical support, 1 person in charge of environmental sanitation, 1 nurse, 1 person of tps lb3 and a cleaning officer. The instruments in this study used observation sheets and interviews. Data analysis was carried out by means of data reduction, data presentation and drawing conclusions.

**Results:** Inadequate human resources (HR). Standard operating procedures (SOP) at Puri Husada Tembilahan Hospital already exist and are on the way. The Operational Fund for the management of solid medical waste is taken from the capitation fund. The facilities and infrastructure used when managing solid medical waste are safety boxes and trash cans.

**Conclusion:** The stages of sorting, storing and transporting solid medical waste are still not appropriate according to PermenLHK No. 56 of 2015, but the collection stage already meets the requirements of PermenLHK No. 56 of 2015. medical solid waste management at Puri Husada Tembilahan Hospital is not in accordance with the provisions of PermenLHK No. 56 of 2015. Waste management efforts need to be guided by the provisions of PermenLHK No. 56 of 2015.

**Keywords:** Solid Medical Waste Management, Environment

### INTRODUCTION

WHO, (2005). stated that the implementation of medical waste management by officers is very necessary, starting from waste storage to destroying waste in incinerators. In the process of storing medical waste, the bags must not be full, officers are required to check each bag with the same color which has been put together and then sent to the appropriate place that has been provided. This aims to prevent the negative impact of waste management on officers, the environment and the surrounding community(1).

According to the Regulation of the Minister of Health of the Republic of Indonesia, hospitals are health service

providers that carry out medical services, non-medical services, nursing and midwifery services as the main activities to improve the health status of the community(2). Hospitals are one of the public facilities whose activities produce solid medical waste.

Medical Waste, namely all rubbish and waste generated from medical services, dental care, pharmaceuticals, research, treatment, care, or education that uses materials that are toxic, infectious, dangerous, or could be dangerous, unless certain safeguards are taken(3).

Solid waste originating from hospitals can function as a place to spread disease for staff, sufferers and the community. Syringe waste and other waste can be a risk factor for

the transmission of various diseases such as nosocomial infections, HIV/AIDS, hepatitis B and C and other diseases transmitted through the blood. These dangerous impacts can include health problems and pollution(4).

According to Odi (2018), in research on the B3 Hazardous and Toxic Waste management system at the Tobelo Community Health Center, Tobelo City, North Halmahera Regency, it is necessary to create procedures that regulate and assist the process of managing B3 medical waste and it is necessary to implement a process for reducing B3 medical waste so that its management is more optimal(5).

The development of hospitals in Riau Province in the five year period (2016-2020) tends to increase except in 2017 and 2018 which experienced a reduction of 1 private hospital compared to 2016. Private hospitals in Riau province continue to experience development, especially Pekanbaru City, this is in line with the development of Pekanbaru City. The number of public hospitals in Riau Province as of 2020 is 24 units. Different from Public Hospitals, Private Hospitals are managed by BUMN and Private Companies (Individuals, companies and other private companies). In 2020 there will be 50 hospital units in Riau Province(6).

Waste from Puri Husada Tembilahan Hospital is all waste generated by the hospital's activities and other supporting activities. In general, waste at Puri Husada Tembilahan Hospital is medical waste and non-medical waste, both solid and liquid. Based on this, all solid medical waste produced by Puri Husada Tembilahan Hospital is approximately 125 kg/day.

Based on the results of an initial survey conducted by researchers with environmental health program holders by means of interviews at Puri Husada Tembilahan Hospital. In the solid medical B3 waste management process, at the sorting stage, there is no special sorting carried out by cleaning staff. Then the existing rubbish bins do not match the type. Next, at the storage stage, solid medical B3 waste is collected in the B3 room where the storage process takes 3 months. Meanwhile, collection is not in

accordance with the type of container and waste label, there is still non-B3 mixed with domestic waste. Next, the destruction stage is carried out by being transported by a transporter (second party) and taken to the destroyer (third party) if the medical waste has been in the storage room for 3 months. The aim of the research is to determine the solid medical waste management system at the Puri Husada Tembilahan regional general hospital (RSUD) (7).

## METHOD

This research design is qualitative with a research design using an observational design at the Puri Husada Tembilahan Regional General Hospital (RSUD) in January – July 2023.

The research subjects selected in this study were based on consideration of research needs and understanding of the problems being researched, totaling 5 people consisting of the Head of Non-Medical Support Division, Person in Charge of Environmental Sanitation, Nurse, TPS LB3 Officer, Cleaning Service Officer. The instruments in this research used observation sheets and interviews.

## RESULTS

### Human Resources (HR)

Based on the results of observations by conducting in-depth interviews regarding Human Resources (HR), Puri Husada Tembilahan Hospital has 1 environmental health sanitarian, which is estimated to be insufficient because the number of patients in the hospital is quite large as can be seen from the following interview excerpt.

*"No, I haven't fulfilled him yet. We should be more than one, we should be two" (Informant 1)*

The amount of waste produced is quite large and from each room there is also a lot, so the sanitarian department cannot cover all the scope in the hospital. The background of the environmental health assistants is a Bachelor of Public Health who already understands how to manage medical waste in

accordance with Minister of Environment and Forestry Regulation Number 56 of 2015.

### **SOP (Standar Operasional Prosedur)**

Based on interviews with the Puri Husada Regional General Hospital (RSUD), the SOP for implementing solid medical waste management already exists and has been socialized.

*"Yes, it has been implemented, right? For solid medical waste, it has been well organized, because in terms of rooms it has been separated and collected in each room, taken by medical waste processing officers, so every morning it is collected so it is running, more effectively (Informant 2)."*

The implementation of solid medical waste management is in accordance with existing SOPs and can be carried out by officers at Puri Husada Regional Hospital well. Generally, officers think that existing SOPs can make work more effective and efficient.

### **Operational Funds**

Based on the results of observations by conducting in-depth interviews regarding Operational Funds for medical waste management at the Puri Husada Tembilahan Regional General Hospital (RSUD), there are no special funds from the government but only from the BLUD Business Plan and Budget which is in accordance with capitation which is managed by the Hospital itself. itself in the form of a Hospital BLUD.

*"The budget is sufficient and available in accordance with our capitation which manages in the form of Hospital BLUD Hospital finances (Informant 1)"*

According to researchers, the cost factor is the main reason why hospitals, including hospital management, are an obstacle to solid medical waste management installations. As long as the cost of managing solid medical waste is considered expensive, it is very difficult for hospitals to carry out solid medical waste management, because waste

management technology is generally still very expensive, and the operation and maintenance of installations are complicated and complex.

### **Infrastructure**

Based on the research results, the Puri Husada Regional General Hospital (RSUD) has sufficient facilities and infrastructure, but there are still shortcomings such as not having a freezer (air conditioning) and still working with third parties because it does not have waste disposal facilities such as an incinerator.

*"The facilities and infrastructure are sufficient, there is storage space, there is plastic for packaging, there is energy. "But there is a shortage, so we don't have a freezer for old waste, so we need to have one before transporting it (Informant 2)"*

According to researchers, Puri Husada Regional General Hospital (RSUD) must equip the equipment needed to manage solid medical waste in the hospital so that hospital staff can carry out work optimally in accordance with Minister of Environment and Forestry Regulation No. 56 of 2015

### **Solid Medical Waste Sorting**

Based on the results of observations and interview guidelines, it is known that medical waste is solid in the sorting process. The sorting of medical waste is carried out by the room staff concerned, the sorting is carried out in their respective rooms which have been provided with medical and non-medical waste bins.

*"Yes, that's what it looks like when needles are in a box. If needles really have to be in a box because they're easy to get pricked, they shouldn't be put in the trash. "If you put it in the trash, at least the cotton is fine, separate it from the needles (Informant 3)"*

At the sorting stage, the place for medical waste provided is a safety box for used syringes, while for non-medical waste, plastic bins are used. According to

researchers, the sorting process is expected to provide categories/classifications of waste produced by hospitals, making it easier for management officers to proceed to the next stage.

### **Solid Medical Waste Collection**

Based on the results of observations using checklist sheets and interviews at the medical waste collection stage, collection is not carried out routinely so there is a risk of contamination with medical services at the hospital.

*"In the morning I collect them. Currently, people only collect it once every morning, so if we throw it away during the day, we wait until morning before throwing it away, because people don't come down during the day, so it's piled up. There's a special bin for collecting afternoon waste because the bins can't hold it 24 hours. (Informant 5)"*

All solid medical waste collections are also mixed with other solid medical waste. During the collection process, syringes are placed in a leak-proof, puncture-proof and strong manner, namely using a safety box. This is in accordance with Minister of Environment and Forestry Regulation No. 56 of 2015 concerning Hospital Environmental Health requirements, namely that sharp objects should be collected or stored using safety boxes or made of strong materials.

### **Solid Medical Waste Storage**

Based on the results of observations using checklist sheets and interviews at the solid medical waste storage stage, it can be seen that at the Puri Husada Regional General Hospital (RSUD) there is a special place for storing solid medical waste, but this storage place is too small and does not have a freezer (cooler). room). This is not appropriate according to Minister of Environment and Forestry Regulation No. 56 of 2015 (8).

According to Minister of Environment and Forestry Regulation no. 56 of 2015 concerning Procedures and Technical Requirements for Management of Solid

Medical Waste from Health Service Facilities. Solid medical waste management is a process to reduce and/or eliminate dangerous and/or toxic properties. Each room must be provided with a trash can made of strong, rust-resistant, water-tight material that is easy to clean and equipped with plastic bags and symbols and labels such as red for radioactive waste, yellow for infectious and pathological waste, purple for cytotoxic waste, brown for expired chemical waste, spills, or remaining packaging and pharmaceutical waste (8).

### **Transportation of Solid Medical Waste**

Based on the results of observations using checklist sheets and interviews at the solid medical waste transportation stage, it is known that the medical waste transportation stage carried out by cleaning service officers is not appropriate according to Minister of Environment and Forestry Regulation No. 56 of 2015, because officers still do not use Personal Protective Equipment (PPE), namely gloves and only wear masks. Cleaning service officers carry out the transportation process using transportation equipment used for medical waste, which is not in accordance with health requirements, where the waste transportation equipment goes to a temporary disposal site, namely a trash can that has wheels, sometimes the trash sticks to the transportation equipment, it is rarely cleaned, It is rarely dried, and sometimes the trash is lifted directly by the hospital cleaning staff to the hospital's temporary disposal site.

*"There's no special route at the moment because it joins a public road. If the waste is specifically transported by someone from a third party, the medical waste is put straight into plastic and some of it comes in cartons, you just have to transport it once every three months. (Informant 4)"*

The transportation process uses public/visitor routes, thereby disrupting hospital activities. This risks contamination of health workers, reduces aesthetics, and prevents solid medical waste from becoming

a breeding ground for various disease vectors.

## CONCLUSIONS

Human resources (HR) who carry out solid medical waste management in hospitals are still lacking and insufficient. Standard operating procedures (SOP) at the Puri Husada Regional General Hospital (RSUD) already exist and are already in operation and in terms of operational funds for waste management solid medical absence of problems. The infrastructure at the hospital is not yet equipped with the necessary equipment, such as freezers and incinerators. The steps for sorting, storing and transporting solid medical waste are still not appropriate according to Minister of Environment and Forestry Regulation No. 56 of 2015, however, the Collection stage has met the requirements of Minister of Environment and Forestry Regulation No. 56 of 2015. Management of solid medical waste at Puri Husada Tembilahan Hospital is not in accordance with the provisions of Minister of Environment and Forestry Regulation No. 56 of 2015.

## REFERENCES

1. World Health Organization. 2005. Basics: Medical Waste Management Regulations, Environment and Health Medical Waste: Limitations: Indira Gandhi National Open University
2. Asmadi, 2013, Hospital Medical Waste Management, Yogyakarta : Gosen Publishing.
3. Rizki Amalia, Annisa Ismayanti, Ani Rizqiani Rusydi (2020). Management of Solid Medical Waste at the Mamuji Regional General Hospital, West Sulawesi Province. Journal of Health Vol. 3 No. 1 : 073-085.
4. Rahno, et al. (2015). Management of Solid Medical Waste at the Borong Community Health Center, East Manggarai Regency, East Nusa Tenggara Province. Journal of Solid Medical Waste Management at Community Health Centers, Volume. 1, No. 3, 2015.
5. Diana Yulis, Odi Pinontoan, Harvani Boki (2018). B3 Hazardous and Toxic Waste Management System at Tobelo Health Center, Tobelo City, North Halmahera Regency. Journal of Public Health Vol. 7 No. 5 (2018)
6. Riau Province Health Profile (2020).
7. Puri Husada Regional Hospital. Puri Husada Tembilahan Regional Hospital Profile (2022)
8. Regulation of the Minister of Environment and Forestry Number 56 of 2015 concerning Procedures and Technical Requirements for Management of Hazardous and Toxic Waste from Health Service Facilities.
9. Republic of Indonesia Ministry of Health, 2009, Law of the Republic of Indonesia no. 44 of 2009 Article (1) Concerning Jakarta Hospitals: Indonesian Ministry of Health.
10. ICRC. (2011). Medical Waste Management, Geneva.
11. Jufenti Ade Fitri, Rika Mianna (2019). Solid Medical Waste Management System at the Regional General Hospital (RSUD) DR. RM Pratomo Bagansiapiapi Rokan Hilir Regency. Journal of Public Health Sciences Vol.8 No. 1 : 26-34.
12. Ministry of Health of the Republic of Indonesia (2019) Processing Medical Waste at Health Facilities Becomes Special Attention (<https://kesmas.kemkes.go.id/konten/133/0/110514-processing-medical-waste-fasyankes-becomes-perhatian-besar>)
13. Republic of Indonesia Ministry of Health, 2017, 2017 Indonesian Health Profile, Jakarta: Republic of Indonesia Ministry of Health.
14. Regulation of the Minister of Health of the Republic of Indonesia No. 3 of 2020 concerning Hospital Classification and Licensing, Jakarta: Indonesian Ministry of Health.
15. Regulation of the Minister of Health of the Republic of Indonesia No. 24 of 2016 concerning Technical Requirements for Hospital Buildings and Infrastructure, Jakarta:

- Indonesian Ministry of Health.
16. Indonesian Hospital Association (PERSI). KLHK: Medical Waste Throughout Indonesia Reaches 242 Tons per Day. (2018)
  17. Pratiwi, D., & Maharani, C. (2013). Management of Solid Medical Waste at the Pati Regency Health Center. *KEMAS: Journal of Public Health*, 9(1), 74-84.
  18. Law of the Republic of Indonesia no. 32 of 2009 concerning Environmental Protection and Management, Jakarta: Indonesian Ministry of Health.
  19. R.I. Law (1995). Correctional. Jakarta.
  20. Wati, N. A. Pasca & Setia, D. Faradilla & Alfanam, A. (2017). Causes of the Increased Incidence of Dermatitis in Class II B Correctional Institutions (LAPAS), Baru City Regency, South Kalimantan. *Public Health*, 2(April), 33–39.