Study On Medical Solid Waste Management Policy At RSIA Yasmin Palangka Raya

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Abstract.

This study aimed to evaluate the policy of solid medical waste management at RSIA Yasmin Palangka Raya. The main issues faced include discrepancies in packaging, collection, storage, and transportation of medical waste. A qualitative descriptive approach was employed using purposive sampling method to collect data through interviews, observations, and document analysis. The research findings revealed that despite the existence of internal policies, there were inconsistencies with the applicable regulations, particularly in waste packaging, segregation, and transportation. The composition of solid medical waste generated included infectious waste, non-sharp infectious waste, and sharp infectious waste. Policy recommendations are suggested to improve waste segregation, staff training, increase transportation frequency, and upgrade storage facilities. By implementing these recommendations, RSIA Yasmin Palangka Raya can enhance the effectiveness of solid medical waste management in accordance with regulations.

Keywords: *Solid medical waste management; Policy evaluation amd Waste segregation.*

I. INTRODUCTION

Solid medical waste is a crucial issue in the healthcare sector that requires serious attention, particularly in healthcare facilities such as hospitals. Solid medical waste is waste generated from medical services, care, and research activities that has the potential to be infectious, genotoxic, cytotoxic, or otherwise hazardous, posing a threat to public health and the environment. Improper management of solid medical waste can become a source of disease transmission, contaminate water, soil, and air, and endanger healthcare workers, patients, and the surrounding community [1].Maternal and Child Hospitals (RSIA), as a type of healthcare facility, have specific characteristics of solid medical waste. The waste generated comes not only from general operational activities but also from specialized services such as childbirth, obstetrics, infant care, and gynecology services. This waste, such as used syringes, bandages, gloves, body tissues, and chemicals, requires special handling in accordance with applicable procedures [2]. Therefore, a solid medical waste management policy in hospitals is crucial to ensure the safety and health of all parties.The Indonesian government has issued various regulations regarding solid medical waste management, such as Regulation of the Minister of Environment and Forestry Number P.56/Menlhk-Setjen/2015 of 2015 concerning Procedures and Technical Requirements for the Management of Hazardous and Toxic Waste from Healthcare Facilities [3]. This policy emphasizes the importance of integrated sorting, transportation, temporary storage, and processing of solid medical waste. However, implementing this policy at the operational level, particularly in regional hospitals, often faces challenges [4]. These challenges can include limited human resources, inadequate infrastructure, or a lack of understanding of applicable regulations.

Yasmin Mother and Child Hospital (RSIA) Palangka Raya, as one of the providers of specialized maternal and child health services in Central Kalimantan, also faces challenges in managing solid medical waste. With the increasing number of patients and types of services provided, the volume and diversity of solid medical waste generated also increases [5]. This requires an effective, efficient waste management policy that complies with established standards. Researchers are interested in understanding how the solid medical waste management policy at RSIA Yasmin Palangka Raya is implemented, starting from the planning, implementation, and supervision stages. The purpose of this study is to determine the amount of solid medical waste generated and the composition of solid medical waste at RSIA Yasmin Palangka Raya,

analyze the existing conditions of its management and provide strategic recommendations for solid medical waste management to comply with Ministerial Regulation of the Environment and Forestry No. 56 of 2015 and conduct an in-depth study of the solid medical waste management policy at RSIA Yasmin Palangka Raya. The results of this study are expected to provide input and recommendations for the management of RSIA Yasmin Palangka Raya in improving the effectiveness of solid medical waste management, as well as serve as a reference for other hospitals with similar characteristics.

II. METHODS

The research was conducted for 3 (three) months from April to June 2025. A qualitative descriptive approach was chosen to comprehensively and in-depth understand the phenomena that occurred. In supporting data and information acquisition, a purposive sampling method was used. The selected information providers were the Human Resources Development team, the Environmental Health department, and the Cleaning Service. Data were collected through structured interviews with the Environmental Health department, the cleaning service, and continued with confirmation from the Human Resources Development team, using oral questions formulated according to the research objectives. These questions were guided by the procedures for managing solid medical waste at the Community Health Center as stipulated in the Minister of Environment and Forestry Regulation No. P.56/Menlhk-Setjen/2015 [3]. In addition, direct observation was also conducted to closely observe the waste management process, the assessment criteria of which were also based on the same regulation. Aspects observed included packaging and collection, transportation within the Hospital area, storage, transportation outside the Hospital area, and the human resources involved.

III. RESULT AND DISCUSSION

Interviews with the Environmental Health Department and several cleaning staff revealed that Yasmin Palangka Raya Hospital has an internal policy regarding solid medical waste management. This policy aligns with government regulations, such as Regulation No. 56 of 2015 from the Minister of Environment and Forestry [3].The composition of solid medical waste from RSIA Yasmin Palangka Raya is divided into special infectious waste in the form of vials, non-sharp infectious waste, sharp infectious waste as presented in Table 1.

Table 1. Composition of solid medical waste from Yasmin Hospital for Women and Children, Palangka Raya City

Composition of Infectious Waste	Types of Infectious Waste
Vial	Cefotaxime, ceftriaxone, meropenem, sanmol infusion, trogil, cyclofem, triclofem
Non sharp objects	Infusion plates, Folley catheters, NGT, urine bags, infusion tubes, bandages, underpads, sanitary napkins, gloves, masks, surgical dressings, used cotton, alcohol swabs, all waste contaminated with blood and body fluids of patients.
Sharp object	Syringes, syringes, blood lancets, ampoules

This classification of waste composition is important because each type of waste carries a different risk of infection and requires specific handling, packaging, and disposal methods to ensure the safety of staff and prevent the spread of disease. Research conducted [4] found that medical waste frequently generated in treatment areas includes medical masks, gloves, hazmat suits, syringes, disposable sharps, IV bottles, vials, ampoules, head coverings, etc.Measurements on waste generation were carried out for 3 (three) months starting from April 13 – June 22, 2025 as presented in Table 2.

Table 2. Daily solid medical waste generation at Yasmin Women's and Children's Hospital, Palangka Raya City, April – June 2025

ENTRY OF B3 WASTE INTO TPS					B3 WASTE LEAVING FROM TPS
No	Types of B3 Waste Entered	B3 Waste Entry Date	Sources of B3 Waste	Amount of B3 Waste Entering (Kg)	Remaining B3 Waste at TPS
a	b	c	d	e	f
1	Medical	1-Apr-25	Service Unit	9.70	
2	Medical	2-Apr-25	Service Unit	9.50	
3	Medical	3-Apr-25	Service Unit	9.60	
4	Medical	4-Apr-25	Service Unit	9.80	
5	Medical	5-Apr-25	Service Unit	9.40	
6	Medical	6-Apr-25	Service Unit	9.70	
7	Medical	7-Apr-25	Service Unit	9.50	
8	Medical	8-Apr-25	Service Unit	9.60	
9	Medical	9-Apr-25	Service Unit	9.80	
10	Medical	10-Apr-25	Service Unit	9.40	
11	Medical	11-Apr-25	Service Unit	9.50	
12	Medical	12-Apr-25	Service Unit		334,6 Kg
13	Medical	13-Apr-25	Service Unit	7.50	
14	Medical	14-Apr-25	Service Unit	7.80	
15	Medical	15-Apr-25	Service Unit	7.60	
16	Medical	16-Apr-25	Service Unit	7.90	
17	Medical	17-Apr-25	Service Unit	7.70	
18	Medical	18-Apr-25	Service Unit	7.50	
19	Medical	19-Apr-25	Service Unit	8.00	
20	Medical	20-Apr-25	Service Unit	7.60	
21	Medical	21-Apr-25	Service Unit	7.80	
22	Medical	22-Apr-25	Service Unit	7.70	
23	Medical	23-Apr-25	Service Unit	7.50	
24	Medical	24-Apr-25	Service Unit	8.00	
25	Medical	25-Apr-25	Service Unit	7.60	
26	Medical	26-Apr-25	Service Unit	7.90	
27	Medical	27-Apr-25	Service Unit	7.70	
28	Medical	28-Apr-25	Service Unit	7.50	
29	Medical	29-Apr-25	Service Unit	7.85	
30	Medical	30-Apr-25	Service Unit		131,65 Kg
31	Medical	1-May-25	Service Unit	7.40	
32	Medical	2-May-25	Service Unit	8.00	
33	Medical	3-May-25	Service Unit	7.10	
34	Medical	4-May-25	Service Unit	7.60	
35	Medical	5-May-25	Service Unit	7.90	
36	Medical	6-May-25	Service Unit	7.20	
37	Medical	7-May-25	Service Unit	7.50	
38	Medical	8-May-25	Service Unit	8.10	
39	Medical	9-May-25	Service Unit	7.00	

40	Medical	10-May-25	Service Unit	7.80	
41	Medical	11-May-25	Service Unit	7.30	
42	Medical	12-May-25	Service Unit	7.70	
43	Medical	13-May-25	Service Unit	6.90	
44	Medical	14-May-25	Service Unit	8.00	
45	Medical	15-May-25	Service Unit	7.20	
46	Medical	16-May-25	Service Unit	7.50	
47	Medical	17-May-25	Service Unit	8.20	
48	Medical	18-May-25	Service Unit	7.10	
49	Medical	19-May-25	Service Unit	7.60	
50	Medical	20-May-25	Service Unit	7.40	
51	Medical	21-May-25	Service Unit	7.80	
52	Medical	22-May-25	Service Unit	7.30	
53	Medical	23-May-25	Service Unit	8.00	
54	Medical	24-May-25	Service Unit	7.10	
55	Medical	25-May-25	Service Unit	7.70	
56	Medical	26-May-25	Service Unit	7.20	
57	Medical	27-May-25	Service Unit	7.50	
58	Medical	28-May-25	Service Unit	8.10	
59	Medical	29-May-25	Service Unit	7.00	
60	Medical	30-May-25	Service Unit	7.90	
61	Medical	31-May-25	Service Unit	7.40	
62	Medical	1-Jun-25	Service Unit	7.60	
63	Medical	2-Jun-25	Service Unit		242,5 Kg
64	Medical	3-Jun-25	Service Unit	8.90	
65	Medical	4-Jun-25	Service Unit	6.20	
66	Medical	5-Jun-25	Service Unit	9.50	
67	Medical	6-Jun-25	Service Unit	5.80	
68	Medical	7-Jun-25	Service Unit	7.40	
69	Medical	8-Jun-25	Service Unit	8.00	
70	Medical	9-Jun-25	Service Unit	6.10	
71	Medical	10-Jun-25	Service Unit	9.20	
72	Medical	11-Jun-25	Service Unit	5.70	
73	Medical	12-Jun-25	Service Unit	8.50	
74	Medical	13-Jun-25	Service Unit	6.40	
75	Medical	14-Jun-25	Service Unit	9.00	
76	Medical	15-Jun-25	Service Unit	5.90	
77	Medical	16-Jun-25	Service Unit	7.80	
78	Medical	17-Jun-25	Service Unit	8.20	
79	Medical	18-Jun-25	Service Unit	6.00	
80	Medical	19-Jun-25	Service Unit	9.30	
81	Medical	20-Jun-25	Service Unit	5.60	
82	Medical	21-Jun-25	Service Unit	8.40	
83	Medical	22-Jun-25	Service Unit	7.50	
84	Medical	23-Jun-25	Service Unit		150,8 Kg

Sumber : Data Primer, 2025

Based on Table 2, it can be seen that the highest B3 waste generation occurred on April 1, 2025, with a total of 9.70 kg. This figure is the same as that recorded on April 6, 2025. In addition, on April 4, 2025, and April 9, 2025, waste generation was also recorded at 9.80 kg, which is the highest amount recorded, and the lowest B3 waste generation was recorded on June 20, 2025, with a total of 5.60 kg.These daily fluctuations are very common in healthcare facilities. Research by [6] and [7] shows that the greater the number of patients served, both in polyclinics and inpatient settings, the greater the amount of medical waste generated. The generation of hazardous medical waste depends not only on the number of patients but also on the type of services provided.The results of observations made at the packaging and sorting stage and compliance with PermenLHK No. 56 of 2015 are presented in Table 3.

Table 3. Condition and conformity of the packaging and sorting stages of solid medical waste at Yasmin Hospital, Palangka Raya City with the Minister of Environment and Forestry Regulation No. 56 of 2015

Current State	Minister of Environment and Forestry Regulation No. 56 of 2015	Compliant/Inconsistent with Ministerial Regulation of the Environment and Forestry No. 56 of 2015
Medical B3 waste has been sorted according to the type of waste	Separating B3 waste based on type, group and/or characteristics of B3 waste;	In accordance
The color of the container still has many different colors (gray, blue, green, yellow, etc.), but the color of the packaging used has been adjusted to the solid medical waste group, namely only using yellow plastic packaging for all medical waste, the type of waste that is allowed to be disposed of on the lid of the infectious waste container has been detailed and packed with yellow plastic, but is not equipped with any labels or symbols on the container.	Accommodate B3 waste according to the B3 waste group and/or color of solid medical waste packaging: • Yellow: for infectious waste and pathological waste • Brown: for expired chemical waste, spills, or leftover packaging, and pharmaceutical waste • Red: for radioactive waste • Purple: for cytotoxic waste • Puncture-resistant containers: for sharps waste	It is not in accordance with

Based on Table 3, a comparison between existing conditions and Ministerial Regulation No. 56 of 2015, it can be concluded that solid medical waste management at the facility shows varying conditions. The sorting of medical hazardous waste is in accordance with regulations requiring waste separation based on type, group, and characteristics, indicating a basic understanding of the regulations. However, inconsistencies were found in the use of containers and packaging. Although yellow plastic bags were used for solid medical waste, the containers used were still of varying colors (grey, blue, green, and yellow), which contradicts regulations that stipulate specific colors for each type of waste (yellow for infectious, brown for pharmaceutical, and red for radioactive). Therefore, training on hospital waste sorting is necessary for all levels of hospital staff, from doctors and nurses to cleaning staff [8], [9]. Furthermore, even though the details of the type of infectious waste are listed on the container lid, this discrepancy has the potential to increase the risk of mishandling and exposure to hazards, given the importance of visual standards in medical waste management procedures [10].Next, observations made at the in situ collection and transportation stages are presented in Table 4.

Table 4. Condition and conformity of the in situ collection and transportation stages of solid medical waste at Yasmin Hospital for Women and Children in Palangka Raya City with the Minister of Environment and Forestry Regulation no. 56 of 2015

Current State	Minister of Environment and Forestry Regulation No. 56 of 2015	Compliant/Inconsistent with Ministerial Regulation of the Environment and Forestry No. 56 of 2015
The officer did not tie the waste bag tightly and tied it with rabbit ears.	Waste must be prevented from accumulating where it is generated. Waste bags must be closed or tied tightly when they are 3/4 full.	It is not in accordance with
Transportation is carried out twice a day, every morning and afternoon shift,	Waste that must be collected at least daily or as needed and transported to a	In accordance

throughout the hospital area to the B3 Waste TPS.	collection location	
The waste bags that are packaged are not equipped with symbols and labels according to the waste category, only yellow bags as a marker/differentiator that the waste is infectious.	Each waste bag must be equipped with a symbol and label according to the waste category, including information regarding the source of the waste.	It is not in accordance with
Transportation is carried out twice a day, every morning and afternoon shift, throughout the hospital area and cleaning staff always replace the plastic bags with new ones according to color.	Every time a waste bag or container is moved, it must be immediately replaced with a new waste bag or container of the same type.	In accordance
Transportation carried out by cleaning staff using trolleys that meet standards	Waste transportation at health service facility locations can use trolleys or wheeled containers.	In accordance
Waste transport equipment is thoroughly cleaned once a week.	In situ waste transport equipment must be cleaned and disinfected daily using appropriate disinfectants such as chlorine compounds, formaldehyde, phenolic and acid.	It is not in accordance with
Cleaning staff use PPE in the form of masks, nurse caps, and gloves.	Personnel who transport waste must be equipped with clothing that meets occupational safety and health standards.	It is not in accordance with

Based on Table 4, it can be seen that waste management practices in these healthcare facilities still have several inconsistencies with the Regulation of the Minister of Environment and Forestry (PermenLHK) No. 56 of 2015 concerning Procedures and Technical Requirements for the Management of Hazardous and Toxic Waste (B3) from Healthcare Facilities. Although several aspects are in accordance, such as the daily transportation frequency and this is in line with the research of [11] that the medical waste transportation process is the process of moving medical waste from the waste generating source to a temporary storage area using a solid waste cart equipped with a cover. Transportation is carried out using special waste transportation equipment and officers use PPE, as well as the use of standard trolleys, there are several crucial points that are not in accordance.

These include the way the waste bags are tied loosely, the absence of symbols and labels on the waste bags, the lack of use of complete Personal Protective Equipment (PPE), and an inadequate cleaning schedule for transportation equipment (only once a week, not daily). These findings are supported by previous research that highlights the importance of compliance with medical waste management standards [12]. A study by [13] found that mismatched waste labeling and incomplete use of PPE are common problems in healthcare facilities, potentially increasing the risk of infection exposure for staff and the environment. Another study by [14] also confirmed that the hospital studied only cleaned transport equipment once a day after shift changes and irregular cleaning can be a source of cross-contamination, making daily disinfection crucial to breaking the chain of transmission. Therefore, it is crucial for healthcare facilities to undertake continuous improvement and training to ensure that all stages of waste management, from packaging to transport, fully comply with applicable regulations to ensure the health and safety of all parties.

Furthermore, the results of observations and in-depth interviews conducted at the storage stage are presented in Table 5.

Table 5. Condition and conformity of the storage stages of solid medical waste at Yasmin Hospital for Women and Children in Palangka Raya City with the Minister of Environment and Forestry Regulation No. 56 of 2015

Current State	Minister of Environment and Forestry Regulation No. 56 of 2015	Compliant/Inconsistent with Ministerial Regulation of the Environment and Forestry No. 56 of 2015
The B3 Waste TPS has been equipped with a sign stating "Unauthorized Personnel Are Prohibited From Entering"	The storage location is marked “DANGER: MEDICAL WASTE STORAGE – FOR AUTHORIZED PARTIES ONLY”	In accordance

The B3 Waste TPS is located at the very back of the hospital area and far from patient rooms, laboratories and operating rooms as well as areas accessible to the public.	Storage locations must be fixed, away from patient rooms, laboratories, operating rooms, or areas accessible to the public.	In accordance
B3 Waste TPS is placed in a flood-free area	Areas that are flood-free and not prone to natural disasters, or can be engineered with technology for environmental protection and management, if they are not flood-free and prone to natural disasters	In accordance
The floor of the B3 Waste TPS has a concrete floor and is equipped with a good drainage system.	Impermeable floors, concrete or cement floors with a good drainage system, and easy to clean and disinfect	In accordance
The B3 Waste TPS has been equipped with a water source or tap or shower for cleaning.	Water source or water tap available for cleaning	In accordance
Located within the hospital area so it is easily accessible for storing medical waste.	Easy access for waste storage	In accordance
The B3 Waste TPS is equipped with an iron cage and can be locked	Can be locked to prevent access by unauthorized parties	In accordance
Because the TPS is located behind the hospital building, third-party waste collection vehicles cannot directly access it. Therefore, waste collection officers weigh and manually collect medical waste directly from the TPS (lifting it out).	Easily accessible by vehicles that will collect or transport waste	It is not in accordance with
The B3 Waste TPS building is equipped with a roof, cage and good ventilation.	Protected from sunlight, rain, strong winds, floods and other factors that have the potential to cause accidents or work disasters	In accordance
The B3 Waste TPS building is equipped with a roof, cage and good ventilation, however not all parts of the cage and cover are covered with wire mesh so that it can be accessed by animals, insects and birds.	Inaccessible to animals, insects and birds	It is not in accordance with
The B3 Waste TPS building is equipped with excellent lighting with LED lights and good ventilation.	Equipped with good and adequate ventilation and lighting	In accordance
The TPS building for B3 Medical Waste is located close to the nutrition/kitchen room	A distance from food storage or preparation areas	It is not in accordance with
In the TPS for B3 waste/medical waste, there is a PPE box available	Cleaning equipment, protective clothing, and waste containers or bags should be located as close as possible to the storage facility location.	In accordance
The B3 Waste TPS was in a clean condition at the time of observation and was frequently cleaned by cleaning staff every day.	The walls, floors and ceilings of the storage facility are kept clean at all times, including daily floor cleaning.	In accordance

Based on Table 5, it can be concluded that in general, the condition of the Temporary Storage Area (TPS) for Hazardous and Toxic Waste (B3) in the health facility is quite good and the majority have met the technical requirements stipulated in the Regulation of the Minister of Environment and Forestry (PermenLHK) No. 56 of 2015. Aspects that are in accordance include clear markings, a strategic location (away from patients and public areas), sturdy and flood-free building construction, and supporting facilities such as waterproof floors, drainage systems, and the availability of water for cleaning [15], [16], [17]. However, there are three significant non-conformities that require serious attention. First, access to the TPS does not allow for direct access by third-party transport vehicles, thus requiring manual transport, which has

the potential to increase the risk of exposure and work accidents for officers. Therefore, the collection and transport process by cleaning staff requires training so that the regulations or rules in force can be implemented correctly [18]. Second, the TPS building is not fully enclosed with wire mesh, which allows animals, insects, and birds to enter, thus risking the spread of infection. Third, the TPS location adjacent to the nutrition/kitchen room is very dangerous because of the potential for cross-contamination between medical waste and food. This finding is in line with research results showing that although many health facilities have met basic standards, minor violations are still frequently found that have a major impact on safety and health [19]. As revealed by [20], who highlighted that based on existing findings, a person's level of occupational health is influenced by several key factors, namely work experience, availability of Personal Protective Equipment (PPE), number of family members, and length of working hours. Therefore, improvements in these aspects are crucial to ensure safe, effective, and regulatory-compliant medical waste management.

Furthermore, the results of in-depth observations throughout the area and in-depth interviews with the hospital's environmental health department conducted at the ex situ transportation stage are presented in Table 6.

Table 6. Condition and conformity of the ex-situ transportation stage of solid medical waste at Yasmin Hospital, Palangka Raya City with the Minister of Environment and Forestry Regulation No. 56 of 2015

Current State	Minister of Environment and Forestry Regulation No. 56 of 2015	Compliant/Inconsistent with Ministerial Regulation of the Environment and Forestry No. 56 of 2015
The means of transportation owned by a third party collaborating with RSIA Yasmin, namely PT. MULI, already has a permit to carry out transportation activities.	Using B3 Waste transportation equipment that has obtained a B3 Waste Management Permit for B3 Waste Transportation activities.	In accordance
The means of transportation owned by a third party collaborating with RSIA Yasmin, namely PT. MULI, has been affixed with the B3 symbol on all four sides of the vehicle.	B3 waste symbols are attached to all four sides of the vehicle according to the characteristics of the B3 waste being transported.	In accordance
PT. MULI has a B3 waste manifest for each transportation.	Have a B3 waste manifest	In accordance
The transportation equipment owned by a third party collaborating with RSIA Yasmin, namely PT. MULI, has included the company's telephone number on all four sides of the transportation vehicle.	Include the company telephone number on the right, left and rear sides of the vehicle.	In accordance
The transportation equipment owned by a third party collaborating with RSIA Yasmin, namely PT. MULI, has included the company name on all four sides of the transportation vehicle.	Company name on all four sides of the vehicle	In accordance
Transport implementation officer from PT. MULI wears complete PPE when carrying out transportation	Officers transporting medical waste are required to use complete Personal Protective Equipment (PPE).	In accordance

The ex-situ transportation phase has been implemented in accordance with applicable regulations. Storage and sterilization of hazardous medical waste according to standards is crucial. This procedure is crucial to protect medical and non-medical personnel from the risk of disease transmission when handling waste, from collection to storage and processing [19]. Yasmin Women and Children's Hospital, Palangka Raya, collaborates with a third party, PT. Mitra Utama Limbah Industri, to transport it to the disposal site, PT Global Enviro Nusa. This research aligns with [21] that medical waste processing is handled by a third party. Transportation is carried out a maximum of twice a month, so the transportation mechanism waits for the hazardous waste disposal site (TPS) to become plentiful before transporting it. The condition of the hazardous waste disposal site (TPS), as shown in Figure 1, appears neat and clean because the transported waste is always stored in closed containers, and there is cold storage to store hazardous waste at temperatures below 0°C at the Yasmin Women and Children's Hospital, Palangka Raya.

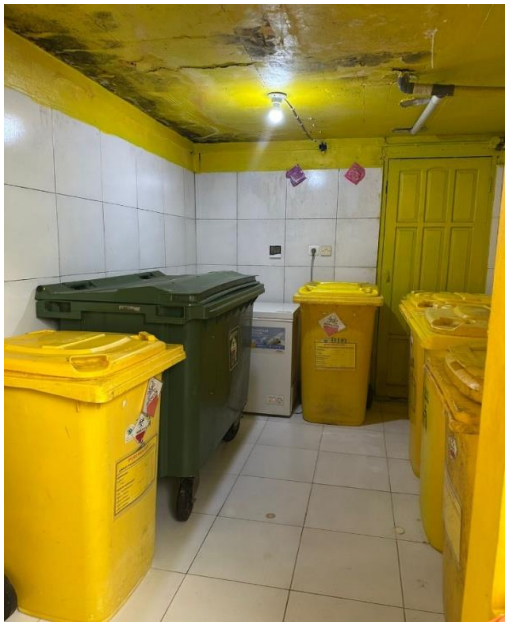

Fig 1. Existing conditions in the medical B3 waste disposal site at Yasmin Palangka Raya Hospital

Table 7. Recommendations for solid medical waste management policies at Yasmin Palangka Raya Women's and Children's Hospital

No	Recommendation
1.	Packaging and Sorting Stage
	• Replace all waste containers with standard color codes: yellow for infectious and pathological waste, brown for pharmaceutical waste, red for radioactive waste, and purple for cytotoxic waste. This will facilitate visualization and prevent missorting; • Require all waste containers and packaging to be clearly labeled according to the waste category. Labels should include important information such as the type of waste and its source;If some medical waste can be processed on-site, this will reduce the amount sent to the incinerator, which also reduces shipping risks. On the other hand, single-use medical devices are typically made from high-quality raw materials; pre-sorting them will significantly reduce the volume of waste thrown away [22].
2.	*In Situ* Collection and Transport
	• Conduct regular training for all cleaning staff on how to securely tie waste bags in accordance with the packaging procedures outlined in Ministerial Regulation No. 56 of 2015 [3]; • Implement daily disinfection procedures for waste transport trolleys after each use. Provide appropriate disinfectants, such as chlorine compounds, and ensure strict adherence to these SOPs to prevent cross-contamination; • Provide and require staff to wear complete personal protective equipment (PPE), including masks, goggles or face shields, aprons, and boots.
3.	Storage
	• Re-evaluate the layout of the waste disposal site (TPS) and access roads leading to it. If possible, create a dedicated access route so that third-party waste transport vehicles can directly access the TPS area. • Install wire mesh throughout all parts of the TPS enclosure and doors. Ensure there are no gaps that could allow animals or insects to enter. This is a crucial step to prevent the spread of infection.

	• If relocating the TPS to a location further away from the nutrition room is not possible, implement complete isolation by constructing a sturdy, impermeable boundary wall. This measure is necessary to eliminate the risk of cross-contamination between hazardous medical waste and food preparation areas.
4.	*Ex Situ* Transportation
	• It is recommended that the frequency of B3 waste transportation from third parties be more frequent in accordance with the regulations required in [23] and [24], because the length of storage of B3 waste for types of waste with infectious, sharp, and pathological characteristics in hospitals before B3 Waste Transportation, B3 Waste Processing, and/or B3 Waste Disposal, must meet the following requirements: a) Medical waste in the infectious, pathological, and sharp categories must be stored at a TPS at a temperature of less than or equal to 0oC (zero degrees Celsius) for up to 90 (ninety) days; b) Medical waste classified as infectious, pathological, and sharps can be stored at the TPS at a temperature of 3 to 8°C (eight degrees Celsius) for up to 7 (seven) days. • Third-party transportation depends on volume; ensure the cold storage available at the TPS is functioning optimally and has sufficient capacity to accommodate the waste before transport.
5.	Human Resources
	• The environmental health or sanitation department needs to implement ongoing and/or routine training and education programs for cleaning staff regarding packaging and sorting procedures, cleaning and disinfection procedures for cleaning trolleys, and procedures for using complete PPE in accordance with hospital SOPs and applicable regulations. This training can be conducted at least once every three months; • Hospital sanitation/K3 staff need to conduct internal monitoring of cleaning staff's compliance with the applicable SOPs; • There needs to be a concise, clear, and easy-to-understand Standard Operating Procedure (SOP) [25]. These SOPs should be displayed in visual form (posters or infographics) in every waste-generating area, such as treatment rooms, laboratories, and waste disposal sites. This will serve as a daily reminder for field staff, and these SOPs should also be disseminated to all hospital employees; • Regular PPE inventories should be conducted to ensure the quantity needed matches field usage and that they are always in good condition and complete.

Reducing medical waste in hospitals requires several important steps. Waste segregation must begin at the source, involving nurses as the frontline, and supported by a strong commitment from all levels of management [26], [27]. Regular and comprehensive training for waste management staff and all hospital employees is also crucial, and attendance and active participation in this training should be part of the annual performance appraisal [28]. All these efforts must be supported by education, training, commitment from management authorities, adequate waste treatment facilities, and consistent regulatory enforcement [29].

IV. CONCLUSION

Based on comprehensive research conducted at RSIA Yasmin Palangka Raya regarding solid medical waste management, several main conclusions can be drawn:

The hospital has established internal policies for managing solid medical waste in accordance with government regulations, such as Regulation of the Minister of Environment and Forestry No. 56 of 2015. This demonstrates a basic understanding of the regulatory framework. Proper sorting and handling of this type of waste is crucial to ensure the safety of healthcare workers and prevent disease transmission. Daily solid medical waste generation fluctuates, influenced by factors such as the number of patients and the type of services provided. Fluctuations in waste generation highlight the importance of efficient waste management practices.Observations revealed both compliance and non-compliance with the Ministerial Regulation at various stages of waste management, such as packaging and sorting, collection and transportation, storage, and external transportation.

Addressing these non-compliances is crucial to improving the overall effectiveness of waste management. Recommendations for policy improvement include standardizing the color of waste containers, ensuring proper labeling, improving training for waste handling staff, optimizing the frequency of waste transportation, and improving storage facilities to prevent the risk of cross-contamination.In conclusion, the findings of this study emphasize the importance of strict adherence to waste management regulations, ongoing staff training, and continuous improvement in waste handling practices to ensure the safety of healthcare workers, patients, and the environment. By implementing the recommended policy changes, RSIA Yasmin Palangka Raya can improve its solid medical waste management practices and serve as a model for similar healthcare facilities facing similar challenges.

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