COMPREHENSIVE HEALTH CARE e-ISSN : 2722-1563 p-ISSN : 2580-7137

Angraeni.F.,Fransiskus.Y.,Hamdan.D.F.,Rosdiana
Comprehensive Health Care, 9 (2025) 122-127
https://ojs.stikespanritahusada.ac.id/index.php/chc/Index

Evaluation Of The Medical Waste Management System At Bintang Laut Hospital Palopo

Faradiba Anggreni[1]*, Yosua Fransiskus[1], Dian Furqani Hamdan[1], Rosdiana[1]
Faculty of Health Sciences Mega Buana Palopo University

Article Info
Article History:
Received: 7 August 2025
Revised: 15 August 2025
Accepted: 20 August 2025

*Corresponding Author:
skm@umegabuana.ac.id

DOI :
https://doi.org/10.37362/chc.v9i2.577

P- ISSN : 2722-1563
E -ISSN : 2580-7137

ABSTRACT

Background: The medical waste management system at Bintang Laut Hospital, Palopo is implemented to ensure that all medical waste is handled safely and according to regulations. This evaluation covers various aspects, including waste segregation, containment, temporary storage, transportation, and final disposal. Therefore, it is important to evaluate how medical waste is managed at Bintang Laut Hospital by conducting a direct approach to relevant staff in order to gain a deeper understanding. **Method:** The research used is qualitative study, with data sources obtained from informants through direct interviews. **Results:** The level of knowledge obtained by informants showed that all had a fairly good knowledge of waste. Compliance in the waste management process was also very good. Medical waste management procedures at Bintang Laut Hospital have also been carried out well. This can be seen from the comprehensive process of sorting, containerization, temporary storage, transportation, and final processing. Waste sorting at Bintang Laut Hospital was deemed to be in accordance with the results of an average response of Yes 87% of the total 3 questions. Waste containers were also provided in accordance with standards with an average response of Yes 93.33% of the total 3 questions. At the temporary storage stage, the response of Yes reached 57% of the total 4 questions, indicating that most were in accordance, but there were still several things that needed attention. For the transportation and final processing of medical waste, the hospital collaborated with a third party, namely PT. Bintangmas Cahaya Internasional. This was done because the hospital did not yet have a waste processing machine/incinerator. **Conclusion:** Medical waste management at the hospital meets the required criteria. However, there is a shortcoming in the temporary storage process, which should not exceed 2 x 24 hours. In practice, this regulation is not met, as the third party collects the waste only once a month, which can lead to waste decomposition.

Keywords: Hospital; Management; Medical Waste

INTRODUCTION

Medical waste is waste generated from medical activities that poses potential hazards due to its infectious, toxic, or environmentally and human health–threatening nature. This waste may include infectious, pathological, sharps, chemical, pharmaceutical, cytotoxic, radioactive, and domestic waste. The WHO estimates that 233,600 tons of medical waste were produced from the use of PPE, COVID-19 test kits, syringes, and safety boxes. The WHO also estimates around 16 billion injections are administered worldwide every year; if safety precautions are not followed, the risk of sharps injuries among healthcare workers will increase.

An evaluation of the medical waste management system at Bintang Laut Hospital

Palopo was conducted to ensure that all medical waste is handled safely and in accordance with applicable regulations. This evaluation covers various aspects, from segregation, containment, temporary storage, transportation, to final disposal. Therefore, it is important to evaluate how medical waste management is implemented at Bintang Laut Hospital Palopo qualitatively by engaging directly with relevant parties to obtain deeper understanding

MATERIALS AND METHODS

This study employed qualitative methods. This method was used to evaluate the medical waste management system at Bintang Laut Hospital, Palopo, based on applicable standard indicators and regulations, and to provide an in-depth description of the implementation of medical waste management in the field. Samples were taken through interviews and questionnaires, selecting respondents most involved in medical waste management.

The population in this study was the personnel directly involved in the medical waste management process at Bintang Laut Hospital, including cleaning staff and medical personnel. The sample was drawn using an interview technique, selecting respondents deemed to have the most significant role in medical waste management.The sample size was 30 individuals, consisting of: 10 cleaning staff and 20 medical personnel from various units

RESULTS

Table 1 shows that the characteristics of respondents are based on age, most of them are 20-30 years old with a total of 17 respondents (57.30%) and the characteristics of respondents by Education show that the most data is Diploma, 12 respondents (40.0%).

Table 1. Characteristics of Respondents based on age and gender (n= 30)

Characteristics		Frequency (n)	Percentage (%)
Age (year)	20-30	17	57
	31-40	12	42
	41-50	1	1
Education	Senior High School	10	35
	Diploma	12	40
	Bachelor	8	25

Table 2 shows that the highest level knowledge about what is included in the category of infectious medical waste in hospitals is appropriate is a total of 25 people (83.0%) while the highest level of Level of compliance is a total of 20 people (67.0%).

Table 2. Level Of Knowledge and Compliance

Knowledge and Compliance		Frequency (n)	Percentage (%)
Knowledge	Yes	25	83
	No	5	17
	Total	**30**	**100**
Compliance	Yes	20	67
	No	10	33
	Total	**16**	**100**

The study revealed that the informants' characteristics were as follows: 17 respondents aged 20–30 years, 12 respondents aged 31–40 years, and 1 respondent aged 41–50 years. Ten respondents had completed senior high school, 12 held a diploma, and 8 held a bachelor's degree. In terms of length of service, 5 respondents had worked for less than 1 year, 15 respondents for 1–5 years, 7 respondents for 6–10 years, and 3 respondents for more than 10 years. Waste segregation at Bintang Laut Hospital was assessed as compliant, with an average "Yes" response of 87% from a total of 3 questions. Waste containment was also deemed compliant with standards, with an average "Yes" response of 93.33% from 3 questions. Regarding temporary storage, the "Yes" response reached 57% from a total of 4 questions, indicating that while most procedures are appropriate, some areas require further attention.

DISCUSSION

Medical waste is the residue of medical activities, both biological and non-biological, generated by healthcare facilities such as hospitals, clinics, community health centers, and laboratories. Medical waste can include blood, bodily fluids, body tissue, or contaminated medical equipment such as syringes, gauze, and IV lines. Because it potentially contains hazardous substances, medical waste is categorized as Hazardous and Toxic Materials (B3).

From interviews and questionnaires conducted by researchers on waste knowledge, it was found that informants had a good understanding of waste and its procedures. As stated by the informant: "*Medical waste or B3 waste is all waste containing hazardous and toxic substances that can harm human health and the environment*" (LC, 32, Nurse).

Waste from the medical field can be classified as hazardous and toxic waste (B3) which has a negative impact if the environment and living creatures in it are directly contaminated. Compliance with medical waste management refers to following established procedures and regulations for handling, processing, and disposing of medical waste. The goal is to minimize the health and environmental risks posed by medical waste.

From interviews and questionnaires conducted by researchers regarding compliance with waste management, it was found that all respondents were compliant with proper waste management. As the informants stated when asked, "Do you always use personal protective equipment (PPE) when handling medical waste?" "*Yes." (WP, 35 years old, Nurse) "Always." (H, 33 years old, Nurse)*.

Interviews with 30 informants concluded that compliance with the use of PPE in medical waste management was good. By improving compliance with medical waste management, we can protect human health and the environment from the negative impacts of medical waste. From the results of interviews and questionnaires conducted by researchers regarding waste management procedures, information was obtained that waste at Bintang Laut Hospital has been managed well in accordance with applicable procedures.

Hospital operations generate liquid waste, which is managed and processed using a Wastewater Treatment Plant (WWTP). It is the responsibility of WWTP personnel to ensure that waste management meets hospital standards, which are in line with Indonesian environmental laws.

According to informants, Bintang Laut Hospital utilizes a WWTP system for liquid medical waste management. All sources of liquid medical waste, including kitchens, treatment rooms/polyclinics, restrooms/bathrooms, and other units/installations, are channeled through a fiber filter (bar screen) to filter the waste. After screening, the wastewater is then channeled to a pre-settling tank, where sediment particles, sand, and other debris are deposited. In addition to its role as a sedimentation tank, it also serves as a flow control tank, a tank for decomposing organic compounds in solid form, a sludge digestion tank, and a sludge reservoir.

CONCLUSIONS

Based on the results obtained from the three variables used—Knowledge, Compliance, and Waste Management Procedures—it can be concluded that the medical waste management system at Bintang Laut Hospital is well implemented and effective. It is recommended that Bintang Laut Hospital allocate a budget for the procurement of an incinerator to further optimize its medical waste treatment

REFERENCES

Abidin, I. S., & Marpaung, D. H. S. (2021). Observasi penanganan dan pengurangan sampah di Universitas Singaperbangsa Karawang. *Jurnal Justitia Jurnal Ilmu Hukum dan Humaniora*, *8*(4), 872-882.

Amariglio, A., & Depaoli, D. (2021). Waste management in an Italian Hospital's operating theatres: An observational study. *American journal of infection control*, *49*(2), 184-187.

Anatolia, L., & Bakta, I. M. (2022). Sistem Pengelolaan Limbah Padat di Fasilitas Layanan Kesehatan: Systematic Review. *Jurnal Pendidikan dan Konseling (JPDK)*, *4*(5), 881-893.

Azmi, N. T., & Hendrasarie, N. (2023). Evaluasi Pengelolaan Limbah Medis Padat B3 Rumah Sakit Kelas A, B, C, dan D. *Envirous*, *3*(2).

Asrun, A. M., Sihombing, L. A., & Nuraeni, Y. (2020). Dampak Pengelolaan Sampah Medis dihubungkan dengan Undang- undang No 36 Tahun 2009 Tentang Kesehatan dan Undang-undang No. 32 Tahun 2009 Tentang Perlindungan dan Pengelolaan Lingkungan Hidup

Ferawati, F., Ikhtiar, M., & Gobel, F. A. (2022). Pengelolaan Limbah Infeksius Pada Masa

Pandemi Covid-19: Infectious Waste Management During the Covid-19 Pandemic. *Journal of Muslim Community Health*, *3*(1), 153-165.

Habibi, R. J. Y. J. (2020). Studi Tentang Pengelolaan Limbah Medis Di Rumah Sakit Sahabat, Kabupaten Pasuruan. *Jurnal Mitra Manajemen*, *4*(9), 1417-1429.

Kusumaningtiar, D. A., Irfandi, A., Azteria, V., Veronika, E., & Nitami, M. (2021). Tantangan limbah (sampah) infeksius covid-19 rumah tangga dan tempat-tempat umum. *Jurnal Pengabdian Masyarakat AbdiMas*, *7*(2), 87-88.

Kusumawardhani, O. B., Putri, T. K., & Ayu, A. K. (2023, June). Perilaku petugas dalam pengelolaan sampah medis di rumah sakit: Literature review. In *Prosiding Seminar Informasi Kesehatan Nasional* (pp. 322- 328).

Lestari, S. S. D. M. (2023). Gambaran Manajemen Pengelolaan Limbah Padat Medis Di Rumah Sakit Ibnu Sina Makassar= Overview Management of Medical Solid Waste Management at the Ibnu Sina Hospital Makassar

Mitta, S. S. (2022). Literature Review: Permasalahan Pengelolaan Limbah B3 Medis Padat Covid-19 Di Rumah Sakit Indonesia. *Researchgate. Net, no*.

Nugraha, C. (2020). Tinjauan Kebijakan Pengelolaan Limbah Medis Infeksius Penanganan Corona Virus Disease 2019 (Covid-19). *Jurnal Untuk Masyarakat Sehat (JUKMAS)*, *4*(2), 216-229.

Nurwahyuni, N. T., Fitria, L., Umboh, O., & Katiandagho, D. (2020). Pengolahan limbah medis COVID-19 pada rumah sakit. *Jurnal Kesehatan Lingkungan*, *10*(2), 52-59.

Oktariana, R., & Kiswanto, K. (2021). Evaluasi Sistem Pengelolaan Limbah Padat (Medis dan Non Medis) Rumah Sakit Teungku Peukan Kabupaten Aceh Barat Barat Daya. Jurnal Biology Education, 9(2), 123-133.

Palita, F. B., Purnaweni, H., & Luqman, Y. (2024). Evaluasi Sistem Pengelolaan Limbah Medis Padat Di Rumah Sakit Umum Daerah Undata Kota Palu. *Jurnal Reka Lingkungan*, *12*(1), 51-61.

Pradnyana, I. G. N. G., & Mahayana, I. M. B. (2020). Hubungan Pengetahuan Dan Sikap Dengan Perilaku Perawat Dalam Pengelolaan Sampah Medis Di Rumah Sakit Daerah Mangusada Kabupaten Badung. *Jurnal Kesehatan Lingkungan (JKL)*, *10*(2).

Prasetiawan, T. (2020). Permasalahan limbah medis covid-19 di indonesia. *Info Singkat*, *12*(9), 13-18.

Rachmat, R., & Nadjib, M. (2022). Implementasi kebijakan pengelolaan limbah medis

infeksius pada era Covid-19: A Systematic review. *Journals of Ners Community*, *13*, 449-458.

Riyanti, R. D. (2024). Laporan Pkm- Evaluasi Sistem Pengelolaan Limbah Padat Medis Di Rsud 45 Kuningan

Sandria, D., Harokan, A., & Wahyudi, A. (2023). Analisis Perilaku Petugas Kesehatan Terhadap Penanganan Limbah Medis Tajam Di Rumah Sakit Ernaldi Bahar Provinsi Sumatera Selatan Tahun 2023 *Jurnal Kesehatan Saelmakers PERDANA (JKSP)*, *6*(2), 291-301.

Setyawan, F. E. B., & Supriyanto, S. (2020). *Manajemen rumah sakit*. Zifatama Jawara.

Sukmawati, S., & Dahlan, M. (2022). Manajemen pengelolaan limbah rumah sakit umum daerah Polewali di masa pandemi covid-19. *JI-KES (Jurnal Ilmu Kesehatan)*, *5*(2), 180-189.

Sutedi, B., Mulya, W., & Pratamasari, I. (2024). Pengelolaan Limbah Medis Padat Di Rumah Sakit Restu Ibu Kota Balikpapan. *Identifikasi*, *10*(1), 175-180.

Ukas, U. (2024). Urgency For Implementinggovernment Regulation No. 22 Of 2021 In Relation To Environmental Management Arrangements In Batam City. *Jurnal Cahaya Keadilan*, *12*(1), 89-100.

Valonda, D., & Hermawati, E. (2022). Pengelolaan limbah medis padat rumah sakit pada masa pandemi covid-19 di RSUD Koja Jakarta. *Avicenna: Jurnal Ilmiah*, *17*(1), 14-20.

Wilhemina, A., Amedumey, P., & Raphael, G. B. H. (2022). Solid waste management in hospitals: A comparative assessment in some selected hospitals in Obuasi Municipality of Ghana. *Cleaner Waste Systems*, *3*, 100025.