

# Management of Solid Hazardous and Toxic Waste (LB3) in Puskesmas, Tulungagung District

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## Management of Solid Hazardous and Toxic Waste (LB3) in Puskesmas, Tulungagung District

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### ABSTRACT

Public Health Center waste is considered as a link in the chain of transmission of infectious diseases. Waste can contain toxic chemicals and sharp objects that can cause health problems and injuries. The purpose of this study was to explore the management of solid hazardous and toxic waste (LB3) at the Tulungagung District Health Center. The design of this study was qualitative research with a phenomenological approach with a research focus directed at exploring the management of solid hazardous and toxic waste (LB3) at the Tulungagung District Health Center. In addition, with a qualitative approach it is hoped that the situation and problems encountered in the activity can be disclosed. The informants in this study were 22 (twenty two) Sanitarians in the Public Health Center with source triangulation. The management of solid Hazardous and Toxic Waste (LB3) at the Tulungagung District Health Center is quite good, where in terms of sorting the health center has implemented the standards that apply at the local health office, namely by preparing separate containers and containers that are safe from any contamination, then in terms of storage the health center has also implemented an effective storage system. However, there are some drawbacks starting from transportation, where in terms of transportation to the destruction of waste, most health centers cooperate with third parties, however, transportation is carried out by parties when it is not in accordance with standards where there is often a delay in transporting waste so that it accumulates in the environment for some time health center, apart from that during transport it also keeps the health center workers busy by collecting them outside of the health center working hours.

### I. Introduction

Puskesmas waste is considered as a link in the chain of transmission of infectious diseases. Waste can be a place for disease organisms to accumulate and become a nest for insects and rats. Besides that, the waste also contains various toxic chemicals and sharp objects



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that can cause health problems and injuries. Dust particles in waste can cause air pollution which will spread disease germs and contaminate medical equipment and food. Puskesmas waste can be divided into non-medical waste and medical waste. Non-medical waste has characteristics such as waste generated by the household environment and the community environment in general. This non-medical waste in the Puskesmas environment can come from offices/administration, service units, nutrition units/kitchens and courtyards. (Menteri Kesehatan Republik Indonesia 2019).

Medical waste is waste originating from medical services, dental care, pharmacy or the like, research, treatment, care or education that uses materials that are toxic, infectious, dangerous or potentially dangerous, unless certain safeguards are carried out. (Adisasmito W, 2017).

According to Permen LHK Number P.56/Menlhk-Setjen/2015 concerning Procedures and Technical Requirements for the Management of Hazardous and Toxic Waste from Health Service Facilities, it is stated that Hazardous and Toxic Waste (B3) is the residue from a business and or activity in the form of a substance, energy and/or other components which because of their nature, concentration and/or amount, either directly or indirectly, can pollute and/or damage the environment, health and survival of humans and other living things. Puskesmas as one of the Health Service Facilities (Fasyankes) are required to manage the B3 waste generated starting from the stages of reduction and sorting, storage, transportation, processing, burial to landfilling. (Menteri Lingkungan Hidup dan Kehutanan Republik Indonesia 2015). Based on the conditions above, the authors are interested in researching the management of solid hazardous and toxic waste (LB3) at the Tulungagung District Health Center.

## II. Methods

The design of this research is qualitative research with a case study approach with a research focus directed at exploring the management of solid hazardous and toxic waste (LB3) at the Tulungagung District Health Center in a triangulation manner. In addition, with a qualitative approach it is hoped that the situation and problems encountered in the activity can be disclosed. The research was carried out in September - December 2022 with locations at the Puskesmas in the Kab. Tulungagung. The informants in this study were 22 (twenty two) Community Health Center Sanitation Officers with source triangulation carried out by semi-structured interviews which fall into the category in-depth interview. (Sugiyono 2013).

## III. Results And Discussion

### Reduction, Sorting, Storage and Transportation in Solid Waste Management of Hazardous and Toxic Materials (LB3) at the Tulungagung District Health Center

Waste management carried out by the Puskesmas in Tulungagung Regency starting from sorting, storage and transportation will be explained one by one. Starting from segregation where the puskesmas has implemented separate waste containers for each category such as for wet waste, dry waste, medical waste, solid infectious waste or solid B3 and liquid infectious waste or liquid B3.

Storage of waste from the health center is carried out any time it is taken by a third party. Storage carried out by the health center is basically in accordance with the regulations or rules that apply, but often occurs for up to several days due to the slow transportation factor. The transportation of waste from most of the health centers in Tulungagung Regency is carried out by third parties, so that the waste disposal is also carried out by third parties.

Problems related to the processing of solid B3 waste often occur as a result of the lack of professionalism of third parties who process the waste. Where at the time of transportation it is often late than it should be so that waste accumulates longer at TPS puskesmas, besides that

third parties often collect waste outside working hours making it difficult for puskesmas officers on duty.

The puskesmas waste container is a type of garbage container used in the puskesmas. Meets the requirements the materials used are not waterproof, tightly closed, easy to clean, easy to empty or transport, equipped with plastic bags, resistant to sharp and sharp objects and spread evenly in every part.

Collection is an effort to collect waste originating from various medical waste-producing sources in each section or room at the puskesmas, then it is taken to the B3 Medical temporary shelter (TPS). Meets the requirements of using a closed cart, collection is based on the type of waste, garbage is collected every day, nothing is scattered during collection, the waste is immediately transported to TPS.

Collection of medical waste is the process of collecting medical waste that starts from the medical waste collection site from the waste source to the temporary collection point or directly to the final disposal site. Collection of medical waste the more often the better, it's just that it's usually not small and it's not effective and efficient.

Medical waste transportation is an activity carried out by medical waste transporters who carry waste from health facilities to processing sites. Meets the requirements not to disturb the roads at the health center, the trolley used inside must be flat and watertight, easy to clean and empty, the trash in the container is easy to transport to the trolley and transferred to the car from the transporter.

Medical waste bags are collected and separated according to color code. Transportation by special vehicles (Cooperation with PT. PR1A) The vehicles used to transport the medical waste should be emptied and cleaned every day, if necessary (for example if there is a leakage of medical waste bags) cleaned using a chlorine solution.

According to researchers, hazardous and toxic waste (LB3) is a very dangerous waste if it contaminates the surrounding environment. Good waste handling can minimize the impact of environmental pollution. The emergence of various kinds of diseases and environmental damage is the result of landfills by human activities that are not managed properly. In addition, if it contaminates living things it is also very dangerous. The management of solid B3 waste at the Tulungagung District Health Center is quite good, however, there are several deficiencies starting from transportation, where in terms of transportation, most of it is carried out by third parties, however the transportation is carried out by parties when it is not in accordance with standards where delays in the transportation of waste often occur so that some time piled up in the puskesmas environment, apart from that during transportation it also kept the puskesmas health workers busy by collecting them outside of the puskesmas' working hours.

#### **Behavior, Communication, Anxiety and Negligence in Solid Waste Management of Hazardous and Toxic Materials (LB3) at the Tulungagung District Health Center**

Waste treatment officers at the Tulungagung District Health Center are currently very evenly distributed, and waste treatment has also been contracted with third parties so that the maximum waste treatment is only in waste storage at the TPS Puskesmas. The behavior of the officers regarding the duties carried out was quite good, but not all health centers in Tulungagung Regency contracted with third parties regarding the transportation of waste destruction, specifically for several health centers that were far from the city or in remote areas because it was difficult to reach. However, waste management is still carried out even though independently by destroying it using an incinerator at each health center.

Because it involves third parties, sometimes the puskesmas staff are worried about pollution or the impact on the environment due to the accumulation of waste which takes a relatively long time and also sometimes some of the waste is scattered due to the large size of the vehicles used for waste transportation. So that officers from third parties can be said to be negligent in carrying out the tasks assigned according to the applicable contract.



### **Reward And Reinforcement In the Management of Solid Hazardous and Toxic Waste (LB3) at the Tulungagung District Health Center**

An officer is someone who works to meet basic human needs, so that acknowledgement, appreciation or encouragement is needed by waste treatment officers. For gifts reward there hasn't been any until now where judging from their good or poor performance they still won't get a reward.

Officers do not get reward materially but in terms of encouragement or support the officers got it both from the management of the puskesmas and from the local health office. The encouragement received is in the form of encouragement and recognition of work. There is no material reward due to the absence of regulations or regulations governing the provision of additional wages or rewards to officers.

### **Occupational Accidents and Environmental Pollution in the Management of Solid Hazardous and Toxic Waste (LB3) at the Tulungagung District Health Center**

In a job related to toxic materials, of course it will be very dangerous if there is a work accident, either for the human workers or for the environment, it is clear that the impact of these toxic materials is not only detrimental to one party but many parties. In the management of B3 waste at the Tulungagung District Public Health Center, until now there has never been a work accident that has occurred to officers, where this was due to the compliance of officers in processing B3 waste with complete personal protective equipment (PPE).

Even though basically the impact on staff can be minimized, the impact on the environment occurs several times where the B3 waste that has been collected by the health center staff accumulates for quite a long time as a result of the long time it takes to transport the waste. So that sometimes an unpleasant odor wafts into several locations, but this has been minimized by using the applicable waste management standards. However, environmental pollution is quite alarming during the waste transportation process where several times the waste is scattered because the distance between the TPS and the vehicles is quite far.

Puskesmas waste is all waste in solid or wet form originating from puskesmas activities, both medical and non-medical activities, which are likely to contain microorganisms, toxic chemicals, and radioactivity. If not handled properly, puskesmas waste can cause problems both in terms of service and aesthetics, in addition to causing environmental pollution and being a source of disease transmission (*nosocomial infection*).

According to researchers, hazardous and toxic waste (LB3) is a very dangerous waste if it contaminates the surrounding environment. Good waste handling can minimize the impact of environmental pollution. The emergence of various kinds of diseases and environmental damage is the result of landfills by human activities that are not managed properly. In addition, if it contaminates living things it is also very dangerous. The management of solid B3 waste at the Tulungagung District Health Center is quite good, however, there are several deficiencies starting from transportation, where in terms of transportation, most of it is carried out by third parties, however the transportation is carried out by parties when it is not in accordance with standards where delays in the transportation of waste often occur so that some time piled up in the Puskesmas environment, besides that during transportation it also kept the Puskesmas staff busy by collecting them outside of the Puskesmas working hours.

Waste treatment officers at the Tulungagung District Health Center are currently very evenly distributed, and waste treatment has also been contracted with third parties so that the maximum waste treatment is only in waste storage at the TPS B3 Health Center. The behavior of the officers regarding the tasks carried out is quite good, but there are still some that are not in accordance with the good SOP for the officers cleaning *service* as well as third parties who transport solid LB3 from the Puskesmas to the processor.

Because it involves a third party, sometimes the Puskesmas staff feel worried about pollution or the impact on the environment due to the accumulation of waste which takes a

relatively long time and also sometimes some waste is scattered due to the large number of vehicles used for waste transportation. So that officers from third parties can be said to be negligent in carrying out the tasks assigned according to the applicable contract.

An officer is someone who works to meet basic human needs, so that acknowledgement, appreciation or encouragement is needed by waste treatment officers. For gifts reward there hasn't been any until now where judging from good performance or poor performance you still won't get reward.

Officers do not get reward materially but in terms of encouragement or support the officers got it both from the management of the Puskesmas and from the local health office. The encouragement received is in the form of encouragement and recognition of work. Absence Reward materially due to the absence of regulations or regulations governing the provision of additional wages or reward to the officers.

In a job related to toxic materials, of course it will be very dangerous if there is a work accident, either for the human workers or for the environment, it is clear that the impact of these toxic materials is not only detrimental to one party but many parties. In the management of B3 waste at the Tulungagung District Health Center, until now there has never been a work accident that has occurred to officers, where this was due to the obedience of officers in processing B3 waste with complete personal protective equipment (PPE).

Even though basically the impact on staff can be minimized, the impact on the environment occurs several times where the B3 waste that has been collected by the Puskesmas staff accumulates for quite a long time as a result of the long time it takes to transport the waste. So that sometimes an unpleasant odor wafts into several locations, but this has been minimized by using the applicable waste management standards. However, environmental pollution is quite alarming during the waste transportation process where several times the waste is scattered because the distance between the TPS and the vehicles is quite far.

#### **IV. Conclusion**

The management of solid Hazardous and Toxic Waste (LB3) at the Tulungagung District Health Center is quite good, where in terms of sorting the Health Center has implemented standards that apply to the local health office, namely by preparing separate containers and containers that are safe from any contamination, then in terms of storage for the Health Center has also implemented an effective storage system. However, there are some drawbacks starting from transportation, where in terms of transportation to the destruction of waste, most of the Puskesmas cooperate with third parties, but the transportation carried out by third parties is not in accordance with standards where there is often a delay in transporting waste so that it accumulates in the environment for some time The Puskesmas, apart from that during transportation also kept the Puskesmas health workers busy by collecting them outside of the Puskesmas working hours.

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