

## ANALYSIS OF SOLID MEDICAL WASTE MANAGEMENT AT THE JOHAN PAHLAWAN HEALTH CENTER, WEST ACEH REGENCY

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### ABSTRACT

*Community Health Center is one of the functional health service units in which there are activities that produce medical and non-medical waste in the form of solid and liquid. Solid medical waste is the final waste generated from hospital activities or health services consisting of infectious waste, pathological waste, sharp object waste, pharmaceutical waste, cytotoxic waste, chemical waste, radioactive waste. Solid medical waste that is not managed properly on the environment can cause environmental pollution of health facilities and the spread of germs that continue to grow through air, water, floors, food, and medical and non-medical equipment. Based on data from the Aceh Barat District Health Office, there are 14 health care facilities, of which 13 health centers (inpatient and non-inpatient) and 1 hospital. In the District of Johan Pahlawan there are Puskesmas A and Puskesmas B, but the researchers conducted research in 1 puskesmas. In this study, the method used is a qualitative method with a descriptive approach, namely through observation and in-depth interviews. The purpose of this study was to find out how to manage solid medical waste at the Puskesmas in the District of Johan Pahlawan.*

**Keywords :** *Puskesmas, Medical waste, management*

### 1. INTRODUCTION

Puskesmas is one of the functional health service units in which there are activities that produce medical and non-medical waste in the form of solid and liquid. At the Puskesmas, solid medical waste is usually generated from activities that come from the treatment room (inpatient room), general polyclinic, maternal / MCH polyclinic, nutrition poly, dental poly, laboratory and pharmacy. Meanwhile, liquid medical waste usually comes from puskesmas laboratories which may contain hazardous toxic substances, microorganisms and radioactivity. ( Pratiwi, D, 2013)

Solid medical waste is the final waste generated from hospital activities or health services consisting of infectious waste, pathological waste, sharp object waste, pharmaceutical waste, cytotoxic waste, chemical waste, radioactive waste, pressurized container waste, and waste containing heavy metals. which can potentially be contaminated (Depkes RI, 2004)

WHO (2014) stated that health service facilities are estimated at 75-90% of domestic waste generated from administrative rooms, kitchens and households, while 10-25% is a group of B3 solid medical waste which includes infectious waste, sharp objects, cytotoxic waste, chemical waste and waste. radioactivity that has a negative impact on the environment and health. ( Susanti, Y, 2021)

A series of health service activities produce waste that has a high potential to cause infection and injury compared to other medical waste. The use of safe and reliable methods in its management is very important. Improper and inadequate waste management can have serious effects on health and significant impacts on the surrounding environment. Good and proper health care waste management is a very important component to protect Environmental Health . ( Mirawati, 2019 )

Management of solid medical waste originating from health services such as puskesmas must be managed as follows. For example, infectious waste must be separated from non-infectious waste, each room provides a trash can made of strong, water-resistant, rust-resistant, lightweight materials, and materials that are easy to clean and equipped with plastic bags. The color of plastic bags must be distinguished for each type of infectious medical waste using yellow plastic bags, sharp objects and

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needles are stored in special containers such as bottles before being put into plastic, and infectious waste will be destroyed in an incinerator. ( Nursamsi, 2017 )

Research by Rahno and his friends stated that the impact of solid medical waste that is not managed properly on the environment can cause environmental pollution of health facilities and the spread of germs that continue to grow through air, water, floors, food, and medical and non-medical equipment. From the environment, workers and new patients can be contaminated with germs. While the impact for workers (cleaning service) on medical waste that is not managed properly is work accidents such as being punctured by syringe waste, exposed to chemical-based liquids, and various kinds of pathogenic microorganisms found in waste so that disease transmission occurs to those exposed (Masrudin). , 2021)

Based on data from the 2019 Ministry of Health, the number of health service facilities is increasing. In 2018, in October, 2,852 hospitals and 9,909 health centers were recorded. Medical waste generated from health care facilities, especially hospitals and health centers as much as 296.86 tons/day. This is due to the lack of medical waste management companies that have operating permits from the Ministry of Environment (KLH) (wind a, K, 2021)

The Ministry of Environment and Forestry said that since the onset of COVID-19 in 2020, the amount of medical waste has increased by 30%. From March 2020 to February 2021, the amount of medical waste produced by health care facilities was 6,418 tons, and the most produced from the city of DKI Jakarta was 4,630 tons. This figure does not include the vaccination process which has started since January 2021 with a target of 180 million Indonesians. The Ministry of Environment and Forestry stated that the number of medical waste continued to increase by more than 18,000 tons until the end of July 2021.

Based on data from the Aceh Barat District Health Office, there are 14 health care facilities, of which 13 health centers (inpatient and non-inpatient) and 1 hospital. In Johan Pahlawan Subdistrict there are Puskesmas A and Puskesmas B, but the researchers conducted research on only 1 puskesmas. Based on the initial survey when he first visited the Puskesmas, A had collected medical waste, but it had not been managed properly. Officers put the results from the collection of medical waste in the open because of several obstacles. Puskesmas A has collaborated with third parties in the management of medical waste, this is because the inability of the Public Health Center to operate the engine for combustion. Medical waste management with a third party is carried out because it does not have an incinerator even though the results of the waste are not comparable to paying third parties . The second survey of Puskesmas A has made changes to the medical waste storage area which already has a special room so that it can reduce environmental pollution in accordance with the Decree of the Minister of Health Number 1428/Menkes/SK/XII/2006. In accordance with the background, the purpose of this study was to find out how to manage solid medical waste at Puskesmas A, Johan Pahlawan District.

## **2. IMPLEMENTATION METHOD**

Types of research used in this study are qualitative with a descriptive approach. According to Kriyantono, qualitative research is research that aims to explain phenomena through data collection as deeply as possible. This qualitative research is based on the depth of the data obtained , the more detailed and in the data obtained the better the quality of this research. Instruments in this study used interview guidelines, surveys, voice recorders, and image recorders. Researchers conducted research in Aceh Barat district, johan hero sub-district, precisely at Puskesmas A by using direct interviews with informants 1 (Environmental Health Sanitation staff) , informants 2 and 3, namely Cleaning Service (CS). This research examines on the management of solid medical waste which was reviewed at the Johan Pahlawan sub-district health center, precisely in West Aceh Regency.

### 3. RESULTS AND DISCUSSION

Based on a survey conducted at the Johan Pahlawan Public Health Center regarding the management of medical waste by conducting in-depth interviews, the following results were obtained

#### 3.1 Sources of Waste

Based on the survey results, the researchers conducted interviews regarding the sources of waste “ *from which room does medical waste come from...?* The following are the results of the interview:

Informant 1: " *Usually the most frequent source of waste comes from the children's poly room, dental clinic, and immunization and now vaccine waste has increased since covid-19* " .

Informant 2 " *usually from the pediatric, immunization and dental poly room which I often collect the waste from* "

Results of interviews with informants 1, 2 and 3 sources of medical waste at Puskesmas A came from the immunization room, dental clinic, and children's clinic. In line with research conducted by Feisal Primadana that the most collected waste sources come from dental clinics, KIA polyclinics, general polyclinics, laboratories and emergency rooms. Since the covid virus attacks medical waste, there has been an increase in the results of the covid-19 vaccination.

#### 3.2 Waste Volume

Based on the survey results, researchers conducted interviews regarding the volume of medical waste “ *How much medical waste is produced every day ... ?*”.

Here are the results of the interview:

Informant 1: " *We are here a week or once a month at the most, the weight is around 2-5 kg per week while 12-35 kg per month* "

Informant 3: " *Rarely weighed for per day usually weighed after 1 month of transportation once it's around 10-35 kg*”

The results of observations and interviews of officers do not weigh waste every day, but waste will be weighed every 1 week or once a month when it will be transported. Medical waste generated by the Puskesmas is around 12-35 kg per month.

This is not in accordance with Febriana's research (2011), the health unit studied by Febriana weighs medical waste per day. The amount of medical waste generated by hospitals comes from employees, inpatients, outpatients, and visitors who seek treatment .

#### 3.3 Types of Waste

Based on the survey results, the researchers conducted interviews regarding the types of waste “ *What types of waste are usually produced ...?*” . Here are the results of the interview:

Informant 1: " *For example, it's like sharp waste of syringes, there are also expired pills, cloth gauze and spet*”

Informant 2: " *There are many, usually we often collect types of waste such as spet, medicine bottles, syringes, gauze, medicine plastic* "

There are many types of waste produced by Puskesmas such as medical and non-medical waste that are hazardous and non-hazardous. For example, the type of hazardous waste is syringes, while examples of non-hazardous waste are drug packages, gloves, and others.

In accordance with the research of Nia Himayati et al (2018), they explain that there are types of medical waste that are hazardous and non-hazardous. Hazardous wastes such as syringes, contaminated gauze, infusion sets, chemical tubes, body fluids, body tissues, while harmless ones such as masks, gloves, damaged medicines and many others. All waste becomes hazardous if the waste is contaminated.

#### 3.4 Waste Selection Stage

Based on the results of interviews with public health officers, the results of interviews regarding

“ *How do officers sort medical waste....?*” .

Here are the results of the interview:

Informant 1: " *He quoted the same as the cleaning service in the morning, if the sorting is done according to type " solid waste. Later there will be a special yellow box for infectious waste, rich in syringes, which must be separated from other waste. "*

Informant 3: "*Usually, each waste is different. There are already boxes for each type waste like that yellow box for syringes "*

At the sorting stage, the puskesmas has been running well but it is still not optimal. Domestic waste is still found in solid waste such as plastic, paper and food scraps. This is not in accordance with the Decree of the Minister of Health of the Republic of Indonesia No. 1204/Menkes/SK/X/2004 concerning Environmental Health Requirements for Health.

Based on research by Hassan et al (2008) conducted in two large hospitals, it was found that the waste disposal into the basket is not separated. This behavior can pose a serious health risk to waste handling personnel .

### 3.5 Collection Stage

At the collection stage, the resulting waste is collected in a safety box by the Cleaning Service every morning. Once collected, it will be stored in a special waste room.

" *What is the stage of collecting medical waste at this puskesmas ...?*"

Here are the results of the interview :

Informant 1: "*The cleaning service will collect it every day using a yellow safety box, after that it is taken to the waste room and sorted again according to its type, such as syringes and medicines "*

Informant 2: "*Early in the morning when I arrived, I immediately cleaned every room and collected medical waste from every room where there was waste. Then the garbage and waste will be separated in a yellow box so they don't get mixed up. After that, the waste is immediately taken to the waste room and separated again according to its type. Yes, this is done every day too."*

Puskesmas A goes through the stages of collecting and transporting solid medical waste using a manual method, carried by hand by the Cleaning Service officer to the waste room. Cleaning Service officers only use the usual method, which is directly transported by hand without using PPE (Personal Protective Equipment).

This is in line with research conducted by Rahno (2015), which shows that the process of collecting and transporting waste is carried out by the Cleaning Service from the room that produces waste and is taken to the waste storage room. Health center officers also do not use PPE (Personal Protective Equipment) and waste transport trains.

Dyah Pratiwi's research (2013) states that medical waste should be transported using a stroller and equipped with personal protective equipment or PPE, transporting medical waste to a landfill requires proper implementation procedures and must be obeyed by officers. The procedure includes complying with local transportation regulations, namely being transported in a special container, strong and not leaking.

### 3.6 Management Stage

The stage of managing medical waste generated at Puskesmas A is handed over to a third party in the local city. The third party will visit once every 1-2 months to transport the waste to be managed by them. Based on the following interview .

" *How to manage medical waste in this health center ...?*"

Here are the results of the interview:

Informant 1: "*For medical waste management, we still can't manage it ourselves because we have problems with incinerator that we don't have. So we always cooperate with third party PT management medical waste. Later every month they come and are weighed before being transported "*



*Informant 2: "There is a third party that is working with this puskesmas so that they will come every month to pick up the waste that has been collected and then weigh it and then transport it in a container car "*

Based on observations, Puskesmas A is not in accordance with PermenLHK Number: P.56/MenLHKSetjen/2015, although it has collaborated with third parties because the puskesmas does not have an incinerator machine due to several obstacles. They also don't burn the medical waste because it can cause pollution and also Puskesmas A is located in a city with close proximity to houses.

Puskesmas A cooperates with third parties using the budget from the BOK (Health Operational Assistance). The BOK fund is an effort by the central government to assist local governments to achieve national targets in the health sector which are the responsibility of the regions. This assistance is a special fund for health centers in each region (Permenkes RI Number: 12/2021)

### **3.7 Standard Operational Work (SOP)**

At the time of conducting the survey, the researcher conducted an interview regarding the SOP (Standard Operating Procedure).

*" Does this puskesmas already have a Standard Operating Procedure ..?". Here are the results of the interview:*

*Informant 1 "For the SOP problem, we already have it, just follow the procedure just now sometimes I still don't obey too much because I'm used to it before"*

*Informant 3 "I already have the SOP, although we are still adjusting the procedure. Because before directly without using the procedure, just so simple "*

Puskesmas A already has an SOP (Standard Operating Procedure) and it has been implemented but only in the final management the Puskesmas has not used an incinerator machine, but they are collaborating with a third party from PT medical waste which has incinerators.

Masrudin's research (2021), states that in the management of medical waste, SOPs (Standard Operating Procedures) contain the definition, types, and examples of medical waste, as well as the purpose of making SOPs, regulations regarding medical waste management, policies for the head of the health center, procedures that must be followed. in accordance with PermenLHK Number: P.56/MenLHKSetjen/2015.

There are still many Puskesmas that have not received Standard Operating Procedures, this is in line with Arislan's research (2018), which is only 20% of Nursing Health Centers in Merangin Regency that already have SOPs (Standard Operating Procedures) in the management of medical waste, namely Madras Health Center and Pamenang Health Center.

## **4. CONCLUSION**

The process of managing solid medical waste at Puskesmas A, Johan Pahlawan sub-district has been carried out starting from the stage of sorting solid medical waste, collecting and transporting waste to the landfill. the storage area is kept until it is full, but at the stage of processing or destroying puskesmas A it is still not in accordance with the regulation of the Minister of Environment and Forestry Number: P.56/MenLHK-Setjen/2015.

Sources of medical waste in Puskesmas A came from the children's poly room, the dental clinic, and the most waste generated was from the immunization clinic. The volume of medical waste at Puskesmas A is not weighed every day but is weighed during the transportation process once a month. The use of PPE (Personal Protective Equipment) on cleaning service officers is still not obeyed by officers.

Overall medical waste management at Puskesmas A is still not optimal, the main obstacle in managing medical waste at Puskesmas A, Johan Pahlawan District is the absence of a budget to operate incinerators for Puskesmas. In overcoming the obstacles above, the Puskesmas cooperates with a third party, namely a company that manages medical waste after it is collected.

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