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**Management Medical-B3 Waste Through Transportation Study at Fasyankes
of Health Public Office Bogor Discript in 0218**

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ABSTRACT

Health service facilities are places that was used to carry out health service efforts carried out by the Central Government, Regional Government and the Community. Health service facilities provide health services in the form of individual health services, independent practice place for health workers, community health centers, clinics, hospitals, pharmacie, blood transfusion units, health laboratories, optics, medical services for legal purposes. Health service facilities show the potential for B3-Medical Waste pollution which result in failure on human health. The problem is how is the management study of B3-waste transportation in Bogor Regency, according to the Minister of Environment Regulation No. 56 of 2015. The research method is descriptive qualitative and theoretical research method, and research purposes to determine development transportation facilities development of Medical-B3 Health care waste Fasyankes in Bogor. The results achieved are the process of managing B3-Medical waste treatment is carried out prioritized through combustion using an incinerator and the development of B3 Medical-waste transportation which was prioritized by the type of Depo and cluster and the overall evaluation of the B3-Medical waste management process at the health facilities in Bogor Regency a not yet suitable. With provision, namely the Minister of Environment and Forestry Candy Number: P.56/MenLHK-Setjen/2015, namely following the procedures and technical requirements for the Management of Hazardous and Toxic Waste from Health Care Facilities.

Keywords: B3-Medical Waste, Management, Transportation, Fasyankes and Bogor District.

Management-B3 Medical Waste Through Transportation Study at Fasyankes of Health Public Office Bogor District in 0218

Introduction

Health service facilities are a device and/or place used to carry out the health service efforts in promotive, preventive, curative, and rehabilitative, which are carried out by the Central Government, Regional Government and/or the community. Based on the Republic of Indonesia Government Regulation Number: 47 of 2016 concerning Health Service Facilities in article 4 that the types of Health Service Facilities as referred to in article 3 (Health Service Facilities provide health services in the form of individual health services; and/or public health services) consist of independent practice sites Health workers, public health centers, clinics, hospitals, pharmacies, blood transfusion units, health laboratories, optics, medical service facilities for legal purposes and traditional health care facilities. (Dian Kartika, Pan Lindawaty S. Sewu dan Rullyanto W (2016).

Health care waste includes (1) waste originating from Health Service Facilities which is non-risky waste or general waste and resembles household waste (administrative activities, other operations (75-90%). (2) Waste that is considered dangerous and can cause various types of health impacts (10-25%), in the form of infectious waste, pathological waste, sharp objects, pharmaceutical waste, genotoxic waste (very dangerous and mutagenic, teratogenic, or carcinogenic) which often cause problems that complicated), chemical waste (organic and non-organic), waste containing heavy metals, pressurized packaging waste, radioactive waste.

(Dyah Pratiwi, Chatila Maharani.(2013).

So that the population will be affected negatively (Population at Risk) B3 health facilities if not properly are Medical Officers, Patients, Fasyankes Support Staff, B3 Waste Management

Officers and surrounding residents. Likewise, based on PP No.47 of 2016 which is about the implementation of independent practices of health workers and traditional health service facilities. In this case the government gives the broadest permits to health workers provided they meet the requirements. From the data in Bogor Regency, one of the Public Hospital and Puskesmas facilities and the RSUD has a Stock of Medical Solid Waste from Puskesmas in Bogor district in 2016, as shown in table 1.

Table 1.
Stock of Medical Solid Waste from Puskesmas in Bogor district in 2016

		TAHUN 2016												TOTAL (Kg)
No	PUSKESMAS	B U L A N												
		1	2	3	4	5	6	7	8	9	10	11	12	
1	Jasinga						243	132	107	58	41			582
2	Cigudeg	9	22	21	0	13	20	12	13	9.2	29	46	44	239
3	Sukajaya													
4	Parung Panjang	20					20	17	39	15	13	52	57	232
5	Tenjo		29			45		28			60		38	200
6	Nanggung	35	30	31	28	34	25	33	33	29	35	40	25	377
7	Luwiliang	20	14	11	20	20	20	20	21	20	20	20	20	225
8	LW .Sadeng		29	28		26	27							110
9	Rumpin													
10	Cibungbulang	57	95	55		45	47	28	59	46	22	96	95	645
11	Pamijahan	33		48			108			50	13			251
12	Ciampea	33	33			23	26		24	40	71	108	106	464
13	Tenjolaya	26	16	28			27		1.7	23	5.2	59	57	243
14	Ciomas	25	27	29	25	30	27	28	28	26	28	29	29	331
15	Simagalih	19	14			17	20	20		14	13	20	20	157
16	Darmaga	17	17	20	20	11	20	11	20	20	58	56		269
17	Cisarna	20	20			20	21		23	38				143
18	Megamendung	20	20			20	21		23	38				143
19	Ciawi	20	18	0	20	0	20	0	20	29	20	0	0	147
20	Caringin	19		15	16		20		25	20				115
21	Cigombong	125	78	53	106	73	100	96	127	172	106	20	126	###
22	Cijenk / Palasari	25	40	27	29	35	36	48	40	60	36		39	415
23	Kemang	20	20	20	20	20	20	20	20	30	20	20	20	250
24	Rancabungur	20	20	20	20	13	20	19	15	18	34	32		232
25	Parung	20	35	37	36	37	39	38	36	59	35	94	98	564
26	Ciseeng	17	20			71	79	70	65	80	34	34	32	502
27	Gunung Sindur	66	93	82	82	83	47	49	47	100				648
28	Bojong Gede	52	25	26		34	34	23	12	34		74	70	384
29	Tajur Halang	17	20			71	79	70	65	80	34	34	32	502
30	Cimemkar	37	39	0	39	54	39	20	20	46	27	73	64	457
31	10 ndala	224	52	51	82	83	82	58	33	48	141	119	115	###
32	Citeureup	20	36	38	26	45	15	23	23	17		35		279
33	Babakan Madang	19	20	20		20	20	20	17	161	41	51	53	442
34	Gunung Putri		22	20			49	18	9.6		12			130
35	Cileungsi	40	20			20	40	20	20	20	50	26	28	284
36	Klapanunggal	20	37	15	17	20	34	20	17	30	20	27	30	287
37	Jonggol													
38	Sukamakmur	16	16	18	14	17	17	16	20				13	147
39	Cariu	23	21	19	23	25	18	20	15	22	17	15	16	233
40	Tanjungsari													
41	Labkesda	2	1.7	19	11	11	4.5	20	1.2	0	0	26	27	122
42	Kesja	13		11			19	13	11	7.7	5			80
	TOTAL	###	###	763	633	###	###	###	###	###	###	###	###	###

1 Solid medical volume (according to time, place and region) originating from RSUD in Bogor regency in 2016, Government and Private health facilities in Bogor Regency in 2016. Shows that there will be potential pollution of health facilities, if reviewed according to Minister of Health Regulation 1204 of 2004. The Problem is, how the management of studies for Transportation for Medical Waste-B3 with according to Minister of Environment Regulation No. 56 of 2015, 9 And the research method is descriptive qualitative and 1 theoretical research method with the aim of knowing/to build studies transportation and the 1 management of B3-Medical waste Fanyankes in Bogor.

1 **B3-Waste and Factors Affecting Health**

Waste from various health service facilities both hospitals, clinics and health centers, will produce both liquid and solid waste. Hospital/Puskesmas solid waste is better known as hospital waste. Solid waste is the result of industrial waste in the form of solids, sludge or slurry originating from a processing process (Daryanto, 1995). Regulation of the Minister of Health Number 1204 of 2004 concerning Environmental Health Requirements for Health Facilities, waste is all waste generated from activities in the form of solid, liquid, and gas. The Puskesmas System Model uses the Input, Process and Output component approaches or commonly abbreviated as IPO of the Puskesmas Program activities.

1. The Input component includes all the resources, facilities and infrastructure that will be used in the health service (transformation) process in the Puskesmas, which consists of 6M + Time, the explanations are man, money, material, methods, markets, machine and time.
2. The Process Component includes the use of resources (6M + Time) that is carried out to produce quality service for the puskesmas, consisting of (a) Process performance of medical / paramedic and non-medical / paramedic staff Process of using materials and drugs and other supplies, (b) Process of using work procedures / public health services or Standard Operating Procedure (SOP) for medical and community health services, (c) Process of achieving patient services and meeting public health needs or Minimum Health Service Standards (SPM-Health) targets Populations are employed by Puskesmas, (d)

Process of using medical equipment and equipment, (e) Process of revenue and budget use (budgeting) and (f) The process of utilizing the time or time needed in each use of Puskesmas resources.

3. The output component includes service results or activity results that can be in the form of service coverage, procurement of goods and services, namely quality of basis health services by Puskesmas, both preventive-promotions as public health services and curative-rehabilitative as medical financial service useless, not used or wasted which can be distinguished into medical and non-medical waste and categorized as sharp objects, infectious waste, cytotoxic and radioactive wastes that are harmful to health and the environment.

Stages of B3 Waste Management - Medical Facilities

In waste management, it really takes care of all aspects, for example in terms of health, especially the surrounding environment, facilities that are used, health workers on duty in this matter and minimizing the risk of the spread of diseases and work accidents. In general, B3-medical waste management will have different implementation practices between health facilities, which generally consist of Sorting, Settlement, Transportation, Temporary Shelter and Destruction (Fattah, et al, 2007).

Reduction and Sorting is to avoid the use of materials containing hazardous and toxic materials if there are other choices, to do good house keeping for any material or material that has the potential to cause health problems and/or pollution to the environment, segregate waste streams according to type, group, and/or waste characteristics, carry out good governance in the procurement of chemicals and pharmaceutical materials to avoid accumulation and expiration and to prevent and periodically maintain equipment on schedule.

B3 waste storage facilities for B3 waste and / or B3 waste landfill shall be no later than 90 (ninety) days, for B3 waste produced at 50 kg (fifty kilograms) per day or more; or 180 (one hundred and eighty) days, for B3 Waste produced less than 50 kg (fifty kilograms) per day for category 1 B3 Waste, since B3 Waste is produced ..

Arrangements for the management of medical B3 waste according to LHK candy: P.56/ Menlhk-Setjen/2015, The health requirements according to the Permenkes P.56/Menlhk-Setjen/2015 are eligible if the trash can is leak-proof and anti-stick, has a lid and is not easy to open, solid

medical waste that will be used must be through sterilization, medical waste materials using labels (color of plastic bags / containers), and groups, color codes, symbols, packaging and management of medical waste from sources of Minister of Health 1204/2004 concerning health requirements hospital environment.

Transportation is divided into two, namely internal and external transportation. Internal transportation starts from the initial collection point to the disposal site or to the incinerator (on-site processing). In internal transportation the cart is usually used as a labeled one, and is regularly cleaned and the implementing officer is equipped with protective equipment and special work clothes. External transportation, namely transporting medical waste to off-site disposal. External transportation requires proper implementation procedures and must be followed by the officers involved.

Temporary Shelter (TPS) for this waste container that has strong properties, does not easily leak or mossy, avoid being torn or broken, have a lid and not overload. Shelter in medical waste management is in accordance with standardization of bags and containers such as by using various colored bags as stipulated in Minister of LHK Regulation Number: P.56 / Menlhk-Setjen / 2015 where the pockets are yellow with biohazard symbols for infectious waste, purple pockets with a cytotoxic symbol for cytotoxic waste, a red bag with a radioactive symbol for radioactive waste and a black bag with "domestic" writing.

Final Disposal Site (TPA) Most of the waste and the like is destroyed by incinerator or by using the sanitary landfill method. This method is used depending on specific factors that are in accordance with the institution, the applicable regulations, the environmental aspects that affect the community. An incinerator is a term used to describe all combustion systems, even if only one is commonly seen as effective. In this guideline the incinerator is used to explain the combustion process carried out in a double chamber incinerator which has a strict monitoring mechanism and control of combustion parameters. The storage period of B3-Medical Waste, especially for waste with infectious characteristics, sharp objects and pathologies is stored in the B3 Waste storage area before B3 waste transportation is carried out. Processing of B3 waste and /or landfilling of B3 waste no later than 2 days at a temperature of > 0°C.

B3 Waste Treatment Plant-Medical Facilities

Based on the Minister of Education Decree Number: P.56/Menlhk-Setjen/2015 concerning procedures and Technical Requirements for the Management of B3 Waste from Health Facilities in Chapter 4, B3 Waste Management is in Article 17 paragraph 1 as follows: (1) B3 Waste Treatment as intended in Article 5 letter d carried out thermally by B3 Waste producers who have a B3 Waste Management Permit for B3 Waste Management activities; or B3 Waste processor who has a B3 Waste Management Permit for B3

Waste Management activities. (2) Thermal treatment of B3 Waste as referred to in paragraph (1) letter a shall be carried out using gravity type and / or vacuum type autoclave equipment, microwave, radio frequency irradiation and / or (3) thermal B3 waste incinerator and treatment by B3 Waste Processing as referred to in paragraph (1) letter b can only be done using incinerator equipment. (4) B3 Waste Processors that carry out Thermal B3 Waste Treatment as referred to in paragraph (1) letter b must have cooperation with B3 Waste Producers. And the Incinerator type, as shown in table 2.

Table 2. Incinerator Type

1	Incinerator brand	-
2.	Incinerator Capacity	300 kg/hour
3.	First combustion temperature	800°C-1.000°C
4.	Second combustion temperature	1.000°C -1.200°C
5	Volume of the first combustion chamber	12,5 m ³
6.	Volume of the second combustion chamber	11,2 m ³
7.	Emergency chimney height (from the ground)	15 m
8	Emergency chimney diameter	0,7 m
9	The height of the main chimney (from ground level)	30 m
10.	Main chimney diameter	0,6 m
11	Fuel	Solar
12	Feed System	Authomatic System (<i>lift bucket</i>)
13	Air pollution control device	Cyclone/Water scrubber

Research Methods

B3-Medical Waste Management activities in the Bogor District Health Office Location in 2018, the research procedure is shown in Figure 1.



Fig. 1. B3-Medical Waste Management Preparation Research Procedure in Health Facilities

In the preparation stage of B3 Waste Management for the Bogor District Health Office in 2018, as follows:

Primary and Secondary Data

Primary data is carried out as a result of measurements and composition, observations from the results of studies and observations of existing management conditions (Reduction / sorting, storage, transportation, processing and burial. Distribution of waste producers) and this qualitative study using a case study design. The sampling technique uses purposive sampling. The research subjects were Head of P2PL Division of Bogor District Health Office (1 person), Head of Environmental Health Section (1 person), Bogor Health Cooperative Secretary (1 person), Head of Community Health Center (5 people), Community Health Center sanitation (5 people), Management waste in the Puskesmas (5 people). The instruments used are in-depth interview guides, voice recorders, check list guideline sheets, cameras. And Secondary data is

data obtained through other parties, not directly obtained by researchers from the research subjects (documentation, the results of the meeting, and the study results).



Figure 2. Map of Bogor Regency Work Area

Based on the map of the working area in Bogor Regency which consists of 42 Subdistricts with 103 Puskesmas, the category of hazards for B3-Medical waste in health facilities is listed No. 37. B3-Medical Waste from general specific waste sources from hospital activities is coded A337-1, A337-2, A337-3, A337-4, A337-5, B337-1 and A337-2 with hazard categories 1 and 2.

1 Pharmaceutical Product Packaging

B3-Medical waste materials which during the manufacture, processing, storage, use and disposal of waste can release dust particles, gases, fibers, radiation which can cause irritation, corrosive, poisoning, fire, explosion and other hazards that can cause health problems, disabilities, death and damage to property and the environment. Infectious waste is waste that is suspected of containing pathogenic material, for example laboratory culture, waste from isolation rooms,

cotton, materials or equipment touched by extra infected patients. Examples of infectious ingredients: medical waste, injection patient fluids.

1 **Field Test/Sampling with Secondary Data Collection**

Data/documents regarding the management of B3-Medical waste in health facilities in the Bogor district and several regulations for the analysis of B3-Medical Waste Management as follows:

1. Law Number 4 of 1984 concerning Outbreaks of Infectious Diseases.
2. Law Number 23 of 1992 concerning Infectious Diseases.
3. Law Number 44 of 2009 concerning Hospitals
4. Law No. 18 of 2008 concerning Waste Management
5. Government Regulation Number 40 of 1991 concerning Prevention of Outbreaks of Communicable Diseases.
6. Regulation of the Minister of Health of the Republic of Indonesia Number 1204 concerning 2004 concerning Hospital Environmental Health Requirements.
7. Regulation of the Minister of Health of the Republic of Indonesia Number 9 of 2014 concerning Clinics
8. Minister of Health Regulation Number 9 of 2014 concerning Clinics.
9. Decree of the Minister of Health Number 1493 concerning Use of Medical Gas at Health Service Facilities.
10. RI Minister of Environment and Forestry Regulation Number P.56 of 2015 concerning Procedures and Technical Requirements for the Management of Hazardous and Toxic Waste from Health Care Facilities.
11. RI Government Regulation Number 47 of 2016 concerning Health Service Facilities

12. RI Government Regulation Number 66 of 2014 concerning Environmental Health.

¹ 13. Government Regulation Number 18 of 1999 concerning Management of Hazardous and Toxic Materials

Medical B3 Waste Verification and Primary Data Collection

Verifying the Location of B3-Medical Waste Pollutant Locations This activity phase aims to compare the location of B3-Medical waste pollutant sources obtained between secondary data and data in the field, and then record the base of B3-medical waste pollutant sources according to their area. The presence of new B3-Medical waste pollutants, changes in the location of waste water disposal activities, or the cessation of operations of an activity are examples of changes that affect the list of B3-medical waste pollutant sources that have been identified. And collect Primary Data. Primary data collection is an activity of collecting data and information at the location level of the activity (field). Primary data collection for the management of B3-Medical waste transportation / health centers / health centers is carried out by measuring the quality of B3-Medical waste health facilities by testing samples of infectious medical B3-waste. Then the rate of B3-Medical waste was also measured to determine the amount of medical B3 waste that was disposed of. The collection of primary data for the management of B3-Medical waste transportation facilities is done by distributing questionnaires and interviews, location surveys, and if possible a field test, which aims to obtain data on specific quantities (factors) released into the environment, such as testing waste samples B3- Medical and transportation management systems that are suitable are used in the Bogor location.

Initial Data Collection Method

The initial data collection will be used as a basic reference in carrying out the work of "Medical B3 Waste Management of Bogor District Health Office in 2018" based on the Ministry of Environment and Forestry Number: P.56 / MenLHK-Setjen / 2015 obtained from relevant agencies through an institutional survey. The type of data, data source and purpose of its use in the initial data collection in preparation for medical B3 waste management activities as presented in Table 1.

Making Geographic Information Systems

Making maps on work activities "B3-Medical Waste Management Medical Facilities in Bogor Regency Health Office in 2018" aims to present data and results of analysis "Management of B3-Medical Waste Transport Fasanke Bogor District Health Office. Mapmaking process begins with selecting data, data tabulation, and grouping data according to mapping requirements, the data from the secondary and primary surveys are then arranged in a tabular form which will become the database load. The complete stage in making maps (GIS) is (1) Procurement of basic maps, collection of maps in the form of a map of the earth, maps, and images of aerial photographs, which are still raster (image / image). If a digital map is available, it is necessary to pay attention to the suitability of the scale and accuracy of digitizing data which will later be used in the GIS application. (2) Digitizing Maps, digitizing maps is the process of converting from analog maps to digital maps by using digitizing tables or by way of onscreen digitizing (digitized directly on a computer screen) to form raster digital maps through a scanning process. (3) Editing and Checkplot, editing is done as an effort to rectify sightings and polygons of digital maps and the substance or content of each sector of spatial planning, topography, and appropriateness of writing in mapping. Checkplot is an attempt to correct the results of digital

conversion and editing on the previous map. (4) ¹ Standardization, map depth resolution needs to be determined according to GIS mapping requirements. Standardization of mapping needs to be done so that maps can be used as references for other map processing, especially in this scope of work.

Result and Discussion

Medical Waste Management

¹ Management of medical-B3 waste according to the Ministry of Environment and Forestry Number: P.56/MenLHK-Setjen/2015: Reduction material substitution, handling procedure, eco-purchasing, maintenance procedure. And sorting are classifying procedure, labeled container. Storage (facilities of storage by generator, classified container and colored coding symbolized and labeling).

Medical Hazardous Waste Transporter (DEPO)

Preparation is starting from to do proposal from transporter identity of transporter, type of MHW, point of source, quantity, personal in charge with competency in line, document of The Vehicle and the Purpose of Transportation. Obtaining a 5 years vehicle's id-number (transporter, vehicle), complying with vehicle's heat affected zone was manifest system, obeying all binamarga/kemenkes (medical) Haz-material regulation and handling Haz- waste discharges.

To Manage The Transporter from Generators to Treatment Facilities

The Objectives are ² (1) to ensure the correct packaging, temporary storage and collection of a waste prior to transportation, so as to prevent accidental spillage into the environment" and minimize the impact should a spillage occur, (2) to ensure that the Medical Hazardous Waste (B3) is never lost, this is achieved by use of a system of documentation or a manifest system. (3) to

ensure that the waste arrives safely at a permitted facility, (4) to ensure that emergency procedures are in place before an accident occurs, and that the Medical HW is correctly marked so as to aid the emergency team

The MHW-Transportation System to Cover All Types-Medical Centre MHW

The MHW-Transportation System to Cover All Types-Medical Centre MHW as source-points for type of medical centre are general/particular hospital (possible to have their own-thermal MHW Treatment), Clinics, Puskesmas and Drug Store:

1. Quantities of Points of Source (Generators) at Bogor Residence Region are 101 puskesmas, 4 general hospital + 21 particular hospital, 153 Clinics and Drug stores
2. Variable of MHW Transportation Management for point of sources are (1) Distribution, Storage Capacity. (2) Distance of : Point of Sources, Treatment Facilities, Disposal Site, (3) Facilities/type of vehicle of MHW Transportation: Generator, Transporter, Units, Capacity, Man Power and (4) Typology of Coverage Area Service: Slope, Accesibility.

Points of Sources for distribution (Whole of Bogor Residence area, 1 Puskesmas for 52.000 people or instead standard is 1:30.000), Storage Capacity (Patient quantity and type of treatment, Characteristic and composition of MHW and MHW Pre-treatment Facilities).

Effective MHW Transportation System for distance of point of sources, treatment facilities, disposal site are average distance point to point (in one block service), average distance end of point to treatment facilities and average distance end of point to disposal site.

Facilities/type of vehicle of MHW Transportation for generator (after pre-treatment): unit, storage capacity, man-power and transporter: unit, carrying capacity, man-power.

Typology of Coverage Area Service are slope, density high, medium and low, with accessibility hard, medium and easy.

The Process of Collecting, Build the MHW Transporting Management

¹ The next process is the collection of solid medical waste collected in each service unit, in a closed place. Collection of medical waste is carried out every day by cleaning services officers. After solid medical waste is collected, then transfer to temporary storage facilities is carried out by cleaning service officers every day, manually not using special containers and not through special lines. The storage process before the final management of solid medical waste is carried out differently. The transfer and transportation of medical waste is carried out every day, manually not using special containers and not through special lines. Transfer and transportation of medical waste is from the collection point to the temporary storage area. Temporary storage / collection of medical waste at polling stations for 3-4 days. Solid medical waste produced from the medical service facilities of each Puskesmas ranges from 3 kg to 3.5 kg, because health facilities not only provide outpatient facilities, but also provide inpatient facilities. The process of temporarily storing medical waste in health facilities. The volume of solid medical waste produced from health facilities every day is 5 kg. Accredited facilities are usually crowded with patients every day, because they provide outpatient and inpatient facilities.

Transportation should be used by a stroller, and cleaned regularly and the implementing officer is equipped with protective equipment and special work clothes, transportation of medical waste to an off-site disposal site requires proper implementation procedures and must be obeyed by the officers involved. The procedure includes meeting local transport regulations, which are transported in special containers, must be strong and not leaky (Hapsari, 2010). It is further explained in the process of transportation by the officer regarding the bag being carried, that the bag with color must be removed if it contains 2/3 parts. Then tied the top and clearly labeled and the bag must be transported by holding the neck, so that if carried away from the body, and placed in certain places to be collected Pruss (2005: 67). Part of the process of transporting and transporting medical

waste in the district health facility in Bogor using a manual method, meaning that it is taken away with the container using the hands of the clerk, to the transferer.

This can be seen from the results of studies and observations as explained below: several health centers in Bogor, solid medical waste after manually sorted, then taken to the incinerator's house to wait to be burned. Temporary storage is carried out for a minimum of 6 months, and storage is carried out sometimes which still has not been arranged neatly. There are still used syringes scattered around the incinerator's house.

Every day medical and non-medical waste is disposed of into a Temporary Disposal Site (TPS) located in the backyard of the Community Health Center while waiting for the burning process. Sometimes solid medical waste is transported by cleaning service personnel and then taken to be put into barrels the size of this temporary storage is carried out within 3-4 days to await the final handling process. Non-medical waste is transported every day by the DPU to be transported to the Final Disposal Site (TPA).

Collection of medical waste should be completely separated between medical and non-medical waste, including the separation and collection of medical waste based on characteristics. Collection of medical waste from health facilities is still in a separate condition between medical and non-medical waste. Among other things, at polling stations before final handling, they are still mixed with non-medical waste. The prolonged storage process results in messy, irregular and more dangerous storage areas that can cause infection. Infectious waste can contain a variety of pathogenic micro-organisms. Pathogens can enter the human body through several pathways: As a result of punctures, abrasions, or sores on the skin, through mucous membranes, through breathing and through ingestion

Sharp objects not only can cause scratches or punctured wounds but can also infect wounds if they are contaminated with pathogens. Because of this double risk (injury and disease transmission), sharp objects are included in a very dangerous group of waste. The main concern that arises is that infections are transmitted through transportation which can cause the entry of agents that cause disease, such as viral infections in the blood (Pruss. A, 2005).

Handling of Solid B3-Medical Waste Management Process in Health Facilities with Environment and Forestry Candy Number: P.56 / MenLHK-Setjen / 2015

Management of B3-Medical waste according to Kepmenkes No.56 / LHK / 2015 there are some that are not carried out, which are not carried out or not obeyed by some health facilities in Bogor Regency, West Java. Labeling of bins between medical and non-medical waste is only partially carried out by health facilities and does not do labeling. Separation of medical and non-medical waste according to the provisions must be separated by using different colors of plastic bags namely yellow plastic bags for infectious waste and black plastic bags for domestic (non-medical) waste and separate between wet and dry waste, health facilities separating medical waste from red bags and non-medical waste with a black bag color.

The separation of sharp objects and needles (inserted in a bottle) is also not done in other health centers. Collection of waste at temporary collection sites is carried out by the majority by health facilities. Furthermore, the final process of managing solid medical waste in health facilities according to the provisions must use an incinerator that has the capacity to destroy infectious waste, not all health facilities do it. Separation of solid medical waste based on the provisions must still be carried out until the final management is carried out by the facility between medical and non-medical waste burned together in the same place. Medical waste should be destroyed by an incinerator, while non-medical waste is burned or buried separately or dumped into landfill. It is evident that good medical waste management is said to not be in accordance with the applicable provisions, namely provisions in the management of medical waste according to the Ministry of Environment and Forestry Number: P.56/MenLHK-Setjen/2015.

Solid waste management from medical and medical support activities will be carried out according to the instructions of the Ministry of Health as outlined in the hospital clinical waste management guidelines and hospital sanitation from the Indonesian Ministry of Health handling medical waste such as gauze pads, cotton, plaster, bandages, sanitary napkins, catheter hoses, blood transfusion hoses, intravenous tubes, body tissue / surgery pieces, and all objects that contaminate the patient's body fluids are collected in a yellow plastic bag. Then this medical waste is transported to TPS in infectious medical waste capacity of 8 m³ with dimensions of width 2 m in length 2 m and 2 m. Handling infectious solid waste such as syringes, intravenous needles, wing needles, syringes, abbocaths, ampules, vials, bisturi and all objects that are sharp or can be injured can be collected in a special place that is yellow. Then this infectious waste is

transported to TPS of infectious medical waste. Whereas the handling of medical liquid waste such as the residual infusion fluid, the remaining laboratory samples and the remaining chemical solutions are collected in jerry cans and then transported to TPS of infectious medical waste.

Management of medical, infectious and B3 waste from hospitals in Bogor district will be cooperated with third parties that have the permission of the Indonesian Ministry of Environment and Forestry. Based on Minister of Health Decree No.1204 of 2004 hospital medical waste is waste in which consists of infectious waste, pathological waste, sharps waste, pharmaceutical waste, cytotoxic waste, chemical waste, radioactive waste, pressurized kointaner waste and waste with heavy metal content tall one. Medical solid waste produced is collected by type of container which has been determined in the Minister of Health Decree No.1204 of 2004.

Non-medical waste generated by hospital activities is estimated to depend on the type and amount as follows: (1) Used oil from the use of a 20 liter / year generator set, (2) Used light bulbs, batteries, printer cartridges, used monitors, printer ink, cleaners floors, glass cleaners, insect and mouse cleaners, paint, thinner, etc. amounting to 0.6 m³ / day. sludge generated from hospital waste water treatment processes generally includes LB3 categories of 2.3 m³ / day.

Handling of this waste needs to be separated from other domestic wastes. In the hospital, there will also be a B3 (Non-Medical TPS LB3) shelter with an estimated capacity of 6 m³, used ink cartridges, used lamps, perfume bottles or anti-insect bottles with a type of plaster and closed brick construction with a dimension of 1.5 m, length 2 m and height 2 m. The determination of this polling station will be cleared out of permission to the DPM-TPS of the Bogor Regency City. B3 waste management is then cooperated with third parties who have obtained permission from the Indonesian Ministry of Environment and Forestry with the transportation period 4 days. Estimated type and amount of hospital waste as follows: (1) Types of infectious medical waste such as syringes, intravenous needles, pipettes, sanitary napkins, plaster, cotton at 0.086 m³ / day. (2) Non-infectious medical waste such as ampules, infusion sets and spuiuit wraps of 0.8 m³ / day. And (3) Infectious liquid wastes such as large volumes, infusion solutions, etc. are 0.0025 m³ / day.

Conclusion

1. The process of managing B3-Medical waste from 4 regions 42 Subdistricts and public and private hospitals, clinics and others is more in management in Bogor district basically has the

same process, namely from waste reduction/sorting medical and non-medical, sorting, transporting waste to TPS, processing and burial / stockpiling stored at TPS until full, then the final process of solid medical treatment is carried out, namely through combustion using an incinerator.

2. Especially, regarding the transportation of hospital waste-B3 in accordance with the provisions in the regulation of the ministry of environment and forestry No: P.56/MenLHK-Setjen/015, namely following the procedures and technical requirements for the management of Hazardous and Toxic waste from Health service facilities are model of medical Hazardous and Toxic waste (B3) adalah clustered by type facilities, zoning by administrative area and priority by density of medical facilities in area. therefore, process of build the MHW-transportation management with Depo type, facilities of area coverage to effective the operational of MHW transportation and priority programme of the Stake Holder.
3. Model of Medical Hazardous Transportation is clustered by type medical facilities, zoning by administrative area and priority by density of medical facilities in region area.

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