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A BRIEF STUDY OF ACTUAL AND STRATEGIC ISSUES

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PROBLEMS OVER MEDICAL WASTE

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Abstract

Many parties doubt that Indonesia can overcome the amount of medical waste which increases dramatically amid the Covid-19 pandemic. The current capacity of health care facilities and medical waste processing services is still below the amount. If this is not overcome seriously, the medical waste will create a new source of infectious Covid-19 transmission. This paper reviews the issue of medical waste management capacity and the government's response to overcome these problems. In addition to optimizing the basic capacity it already has, the government is also seeking spare capacity by involving non-medical B3 waste processing services and industries that have incinerators, such as clinics. The Covid-19 outbreak should be a momentum for Indonesia, including the Indonesian House of Representatives (DPR RI) as a policy maker, to improve the B3 waste and waste management system so that it is better prepared to face similar disasters in the future.

Introduction

It has been almost two months since the first Covid-19 outbreak occurred and announced by the Indonesian Government on 2 March 2020. The statistic data has been recorded in relation to the increase numbers of positive-recover-died cases, together with the official data posted on several portals of the central government and local government. However, there are some points that we do not pay much attention in this case, namely the medical waste disposed during the Covid-19 treatment.

An increasing trend in the amount of medical waste occurs in all countries in the world. During the Covid-19 outbreak in Hubei Province, China, there was an increase of 6 times the normal amount of medical waste, from 40 tons / day to 240 tons / day (Shi and Zheng, 2020). The Asian Development Bank (ADB) predicts that DKI Jakarta will produce 212 tons of medical waste / day (adb.org, 2020). Meanwhile the amount of hazardous and toxic (B3) waste management facilities in Indonesia is still limited. The facts show that out of 132 referral hospitals

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appointed by the government to look after Covid-19 patients, only 20 hospitals hold licensed incinerators. On the other hand, from a total of 2,889 operating hospitals, only 110 hospitals hold licensed incinerator facilities (Soemiarno, 2020).

Medical waste in Indonesia is classified as B3 waste whose management is regulated in Government Regulation Number 101 of 2014 concerning Management of Hazardous and Toxic Waste. Hazardous waste management is carried out with the principle of vigilance and using safe and environmentally friendly waste management methods. Special treatment and facilities are required since the waste is produced (from cradle) until being destroyed (to grave).

Covid-19 medical waste requires to be treated seriously. Research shows that the cause of Covid-19, the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) virus, is able to withstand certain conditions (temperature and humidity). It takes several days for the virus to not actively infect humans, depending on the type of surface material of its life media. However, with a standard disinfection process (use of soap, disinfectant or by heating) the virus will be easy to be removed or in other words not contagious (Chin, et al, 2020). Imagining if Covid-19 medical waste is thrown away without good treatment, as happened in Jagakarsa, South Jakarta (health.detik.com, 8 April 2020), and Timika, Papua (radartimikaonline.com, 27 April 2020), it will certainly raises new problems amid government efforts to break the chain of transmission of Covid-19. This paper reviews the issue of medical waste management capacity and the government's response to overcome these problems.

Source of Covid-19 Medical Waste Producers

Medical waste consists of liquid and solid phases. However, liquid medical waste produced is limited to service facilities 14 health (fasyankes) so that the handling can be more easily executed. The handling of medical waste is regulated in Minister of Environment and Forestry Regulation No. 56 Year 2015 concerning Procedures and Technical Requirements for the Management of Hazardous and Toxic Waste from Health Care Facilities. Covid-19 medical waste was produced by several sources, including the Covid-19 referral hospital, special facilities used for Covid-19 related patients (e.g Wisma Atlet Kemayoran Emergency Hospital in Jakarta and Palembang), health care facilities that have been functioning so far, and homes stairs and public facilities that produce ordinary garbage.

Dealing with Covid-19 which spreads rapidly and easily, the use of Personal Protective Equipment (PPE) is an obligatory. PPE, which generally consists of masks, gloves, clothes, face shield, mostly made from plastic with a single-use period. This caused the emergence of former PPE medical waste to surge significantly. In addition, Covid-19 medical waste can also be in the form of specimens, used

pharmaceutical materials, used medical devices, and used food / beverage packaging for Covid-19 patients.

Increasing the number of wearing masks and gloves at the household level also needs special attention. Moreover, household medical waste has the potential to be mixed with other household waste, thus endangering garbage transport workers who generally work without PPE or use PPE that is not adequate.

Gap in Indonesian Medical Waste Management Capacity

The Ministry of Environment and Forestry (KLHK) states that the capacity of medical waste treatment facilities for health care facilities throughout Indonesia has only reached 70.21 tons / day. Added by the capacity of processing services by third parties amounting to 244.08 tons / day (Soemiarno, 2020). Meanwhile, the Ministry of Health said that the capacity of medical waste treatment facilities at the new health facility reached 53.12 tons / day plus the capacity of processing services by third parties at 187.90 tons / day. With a total of 2,889 hospitals,10,062 health centre (puskesmas), 7,641 clinics, and other facilities such as health laboratories, pharmacies and blood transfusion units, are predicted to produce 294.66 tons of medical waste from Indonesia every day, in other words a deficit of 70,432 tons / day (Nurali, 2020). This figure does not even include the amount of medical waste generated at the household level in the form of masks and gloves which also increased in number.

This is the fact that it requires to receive a good response from the government. Even though the exact number of the increament in the amount of medical waste in Indonesia has not been issued by the authorities, the government is demanded to increase the capacity of processing medical waste several times the current capacity.

The Government's response over the Gap in Medical Waste Management Capacity.

In order to guarantee the management of medical waste in all regions of Indonesia, the government has issued official circular letters addressed to related parties, including: the Minister of Environment and Forestry Number 167 Year 2020 concerning Management of Medical B3 Waste at Covid-19 Emergency Fasyankes; MENLHK Circular Letter Number 02 of 2020 concerning Management of Infectious Waste (B3 Waste) and Household Waste from Handling Covid-19; and Letter of Director General of Waste, Waste and B3 Management Number 156 Year 2020 Regarding Management of B3 Waste in the Emergency Period of Handling Covid-19. In particular, the circular letter is an effort to optimize the capacity of medical waste management in Indonesia, whether being carried out by health facilities or licensed B3 waste management services. SE MENLHK Number 02 of 2020 allows facilities to process B3 waste even though they do not have a permit in using an incinerator with a minimum temperature of 800oC or using an autoclave with a shredder.

KLHK said that the solution is to handle capacity gaps medium

medical waste treatment strived by involving other parties. The current basic processing capacity with the incineration process is 314.53 tons / day, which comes from the processing capacity of 70.45 tons / day of health facilities and third party (private) processing capacity of 244.08 tons / day. The capability of B3 (private licensed) waste processing services, if optimized to deal with Covid-19 medical waste, can actually reach 679.2 tons / day. This amount can still be increased by involving industries that have incineration facilities, such as semen clinics. By borrowing approximately 1% of the annihilation capacity in a cement kiln (kiln), a processing capacity of 127.61 tons / day will be produced so that Indonesia's current reserve capacity can reach 877.26 tons / day (Soemiarno, 2020). This figure is certainly quite encouraging amid concerns over the low capacity of medical waste treatment. Although being late, KLHK said that the construction of B3 waste treatment facilities by the Fasyankes has become a national priority program. The government plans to build these facilities in 32 locations in the 2020-2024 period.

Some regions have agreed to follow up on Minister of Forestry Minister's Regulation Number 02 Year 2020 through the circular letter from the head of the regions. It is hoped that the handling of medical waste, whether it is obtained from health facilities or households, can be given more attention. For example, the Jakarta Provincial Office for the Environment (DLH) has implemented Covid-19 medical waste management through collecting at the household level, sub-district dipo, city dipo, and transported by third parties to the eradication facility at the Bantar Gebang Waste Power Plant (PLTSa) (Warih, 2020).

Covid-19 as a Momentum for the Improvement of Medical Waste Management.

It must be admitted that no country is truly prepared facing the Covid-19 outbreak, including Indonesia. The actions conducted by the government within addressing the gap in Covid-19 medical waste capacity should be highly appreciated. However, there are some notes that requires to be considered in response to this response. Firstly, processing technology still relies on the incinerators. In fact, this technology has begun to be abandoned because of the potential to emit mercury and dioxin (Damanhuri, 2020). In addition, specifically for handling medical waste, the incinerators are considered to be overkill, wasteful, and prone to abuse (corruption). Many hospital incinerators in Indonesia are not well-established on the right criteria so they do not meet combustion with optimal temperature (850-1.200oC) or not equipped with adequate air pollution control.

Secondly, medical waste management facilities by both the health care facilities and private parties are not evenly distributed throughout Indonesia. From basic capacity of 314.29 tons / day, 267.20 tons / day are in Java and none at all in the Maluku and Papua regions. This is causing the B3 waste management principle not to be fulfilled, namely the precautionary

principle (as fast as possible) and proximity principle (as close as possible). This is compounded by the limited number of licensed transporters that are only owned by 140 service providers. As a short-term solution, the involvement of industries that have incineration facilities requires to be considered, considering that in the Maluku and Papua regions there are a number of industries.

Thirdly, the government requires to create a healthy investment climate for processing and transporting medical waste services. One of the low business investments in this sector is caused by complicated licensing. If necessary, when investor's interest is still considered low, the government should continue to be present by developing medical waste treatment services based on State-Owned Enterprises (BUMN) or Regional-Owned Enterprises (BUMD).

Fourthly, the government requires to develop a financing scheme in order to support the management of medical waste which is very burdensome to the health facility in difficult times like now. According to the Association of Hospitals throughout Indonesia (PERSI), the hospital's financial balance sheet was severely disrupted, which was feared to have implications for the decline in hospital services (Partakusuma, 2020). If hospitals neglect medical waste management due to budget constraints, the potential for leakage of medical waste into the environment will be even greater and harmful for humans.

Closing

Various actions have been made by the government to overcome the gap in medical waste treatment capacity, both through optimizing the basic capacity or increasing reserve capacity so that the total capacity reaches 877.26 tons / day, approximately 3 times the reserve capacity. In the meantime, the DPR is expected to be able to direct the government to develop medical waste management technology that does not only depend on incineration technology, deploys such treatment facilities throughout Indonesia, and improves the investment climate in processing and transporting medical waste services.

The Covid-19 outbreak should be a momentum for Indonesia to improve its waste management and B3 waste management system. The application of waste and hazardous waste sorting from the source is an effort to break the chain of spreading of Covid-19 through medical waste.

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