



The Indonesian Government's Regulation on the Management of COVID-19 Hazardous Medical Waste from Health Service Facilities and Self-Isolation Activities

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Abstract

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BACKGROUND: The SARS-CoV-2 virus that causes COVID-19 entered Indonesia in January 2020, though the government first announced its entrance on March 2, 2020. This pandemic has affected this country for more than 2 years, and it has caused many casualties and material losses. The Indonesia government still undergoes efforts to prevent the spread of this disease. One of its medium of infection is COVID-19 medical waste. It is estimated that Indonesia produces 138 tons of COVID-19 medical waste daily, with limited management capabilities.

AIM: This research aims to describe the Indonesian government's policies or regulations on the acceleration in handling the COVID-19 pandemic, by cutting the chain of infection through the management of hazardous and toxic waste, namely, the medical waste from health service facilities and self-isolation activities of COVID-19 sufferers.

METHOD: This research uses the doctrinal approach.

RESULTS AND DISCUSSION: It is shown that the Indonesian government's regulations are well-prepared. However, due to the quick spread of the virus, the government needed to issue different regulations several times to adapt to the situation in the field. After sometime, the vaccination program has reached the target and the quantity of the spread has decreased. Thus, the government issued new policies on the status of the COVID-19 medical waste from the category of hazardous and toxic waste into common domestic waste.

Introduction

The SARS-CoV-2 virus that causes COVID-19 entered Indonesia in January 2020, though the government first announced its entrance on March 2, 2020. This pandemic has affected this country for more than 2 years, and it has caused many casualties and material losses [1]. The Indonesia government still undergoes efforts to prevent the spread of this disease. One of its medium of infection is COVID-19 medical waste. It is estimated that Indonesia produces 138 tons of COVID-19 medical waste daily, with limited management capabilities.

The Ministry of Environment and Forestry stated that the total Indonesian health service waste management facilities only have the capability to manage 70,21 tons of medical waste daily. Then, the third-party management services have the capacity in managing 244,08 tons of medical waste daily. Meanwhile, the Ministry of Health stated that the waste management capacity of health service facilities only reached 53,12 tons/day, added with the capacity of third-party waste management facility, which is 187,90 tons/day [2].

Based on the total health service facilities, which are 2.889 hospitals, 10.062 community health centers, 7.641 clinics, and other facilities such as health laboratories, drugstores, and blood transfusion units, it is estimated that Indonesia produces 294,66 tons of medical waste daily, that is, there is a deficit of 70,432 tons/day. This number does not include medical waste from self-isolation activities, such as masks and gloves [3]. This waste must be managed well as one of the ways to prevent COVID-19 infection.

Based on the description above, the research problems of this paper are as follows: (1) What are the Indonesian government's regulations and policies on COVID-19 hazardous and toxic waste management in Indonesia and (2) What are the obstacles and challenges in implementing these regulations and policies?

Methods

This study used the juridical normative method, that is, research on legal regulations (constitutional

regulations, jurisprudence, and other unwritten laws) and legal principles [4]. It was carried out by finding, inventorying, and analyzing all constitutional regulations, policies, and regulations concerning the management of COVID-19 hazardous and toxic waste. This research was strengthened by in-depth interviews with legal experts, law-making officials, and society. The obtained data and information were then analyzed qualitatively [5]. As explained by Denzin and Lincoln, it is research that uses natural settings, aiming to analyze occurring phenomena by involving various methods or the mixed method [6].

Results

At the highest level, the policy and regulation on hazardous and toxic waste in Indonesia are stipulated in the 1945 Constitution Article 28H clause (1). It states that everyone has the right to have both physical and mental welfare. They have the right to have shelter, to live in a good and healthy environment, and to obtain health services. The 1945 Constitution is the fundamental norm and the work ideology. Thus, constitutionally, the management of hazardous and toxic waste has a very strong legal basis.

The Constitution is not operational. Thus, Article 28H of the 1945 Constitution is authentically interpreted in Law No. 32 of 2009 on Environmental Protection and Management. The management of hazardous and toxic waste is stipulated in Article 1 numbers 21, 22, 23, and 24, and also Articles 58, 59, 60, and 61.

Concerning the management of COVID-19 hazardous and toxic waste produced by medical facilities and self-isolation activities, the Indonesian government has responded quickly by issuing the following regulations and policies:

1. The Circular of the Ministry of Environment and Forestry No. 167 of 2020 on Hazardous and Toxic Medical Waste Management at COVID-19 Emergency Health Service Facilities;
2. The Decree of the Ministry of Environment and Forestry No. 2 of 2020 on Infectious (Waste Hazardous and Toxic Waste) Management and Domestic Waste in Handling the COVID-19; and
3. The Circular of the General Directory of Garbage, Waste, and Hazardous and Toxic Materials No. 156 of 2020 on Hazardous and Toxic Waste Management during the Emergency Condition in Handling the COVID-19.

The pandemic has gone on for more than 2 years. The vaccination program in Indonesia has reached its target and the number of COVID-19 infections has decreased. Thus, the government issued a new policy, namely, the Decree of the Ministry of Health No. 02.02/1/1124/2022 on Medical Waste

Management in the Form of Food Waste from Isolation or Quarantine Health Service Facilities in Handling the COVID-19. The status of the COVID-19 medical waste that was categorized as hazardous and toxic waste has been downgraded into common domestic waste.

COVID-19 hazardous waste policies

According to Law No. 32 of 2009, Article 1 number 21, hazardous and toxic materials are substances, energy, and/or other components that may directly or indirectly pollute and/or destroy the environment and/or endanger the environment, the health, and also the life of humans or other creatures due to its properties, concentration, and/or amount.

Then, hazardous and toxic waste is waste from businesses and/or activities that contain hazardous and toxic materials. Meanwhile, medical waste originates from health service facilities, consisting of liquid and solid phases. Hazardous and toxic waste management includes the activities of decreasing, storing, collecting, transporting, utilizing, managing, and/or piling such waste. The management of hazardous and toxic waste is regulated in Law No. 32 of 2009 on Environmental Protection and Management, Articles 58, 59, 60, and 61. Article 59 stipulates that:

1. Every hazardous and toxic waste producer must manage the waste they produced;
2. If the hazardous and toxic waste in Article 58 clause (1) has expired, its management follows the stipulations on hazardous and toxic waste management;
3. Those who cannot manage hazardous and toxic waste themselves must hand over its management to other parties;
4. Hazardous and toxic waste management must obtain permits from ministers, governors, or regents/mayors according to their authorities;
5. Ministers, governors, or regents/mayors must include environmental requirements and obligations that must be complied with by the hazardous and toxic waste managers in the permit;
6. There must be an announcement on the decision of permit issuance;
7. Further stipulations on hazardous and toxic waste management are stipulated in Governmental Regulations.

Law No. 32 of 2009 has authentically been interpreted in the Governmental Decree No. 101 of 2014 on Hazardous and Toxic Waste Management. Then, it is further stipulated in the Regulation of the Ministry of Environment and Forestry No. 56 of 2015 on Technical Procedures and Requirements on Hazardous and Toxic Waste Management.

COVID-19 medical waste is un reusable residual materials that may potentially be contaminated

with infectious substances from patients and/or health workers at health service facilities that treat COVID-19. The government has strategically, accurately, and quickly issued some legal policies in managing such waste. This aims to optimize the management capacity of medical waste, both by licensed health service facilities or private waste management businesses.

Unfortunately, these policies cannot yet deal with the increasing hazardous waste. Thus, the Ministry of Environment and Forestry issued a progressive legal policy, namely, Decree No. 2 of 2020 which gave health service facilities the flexibility to manage hazardous waste even without operational permits. Such health service facilities may use incinerators with a minimum temperature of 800°C or autoclaves that are equipped with shredders.

This progressive legal policy places legal understanding beyond mere written constitutional regulations. However, it must be free from normative regulations. Substantially, legal subjects do not have to be bound by procedural regulations. This is to achieve legal justice, benefit, and certainty during the COVID-19 pandemic [7].

Progressive law cannot arbitrarily negate or ignore the existing normative regulations and legal systems. However, it becomes an alternative perspective in completing these normative regulations. It interprets normative regulations progressively, creatively, and innovatively. Even, it is sometimes beyond the regulatory logic [8].

The progressive legal policy in the Decree of the Ministry of Environment No. 2 of 2020 was followed up by the Decree of the Head of the Region in some areas to optimize COVID-19 waste management. For instance, the Environmental Service of Jakarta Special Capital Region Province managed COVID-19 medical waste by collecting them in special posts at the domestic, district, and city levels. This waste was then collected by a third party to an extermination facility at the Waste-Powered Electricity Plant Bantar Gebang and other areas [9].

Then, waste dumping is the activity in disposing of, placing, and/or inserting waste and/or substances in certain amounts and concentrations, at certain times and locations with certain requirements to certain environmental media. This is to prevent them from endangering the environment and society.

Hazardous waste management obstacles

The increasing amount of COVID-19 hazardous and toxic medical waste may cause severe problems [10]. Even though the policies that regulate the management of such waste have succeeded, there are still challenges that need to be resolved, for instance:

Lack of regional regulations

There is still a lack of regional regulations on waste management. Many temporary waste landfills are substandard [10]. There is minimum supervision on medical waste management by the regional government due to limited budget and limited human resources.

Law No. 32 of 2009, Article 63 clause (3) explains that: In protecting and managing the environment, the city/regency government is obliged and authorized to: (a) determine city/regency-level policies; (b) determine and implement city/regency-level strategic environmental assessments; (c) determine and implement city/regency-level policies on environmental protection and management plan; (d) determine and implement policies on environmental impact assessments, environmental management efforts, and environmental monitoring efforts; (e) determine the city/regency-level inventorying of natural resources and greenhouse gas emissions; (f) developing and implementing cooperation and partnerships; (g) developing and implementing environmental instruments; (h) facilitate dispute resolution; (i) conducting training and supervising the compliance of business and/or activity managers toward the stipulations of the environmental permits and constitutional regulations; (j) undergo minimum service standards; (k) implement policies on the procedures to acknowledge the existence of indigenous people, local wisdom, and rights of the indigenous people concerning city/regency-level environmental protection and management; (l) manage city/regency-level environmental information; (m) develop and implement city/regency-level environmental information system; (n) procure education, training, guiding, and awards; (o) issue city/regency-level environmental permits; and (p) enforce city/regency-level environmental laws.

This recommendation includes creating the Ministry of Health regulations on operational standards at all health service facilities and encouraging regional governments to formulate regional regulations on medical waste management.

Limited standard incinerator facilities

Hazardous and toxic waste management still depends on incinerator technologies. People actually start to leave them as they may potentially emit mercury and dioxins. Apart from that, in handling medical waste, incinerators are deemed as overkill, wasteful, and prone to be corrupted. Meanwhile, many hospital incinerators in Indonesia were not built based on the standard criteria, thus; they cannot burn at optimum temperature (850°C–1.200°C) or they are unequipped with adequate air pollution controllers [11].

As explained by the Directorate General of Waste Management, the Ministry of Environment and Forestry, out of 2.925 hospitals in Indonesia, only 117 of them have the permit to incinerate medical waste with a burning method at the minimum temperature

of 800°C. Then, only 17 hazardous waste management companies have such permits, and most are on Java Island. Thus, the principles of hazardous waste management, namely, the precautionary principle and the proximity principle are unfulfilled.

In consequence, there needs to be extra funds to manage the increasing amount of medical waste in certain areas due to COVID-19. As a solution, the Ministry of Environment and Forestry permitted unlicensed medical waste incinerating activities to operate. The Police Force was also asked not to criminalize unlicensed medical waste incinerators that operate to destroy COVID-19 infectious waste [12].

Then, at Indonesian borders where the facilities are limited, the ministry instructed the burial of medical waste according to the applicable procedures. The government plans to build 32 hazardous waste management facilities by 2024. The development of five of them was complete by the end of 2020 to accelerate the management of COVID-19 medical waste.

Based on the description above, up to 2024, the procurement of waste management facilities by health service facilities or private parties have not yet been spread equally in all areas of Indonesia.

Many patients undergo self-isolation

The capacity of referral hospitals in regions is rather limited. Thus, the government issued a policy that COVID-19 patients with light symptoms may undergo self-isolation at home or other places with supervision from health workers from Community Health Centers.

The increasing number of self-isolation patients caused the increasing amount of COVID-19 medical waste produced at domestic levels in the form of masks, gloves, empty bottles, drug packages, etc. This requires special attention, as medical waste in domestic areas is prone to be mixed with other domestic waste. This may endanger waste collectors who commonly work without standard hazmats.

The Indonesian Association to Internal Disease Specialist Doctors (*Perhimpunan Dokter Spesialis Penyakit Dalam Indonesia/PAPDI*) also recommends cutting the host chain through several methods. Good management of infectious medical waste may cut the chain of virus infection. There are some groups of people who are most prone to experience disturbances due to hospital waste, namely:

- a) Patients who enter hospitals to obtain medical treatment. This is the group with the highest risk.
- b) Hospital employees who have direct contact with sick people who are agents of diseases daily.
- c) Hospital patient visitors have a great risk of being infected.
- d) People who live around hospitals, especially if the hospitals dispose of the medical waste to

the surrounding environment without following the waste management standard procedures.

Discussion

After the COVID-19 has infected Indonesians for more than 2 years, the Indonesian government is rather successful in undergoing procedures to handle it and it has surpassed difficult times. The vaccination program in Indonesia has reached its target and the number of infections has decreased. Thus, the government issued a new policy on the status of the COVID-19 medical waste. Before, it was categorized as hazardous and toxic waste but now it is categorized as common domestic waste.

The Indonesian government has issued a Decree of the Ministry of Health No. 02.02/1/1124/2022 on Medical Waste Management in the Form of Food Waste from Isolation or Quarantine Health Service Facilities in Handling the COVID-19. COVID-19 patients' leftovers are no longer categorized as hazardous waste.

Even so, medical waste still obtains special treatment. They are sterilized with disinfectants before being disposed of. The garbage men must wear full hazmats, both indoors and outdoors. They must at least wear masks, aprons, gloves, glasses, and boots. They must also coordinate with the environmental service. The Ministry of Health explained that there was a significant increase of hazardous and toxic waste during the pandemic these last 2 years, which are in the form of patient food leftovers, hazmats, and other items that are considered infectious. Parallel with the decreasing COVID-19 cases, the ministry has renewed the regulations in handling those medical wastes.

Conclusion

Based on the results and discussion above, it can be concluded that: (1) The management of hazardous and toxic waste from COVID-19 medical waste has constitutionally been guaranteed by the Republic of Indonesia's 1945 Constitution. Then, it has authentically been interpreted in laws, governmental decrees, and ministry-level regulations. The government issued a progressive legal policy to accelerate the management of hazardous and toxic waste by providing flexibility to unlicensed incinerators to operate. The Police Force was asked to not criminalize unlicensed incinerators that operate to destroy COVID-19 infectious waste; (2) the regulations or the progressive legal policies have been implemented well. However, in practice, there are still challenges that must be overcome, for

example: (a) The regional governments lack regional regulations; (b) standard incinerator facilities are limited; and (c) many patients undergo self-isolation. Thus, there needs to be progressive policies and countermeasures from the regional governments.

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