

## Health: Hospital Medical Waste Management Laws that Does Not Comply with Environmental Quality Standards

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### ABSTRACT

This research is conducted to analyze the regulation of medical waste management and the legal consequences of medical waste management in hospitals that do not meet environmental quality standards related to health aspects. This research method is descriptive which will produce an overview of medical waste management regulations relating to health and environmental aspects. This research is normative in nature. The approach used is a statutory approach which is carried out by examining all regulations related to the legal issues addressed. Furthermore, the conceptual approach is derived from the views and doctrines developed in legal science. while the analysis method used is qualitative analysis method. The results of the study show that there are at least two laws that regulate medical waste, namely the Health Law and the Environmental Management Law. Medical waste management is very important, because medical waste that is not managed properly will have a very negative impact on the environment which will have an impact on human health.

## **INTRODUCTION**

Medical waste is waste produced by the activities of hospitals, clinics, laboratories and other health facilities. This waste includes various types of materials, ranging from infectious waste, hazardous chemicals, to radioactive materials. Medical waste has great potential to pollute the environment if not managed properly, causing damage to ecosystems, water and soil pollution, and serious health risks for the community. In many countries, including Indonesia, the problem of environmental pollution by medical waste is becoming increasingly worrying. According to data from the Ministry of Health of the Republic of Indonesia, the amount of medical waste generated by health facilities increases along with the increase in health services and population. Medical waste that is not managed properly can cause the spread of infectious diseases, poisoning, and other negative impacts on the environment and human health.

Waste that exceeds production limits and is poorly managed ultimately causes disaster for humans and the environment, of course. One type of waste that is detrimental to the environment is medical waste. Hospital operations usually produce various types of waste, one of which is medical waste. Medical waste is waste from medical activities. This medical waste contains various substances that can pose a risk to human health if not handled properly. Environmental pollution due to medical waste can have various negative impacts, including: Human Health: Medical waste containing pathogens can cause serious infections in humans. Exposure to dangerous chemicals and radioactive materials can also cause chronic diseases such as cancer and hormonal disorders. Ecosystem: Toxic materials from medical waste can pollute water and soil, damage natural habitats, and harm flora and fauna. Disturbed ecosystems can result in loss of biodiversity. Water Resources: Pollution of water sources by medical waste can impact the quality of water used by people for drinking, cooking and other daily activities.

Environmental pollution due to medical waste has increased after the Covid-19 pandemic, in line with the increasing world need for medical services. Data shows that medical waste is one of the seven main environmental problems at the global level, so special attention is needed to solve this problem (Mostafa. K. Tolba,1950). The Ministry of Environment and Forestry stated that the volume of medical waste produced by health service facilities reached 242 tons per day. Of this amount, the average pile of medical waste reaches 87 kg per day, proving that exposure to medical waste directly threatens the environment and human health (Andi, 2022). This research will discuss the legal implications of managing medical waste in hospitals that do not meet environmental quality standards related to health. Along with the increase in the number of health facilities and medical services, the production of medical waste has also increased. According to data from the World Health Organization (WHO), every day health facilities around the world produce around 0.5 kg of medical waste per hospital bed. In developing countries, medical waste management often becomes a major challenge due to limited infrastructure, technology and human resources.

## LITERATURE REVIEW

### *Definition and Classification of Medical Waste*

Medical waste is defined as all types of waste generated from health care activities that have the potential to pose infectious, chemical, or physical risks. According to the World Health Organization (WHO), medical waste is classified into several categories (WHO, 2018):

- Infectious Waste: Waste that contains pathogens (bacteria, viruses, parasites, or fungi) that can cause disease.
- Pathology Waste: Human body parts, organs, tissues, and other biological samples.
- Cytotoxic Waste: Waste from drugs used for chemotherapy.
- Chemical Waste: Waste from chemicals used in laboratories and sterilization processes.
- Radioactive Waste: Waste from radioactive materials used in medical diagnosis and treatment.
- Non-Biological Waste: Waste that does not contain infectious materials, such as single-use medical devices.

### *Medical Waste*

Medical waste can have a negative impact on human health and the environment. These impacts include (Burhan, Nurlaina, 2022). Public Health in risk of spreading infectious diseases through direct or indirect contact with infectious waste. Environment a Soil, water and air pollution due to improper disposal of medical waste, which can cause disruption to the ecosystem and human health.

### *Regulations and Policies*

Medical waste some important regulations and policies (UU No.32 Thn 2009). Basel Convention an international agreement governing the transboundary movement of hazardous waste, including medical waste. Local and National Regulations a each country has its own regulations regarding medical waste management, such as regulations regarding classification, collection, storage, transportation and disposal.

### *Medical Waste Management*

Various methods are used to manage medical waste, including (Pertiwi, 2017):

- Incineration: Burning medical waste at high temperatures to reduce volume and destroy pathogens.
- Autoclave: Sterilization of medical waste using high pressure steam.
- Chemical Processing: Use of chemicals to sterilize medical waste.
- On-Site Management: Management of medical waste in health facilities before sending it to the final processing facility.

- Transportation and Disposal: Processed medical waste is then transported to the appropriate final disposal site.

### ***Challenges and Opportunities***

Medical waste management faces various challenges, including (Burhan, 2022):

- Awareness and Compliance: Lack of awareness and compliance with medical waste management regulations.
- Limited Resources: Limited human resources, technology and funds for effective waste management.
- Security and Safety: Risks to workers involved in medical waste management.

However, there are also opportunities for improvement and innovation in medical waste management, such as (WHO, 2018):

- New Technology: Development of new, more efficient and environmentally friendly technology for medical waste management.
- Awareness Raising: Education and training campaigns to increase awareness and compliance with medical waste management.
- International Collaboration: International cooperation to share knowledge and technology in medical waste management.

## **METHODOLOGY**

This research is normative legal research. Normative legal studies are legal studies that treat law as a system of norms. In this case the normative system includes principles, norms, normative acts, court decisions, contracts and principles (education). This method is used to draw conclusions based on established findings (Soerjono Soekanto, 2010). The method used in the research is a normative approach, namely a conceptual approach carried out by studying all normative legal acts that are relevant to the legal problem being studied. The statutory approach is an approach to statutory regulations by examining all statutory regulations relevant to the legal issue being considered in order to ascertain whether there is consistency between one law and another law. The conceptual approach is a conceptual approach that arises from ideas and teachings formed in legal science and aims to find ideas that produce legal concepts, legal concepts and legal principles that are relevant to the problem at hand (Mukti Fajar & Yulianto Achmad, 2010). discussed. The concepts of legal research in legal science can be used as a starting point or point of view for analysis, because many concepts arise in connection with legal facts.

## **RESULT AND DISCUSSION**

### ***Regulations for Medical Waste Management***

Medical waste generated by hospitals has a significant impact on public health. There are many laws and regulations in Indonesia related to health and

waste management, including Law no. 36 relating to health (Health Act) is contained in Chapter IX Environmental Quality. Article 162 states that environmental health efforts aim at improving the physical, social, biological and health conditions of every human being in order to achieve a higher standard of living. Improper handling of hospital waste can pollute the environment and cause health problems. This is because hospital waste causes many diseases, including typhoid, cholera, dysentery, and hepatitis. Thus, there is a need for proper waste management before discharge into the environment (Bappedal, 1999). Medical waste from hospitals can be considered as a chain of transmission of infectious diseases. In addition, this waste contains many toxic and harsh chemicals that can cause health problems and injuries. Sewage dust can pollute the air, cause disease, and contaminate medical equipment and food. Improper handling of medical waste can cause environmental damage, pollution and occupational hazards (Fattah, Nurfachanti dkk, 2007).

In principle, hospitals are useful for improving health, but on the other hand they also have weaknesses, namely waste generation, especially medical waste, so they need to be segregated. Question: If people are exposed to solid materials such as hospital waste, the treatment of this waste can transmit hepatitis B and C and HIV. In addition, some hospital waste can also cause disease, such as cholera, typhoid, malaria and skin infections.

The litter problem has become a global concern, especially in the current crisis, and there are several international agreements related to litter management, e.g (Pertiw, V,2017).

1. The Basel meeting, this convention deals with the transport of hazardous waste within countries. Only permitted hazardous wastes may be exported from countries that do not have the facilities or expertise to safely dispose of such wastes in other countries.
2. The "people pays" principle, the polluter pays principle, according to which all waste producers are legally and financially responsible for disposing of the waste they produce in a safe and environmentally friendly manner.
3. The "protection" principle is a safeguard which is the main principle governing health and safety issues.
4. The "duty of care" principle is a guideline that instructs everyone who handles or handles dangerous substances or equipment related to them to exercise the greatest possible care in the performance of their duties.
5. The "proximity" principle is a question of proximity, which must be implemented in the management of hazardous wastes located close to the source in order to reduce the disposal of wastes generated in their area.

A healthy environment is crucial to help achieve a healthy quality of life, and specific measures are needed to improve quality of life. Environmental standards are generally governed by the UUPPLH as modified by the UUCK.

Several articles were later changed from UUUPPLH to UUCK (Burhan, Nurlaina, 2022)

### ***Responsibility for B3 waste***

The identification process involves chemical testing and analysis to determine whether a waste falls into the B3 category. Parameters tested include toxicity, reactivity, corrosivity and flammability. B3 waste is grouped based on its physical, chemical and biological properties. This classification is important for determining appropriate management methods. For example, infectious waste: Medical waste that can cause infection. It was waste that contains dangerous chemicals and that contains radioactive materials.

And Then Collection and Storage. B3 waste must be collected separately from non-B3 waste to prevent contamination. Collection is carried out using special containers that are resistant to chemicals and appropriate to the type of waste being collected. Temporary storage of B3 waste is carried out in a safe place, far from public access, and equipped with warning signs. Storage facilities must have a good ventilation system and be equipped with fire extinguishers. Transport of B3 waste must be carried out by a licensed party using special vehicles designed to transport hazardous materials. These vehicles must be equipped with emergency equipment and documents describing the type and amount of waste being transported. Processing in B3 Waste Processing Method. Incineration: Burning waste at high temperatures to destroy hazardous materials. Autoclaving: Sterilization of medical waste using hot, pressurized steam. Solidification/Stabilization: Changing the physical form of waste to reduce the mobility of hazardous substances. Chemical Neutralization: Using chemicals to neutralize the hazardous properties of waste.

After processing, B3 waste that cannot be processed further must be disposed of safely in an appropriate disposal facility, such as a landfill specifically designed for B3 waste. These facilities must be equipped with waterproof coatings and leachate management systems to prevent soil and water contamination. Law no. 32 of 2009 concerning Environmental Protection and Management: Provides a general legal framework for environmental protection, including B3 waste management. Government Regulation no. 101 of 2014 concerning B3 Waste Management: Regulates the management of B3 waste, including identification, storage, transportation, processing and disposal. Minister of Environment and Forestry Regulation No. P.56/Menlhk-Setjen/2015: Determine technical requirements for managing B3 waste from health service facilities. 4. Suspension or termination of the license

In general, environmental provisions will continue to apply in the UUPL, with the exception of articles that have undergone changes. The provisions of article 1, number 1 of the UUPPLH define the environment as the unity of all things, energies, conditions and organisms, including human beings and their behavior, which affect nature and affect the continuity and well-being of life be. human beings and other living things. Furthermore, number 2 of the same article defines environmental protection and management as coordinated and coordinated efforts to preserve ecological function and prevent pollution and/or

environmental degradation, including planning, exploitation, control, management, control and legislation includes enforcement is enforced. This regulation aims to prevent environmental pollution and damage. In the midst of the Covid-19 pandemic and increasing public understanding of the importance of health, medical waste is a real threat. Most of the medical waste produced by hospitals is classified as B3 waste, considering the negative impact of hospital medical waste if it is not disposed of properly. Apart from that, medical waste from hospitals also meets the characteristics of B3 waste in accordance with the provisions of Article 5 paragraph (2) of Government Regulation Number From the 2014 Hazardous and Toxic Waste Management Regulations, including as follows example: Flammable, Contagious, Explosives, Corrosive, Poisonous and Reactive

Article 1 No. 21 UUPPLH defines B3, where B3 is the energy, substance or other constituent that due to its concentration, nature and quantity, directly or indirectly, can pollute and harm the environment, and the Environment can endanger health. as well as the existence of human beings and other organisms, while it is based on article 1, no. 22 defines B3 waste as the waste from an occupation or activity that contains B3 elements. Referring to the definition of B3 waste in the UUPPLH and the explanation that medical waste is also part of B3 waste, it is actually prohibited to dispose of medical waste carelessly because of the impact it can have on the environmental component. Of course, the disposal of medical waste must be separated and based on the B3 waste disposal regulations (M. Gabriel Haryanto, 2022).

The obligation of hospitals to manage in order to ensure that the sanitary waste they generate does not cause environmental problems is, without a doubt, unfounded, implicitly reflected in the provisions of article 58 of the UUPPLH to interpret What is (RFQ,2022). As indicated in Article 59, paragraph (1), hospitals are responsible for medical waste management. This management obligation means that all medical waste generated by the hospital is disposed of in an appropriate place and should not be dumped where it harms the environment. Additionally, as a derivative regulation of the UUPPLH, Government Regulation No. 2014 regarding the management of hazardous and toxic waste (B3 waste). 101, which is Article 1, no. B3 of 3 defines waste: hazardous and toxic waste, which will be referred to later. B3 as waste, is the remainder of a business and/or activity that contains B3. Additionally, this PP stipulates that waste generated from hospital and clinical laboratories is included in the list of waste B3. Types of waste include clinical waste, expired drugs, contaminated laboratory equipment, drug packaging, laboratory waste, incineration residues.

### ***Laws relating to medical waste management that do not comply with environmental quality standards***

Management is based on law, based on both laws and government regulations, there are strict restrictions on parties that do not comply with medical waste management because some of this waste is classified as B3. The provisions related to criminal sanctions regulate the provisions of the Law on the Criminal Procedure Code related to stages of the investigation, evidence and

criminal sanctions. In implementing a criminal environment, criminal law enforcement efforts are required as a last resort (ultimate measure) when administrative law enforcement efforts have failed. Sanctions or criminal threats in PPLH law are divided into two types of environmental crimes, namely formal crimes and material crimes (Sofie widyana p, 2022):

- a. acts of pollution and/or destruction, such as material crimes to prevent the consequences of environmental pollution.
- b. The formal crimes to be proved are sufficient to prove whether the defendant violated the provisions of the applicable laws.

It proves whether the prohibited act was committed or not

Management of medical waste that does not comply with environmental quality standards can give rise to various serious legal consequences, both from environmental and public health aspects. Research results in various countries show that non-compliance with medical waste management regulations can result in environmental pollution, increased risk of disease, and legal sanctions for violators.

### 1. Legal and Environmental Consequences

Non-compliance with quality standards for medical waste management can result in environmental pollution, which impacts water, land and air. Medical waste that is disposed of carelessly or not treated properly can contain dangerous pathogens, toxic chemicals and radioactive substances that have the potential to pollute natural resources. Research by Al-Khatib et al. (2009) in Palestine shows that poor management of medical waste causes water and soil pollution, which can result in serious health problems in local communities. In Indonesia, a study by Ramlan et al. (2018) found that medical waste management that does not comply with standards contributes to significant environmental pollution, including contamination of water sources and soil around health facilities.

### 2. Legal consequences for health

Medical waste that is not managed properly can pose health risks to health workers, waste management officers and the general public. These risks include nosocomial infections, infectious diseases, and exposure to hazardous chemicals.

Research by Basse et al. (2006) in Nigeria showed that poor management of medical waste causes an increased risk of infection for health workers and the surrounding community. In India, a study by Gupta et al. (2009) noted that medical waste management that did not comply with standards resulted in an increase in cases of hepatitis B and C among health workers.

### 3. Legal Consequences and Sanctions

In many countries, including Indonesia, violations of medical waste management regulations can result in heavy legal sanctions, including fines, revocation of operating permits, and even criminal penalties. Regulations such as Law no. 32 of 2009

concerning Environmental Protection and Management in Indonesia stipulates sanctions for violations of waste management that pollute the environment.

Research by Sarifah (2017) shows that the implementation of legal sanctions in Indonesia still faces challenges, including a lack of supervision and strict law enforcement. However, there are several cases where health facilities are subject to fines and administrative sanctions due to medical waste management violations.

## **CONCLUSION AND RECOMMENDATION**

At the government level, medical waste management in hospitals is regulated by the government, generally contained in the Environmental Protection and Management Act No. 32 of 2009 and the Health Act No. 36 of 2009. Government regulation of hospitals can be imposed when the legal consequence is an administrative restriction in the form of a written ban. In addition to administrative sanctions, criminal sanctions may be imposed on persons who cause environmental pollution by discharging large quantities of waste under Article 98 of Law No. 32 of 2009 on the Implementation of Environmental Protection. In addition to administrative and criminal sanctions, there are civil sanctions, namely Article 1365 of the Civil Code on the Protection and Management of the Environment, under which persons who pollute and/or destroy the environment may be subject to criminal penalties pursuant to Article 40, paragraph 1 of Law No. 32 of 2009. Law No. 32 of 2009, Any person who pollutes and/or destroys the environment may be punished in accordance with Article 40, paragraph 1 of Law No. 32 of 2009.

## **FURTHER STUDY**

The limitation in this research is that medical waste processing has a positive impact on the environment. However, researchers hope that there are other factors that can influence it related to creating a healthier environment by not littering, preserving nature and making effective tools, especially medical ones, that can be recycled.

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