Evaluation of implementation about Covid-19 medical waste management policies in health care facilities

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Abstract. This paper evaluates policy implementation that discusses the management of medical waste in health care facilities. The government establishes a waste management policy with the Decree of the Minister of Health concerning Guidelines for the Management of Medical Waste for Health Service Facilities and Waste from Isolation Activities or Independent Quarantine in the Community in Handling (Covid-19) to prevent transmission and controlling the spread of Covid-19 and protecting health workers, non-health workers, and the public from the impact of waste in handling Covid-19. Although regulations related to the management of Covid-19 waste have been set, there are still problems in some areas in their implementation. The literature study was conducted to evaluate the implementation of medical waste management policies in health care facilities. Evaluation is seen based on socialization, implementation, and policy results. Based on the results of the literature study, it was found that the socialization of the policy had done well, evidenced by the implementation of socialization about medical waste in health care facilities. The implementation encountered several obstacles, such as limited shelters, shortage of waste destruction equipment, and medical waste transportation and processing services that had not yet reached all areas in Indonesia.

1. Introduction
A virus that occurred in China named covid-19 now has expanded to the whole world, including Indonesia. The Covid-19 pandemic impacts the paralysis of economic activities, community social activities, and the environment. The increase in Covid-19 cases has resulted in an increase in Covid-19 waste originating from hospitals, health facilities, and individuals, including those infected with masks, gloves, and other protective equipment, which are being produced during this pandemic. Covid-19 waste can also be classified into two types: waste in hospitals and health care facilities. All waste generated within the treatment facility should be considered medical waste and should be collected and disposed of with additional precautions and treatment [1].

Several guidelines have been proposed ranging from: (1) Proper management of municipal solid waste using personal protective equipment, safety practices, and administrative and engineering controls; (2) Manage Covid-19 contaminated medical waste as regulated medical waste; (3) Recycle waste using safety practices that prevent infection and cross-contamination; and (4) wastewater treatment using ultraviolet irradiation for inactivation [2]. Nationally, data from the Ministry of Health in 2020 showed the number of healthcare facilities with a processing facility licensed waste collector or incinerator currently only amounts to 120 hospitals out of 2,880 hospitals, and only five hospitals have an autoclave [3]. All provinces should have medical waste processing equipment in their area. In Central
Java, several issues were discussed, including the processing of medical waste used for handling Covid-19. Many hospitals with their incinerator or medical waste burning tool cannot operate because it is constrained by permission of the Ministry of Environment and Forests [4].

Therefore, it is important to evaluate the implementation of policies related to the management of COVID-19 medical waste in health care facilities. In this study, evaluation visits based on three stages of the implementation process [5], there is: (1) Socialization is a stage to sending information from the government to the target group with the purpose of the target group can understand what policy will be implemented by the government, so they are not only limited to receiving what is given by the government, but the target group can also play an active role in supporting a policy implementation or participate with the involvement of the target group to realize the policy objectives; (2) The implementation stage is an activity to deliver the policy output to the target group. The implementation stage is considered successful if the policy arrives and is well received by the target group with several indicators including timely delivery, right quantity, right quality, and right on target; and (3) Results, there is this stage that is the result of the policy if the policy output has been up to the target group and direct impact or effect on the target group.

2. Methods
This study is a literature review using the Preferred Reporting Items for Systematic Reviews and Meta-analyses method, commonly called PRISMA. This method is carried out systematically by following the correct stages or research protocols. A successful review involves three main stages [6]: planning, conducting, and reporting the review. The source research database used to search the literature is through the news on the internet based on criteria related to the management of Covid-19 waste in health services facilities.

3. Results and discussions
At the socialization stage for managing COVID-19 medical waste, the Ministry of Health has guided Advanced Level Referral Health Facilities to manage their waste. In addition, health facilities can also work together with third parties. At the socialization stage, the Ministry of Environment and Forestry, in collaboration with Commission IV of the Indonesian House of Representatives, carried out the Socialization of Handling Waste Processing, Covid 19 Infectious Waste at Health Service Facilities in East Kalimantan [7]. In Bali Province, the Tabanan Regency Government, in collaboration with the Ministry of Environment and Forestry and Commission IV of the Indonesian House of Representatives, held socialization on handling Covid-19 Infectious Waste. On this occasion, assistance was also handed over to Marga Village, Dauh Peken Village, Banjar Anyar Village, Kediri, and Timpag Kerambitan Village in the form of B3 waste binoculars for health facilities and PPE clothing from the Ministry of Environment and Forestry together with the Commission IV DPR RI [8]. In North Sumatra, the Environment Service (DLH) and the Health Office held socialization by presenting resource persons from the North Sumatra Provincial Health Office and Binjai City DLH. Head of Environmental Dispute Settlement Section Nila Kesuma Saragih, ST, MAB, in his presentation, explained Health Service Facilities (Fasyankes) to have Temporary Storage Places (TPS) for Hazardous and Toxic Waste [9].

During the implementation phase, the management of medical waste from several hospitals and other health facilities that handle Covid-19 is in accordance with the procedures. From the health facilities, it is collected and then taken to the waste treatment plant. However, not all hospitals have incinerators that meet the standards, so they must be collected in special containers and sent to the waste treatment plant. In the province of East Kalimantan, many areas have not been granted aid in supporting means of handling domestic waste. During the Covid-19 pandemic, the transportation of Covid-19 Medical B3 Waste from Quarantine Facilities to hospitals with incinerators is still carried out using government-owned public service operational vehicles (APV). Swelling of the budget for Referral Hospitals that manage waste originating from Quarantine Facilities and laboratories and there are still Referral Hospitals that do not have an incinerator operating permit. The volume of Covid-19 Medical Waste from the beginning of March 2020 was recorded at 2,512.2 Kg and increased in April by 11,979.7 Kg and
reached a peak in May of 19,514.7 kg. Most of it was managed with Hospital incinerators, and some are handed over to third parties [7].

The Regional Government of West Java Province, through PT Jasa Medivest (Jamed) has increased its waste handling capacity. This was done to anticipate the surge in medical waste related to the COVID-19 pandemics in West Java. The management capacity of Medivest Services has been increased to support the management of countermeasures from upstream to downstream. In addition, other provinces that request assistance for waste to be processed can also be assisted here [10]. Lampung Province has also collaborated with third parties in the management of COVID-19 infectious waste. Each health facility will send COVID-19 medical waste to Abdul Moeloek Hospital. Then it will be transported by a PT Biutechnica Bina Prima transporter to be destroyed by PT Wastec [11]. In the Mentawai Islands, the handling of infectious waste at the Muara Siberut Health Center and the Siberut Pratama Hospital, which is the isolation place for Covid-19 patients in Siberut is in accordance with technical instructions according to SE MENLHK 2/2020. The Siberut Primary Hospital is still under construction, and its operational supervision is still under the Siberut Health Center, especially when treating Covid-19 patients. Although the Siberut Pratama Hospital does not yet have the incinerator equipment (perfect burner) as contained in the SE KLHK, waste from the treatment of Covid-19 patients such as syringes, hazmat clothes, and other equipment used to treat patients is destroyed in a special area with how to burn to dust [12].

In Central Java, the problem is that the domestic Covid-19 medical waste storage (eating and drinking utensils, tissues, and PPE) has not been packaged in an airtight box that a third party will later transport. In addition, the incinerator is currently in a state of disrepair to function as a Covid-19 medical waste management tool [13]. Medical waste covid-19 at a health facility in Solo, Central Java troubled with shelter. This is because the temporary shelters for medical waste in each health facility will fill up quickly. In addition to Solo, much plastic waste to medical waste was scattered on the pedestrian bridge (JPO) in the Simpang Tujuh Kudus area, Central Java. There are also antigen test kits and syringes that are also disposed of carelessly [14].

4. Conclusion
Regarding the socialization of Covid-19 waste management, it has been running according to regulations in some areas. However, various obstacles were encountered when implementing waste management, including not all health facilities have incinerators. Some already have incinerators but do not yet have operational permits. In addition, the lack of waste storage and the difficulty of transportation from health facilities in collaboration with third parties to the company as a place of management are also problems in several health facilities. Issues related to the management of Covid-19 waste can be given a solution by adding temporary shelters at health facilities and incinerators. In addition, waste transportation in some areas also needs to be considered.

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