

## EXTENDED ABSTRACT

# Management of Solid Medical Waste in Hospital a Logic Model Approach: A Literature Review

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## SUMMARY

Medical waste solid has potentially raised the risk of occupational accidents and disease transmission for the doctors, nurses, technicians, and all related to the management of the hospital or of patient care and hospital visitors. The purpose of research conduct and management of solid medical waste in hospital. Method of collecting secondary data is literature study. Furthermore, the conducted literature review, performed a survey paper on a research topic, Then analyze and deeply synthesize the paper with logic model approach. The data was analyzed using descriptive analysis. The results of the research reveal that the situation of medical waste solid have the potential risk of the occurrence of the accident. The inputs was the availability of trash according to type of garbage, the availability of sufficient power, the system is developed well, the technology support and the existence of the partnership to third parties. Reduce the number of medical waste solid is priority. decreasing the amount of waste solid medical in hospital. The medium-term with the reduced risk of accidents, of transmission of diseases such as nosocomial infections will be reduced and ambient air quality will be better, decreased the number of medical waste solid due to the presence of recycling. Categorizing the trash according to type of garbage, the availability of sufficient power, the system is developed well, the technology support and the existence of the partnership to third parties. The outputs were the activities supported with resources and the existing infrastructure to achieve the minimization of medical waste solid in the hospital. The outcomes are reducing the number of accidents, nosocomial infections and environmental pollution.

**Keywords:** Management, Solid Medical Waste, Logic Model

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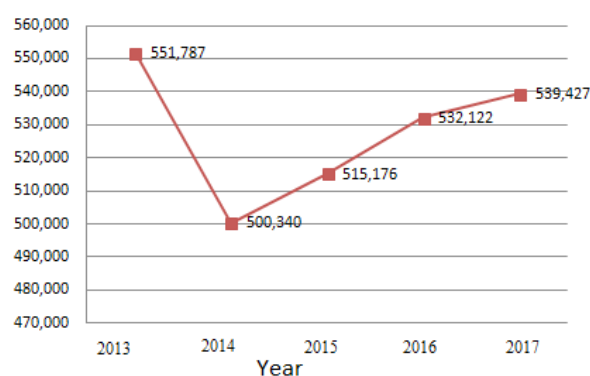
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## INTRODUCTION

Medical waste solid had potentially large in raises the risk of occupational accidents and disease transmission for the doctors, nurses, technicians, and all related to the management of the hospital or of patient care and hospital visitors. The amount of generation of medical waste solid per year in RSUD Dr Soetomo Surabaya [1] with the measurement period for 5 years i.e. year 2013 s/d in 2017 as shown in Figure 1.

## MATERIALS AND METHODS

Research methods used are secondary data which is literature study. Library studies collect information relevant to the topic under study. That information can be obtained from scholarly books, research reports,



**Figure 1: The amount of Generation of Medical Waste Solid per Year in RSUD Dr Soetomo Surabaya 2013 until 2017**

articles, scientific thesis and dissertation, regulations, statutes, yearbooks, encyclopedias and written sources both printed and electronic, as well as other research journals. Furthermore, the conducted literature review, performed a survey paper on a research topic then make analyze and deeply synthesize the paper that is reviewed with logic model. Logic model is a method

or systematic way and the visual in the present and give an understanding of the relationships between the resources, plan the activities of a program, change as well as the results to be achieved (Figure 2). Logic model is a tool that serves for planning, management, and evaluation of a program [2]. The data was analyzed using descriptive analysis.

**RESULTS AND DISCUSSION**

Controlling waste is an important part of public health where improperly managed waste can create conditions that may have severe adverse effects on public health and the environment [3].

Solid waste medical includes nine types of waste i.e. infectious waste, pathology, sharp objects, pharmaceutical, sitotoksis, chemical, radioactive, the container is pressurized and is constituted of a heavy metal [4]. Controlling waste is an important part of public health where improperly managed waste can create conditions that may have severe adverse effects on public health and the environment [3].

**Situation**

Solid waste medical includes nine types of waste i.e. infectious waste, pathology, sharp objects, pharmaceutical, sitotoksis, chemical, radioactive, the container is pressurized and is constituted of a heavy metal [3]. Controlling waste is an important part of public health where improperly managed waste can create conditions that may have severe adverse effects on public health and the environment [4].

Solid waste of the hospital such as needles are disposed together with household waste, harm to the janitor while enhancing the transmission of HIV (99%) via syringe used [5]. Factors supporting the occurrence of infections nosocomial is environmental factors. water, air, and materials that must be disposed of or waste is a group of environmental factors. Clerk waste collector is a person which most at risk for infection with nosocomial due to direct contact.

**Priority**

Reducing the amount of medical waste solid waste management implemented according to the procedure in the Environmental management System can help minimize the environmental impact, as well as the cost needed to manage waste [6]. The reduction of waste amount and sorting waste is a top priority to go Green Hospital. Reduction activities also reduce the adverse effects to the environment and society.

**Inputs**

The availability of bins, personnel, systems, technology and partnership. The efforts of good management with the adequacy of the financial and management organization, tools and means. The availability of human resources who received training in penanganan medical waste will reduce the occurrence of number of accidents [7].

**Outputs**

Activities supported with resources and the existing infrastructure to achieve the minimization of medical waste solid in the hospital. The goals should be done by performing the recycling of medical waste solid, 13

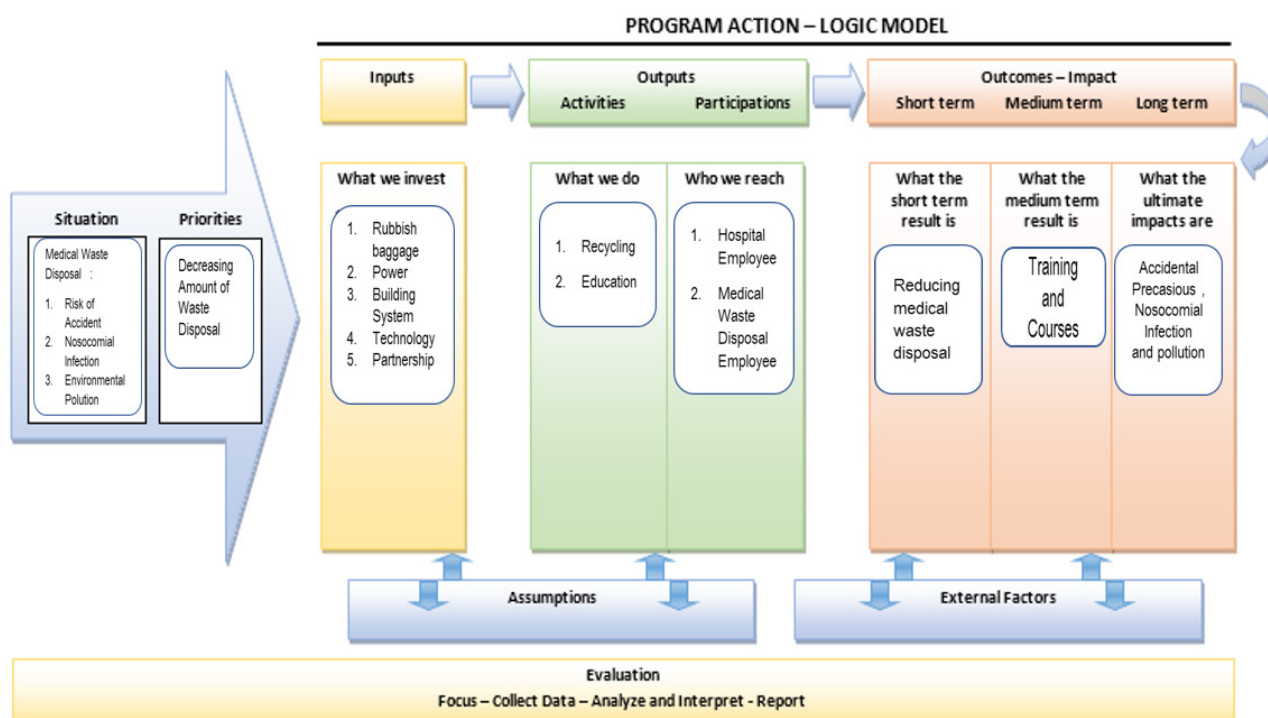


Figure 2: The implementation of the Logic Model in the Management of Medical Waste Solid in the Hospital based on Powell, 2008 [2]

doctors (68,4%) at one Hospital in Bandung said that recycling is one of the efforts to reduce waste [8]. It takes discipline health personnel in disposing of garbage according to type of garbage . The knowledge abouts very important to established in every officer in the disposal of medical waste [9]. Cooperation with third parties needs to be improved.

### Outcomes-Impact

Outcomes short-term with decreasing the amount of medical waste solid in the hospital. The medium-term with the reduced risk of accidents, of transmission of diseases such as nosocomial infections will be reduced and ambient air quality will be better, decreased the number of medical waste solid due to the presence of recycling. The short term recycling and combustion with skillfully to reduce the amount of waste solid medical hospital [10]. The Long term will reduce the number of accidents, nosocomial infections and environmental pollution.

### The Assumption

Program leaders who supported the availability of power and adequate infrastructure and discipline awakened in the system including the third party will be able to achieve the goals that have been defined.

### External Factors

The success of a program in managing medical waste solid this need to be supported by the various relevant agencies. Sanitarians also need to make a recording of the reporting of medical waste management solid based Guidelines for Management of Medical Waste Sharp at the Center for Public Health [11]. Hospital Policies Jogja by performing the contract system to facilitate the supervision of officers. The contract system makes the process of solid waste management to be more effective, because if the officer did a fatal mistake it can be terminated at any time by agreement is a contract [12].

### CONCLUSION

Waste management medical solid at the hospital with the approach logic model shows that the situation of medical waste solid are risky, with priority decline in the number of medical waste solid, the inputs with the conditions of labor and technologies that exist, outputs the minimization of waste by recycling medical waste solid so that the outcomes will reduce the number of accidents, nosocomial infections and environmental pollution.

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