

Chapter 16

Structure Development for Effective Medical Waste and Hazardous Waste Management System

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ABSTRACT

Management of medical and hazardous wastes is a serious problem especially for developing countries. People are not aware of possible threats and/or they are afraid of the cost of application. Rapid population growth leads municipalities towards proper solid waste management applications. In this study, data were collected from the Turkish Statistical Institute and a general framework was drawn for medical and hazardous waste amounts and disposal methods. Starting from this point of view, the authors analyzed both the Regulation on Control of Hazardous Waste and the Regulation on Control of Medical Waste applied in Turkey. Taking into account all of these factors, this chapter is intended to develop the medical and hazardous waste management system economically and environmentally including waste generation, collection, transportation, disposal and treatment activities. Additionally, it investigates the reasons for lack of proper application of the regulations in light of the statistical data.

INTRODUCTION

Handling of medical and hazardous waste has been a serious problem for countries all over the world. Economically developing countries are facing the waste management issue more than developed countries. An effective waste management system necessitates special operations, which have to be subjected

DOI: 10.4018/978-1-4666-9723-2.ch016

to wastes in order to prevent damages for both environment and human health. National policy, training of employee and increased public awareness are the fundamentals of medical and hazardous waste management system.

Unless the collection and disposal of medical waste are applied separately, transmission of diseases will be unavoidable. Additionally this situation causes some problems including economic and environmental issues. Therefore, to increase the quality of life, medical waste management system should be applied and shed light on the service manner in terms of technical, social, economic and environmental areas.

Likewise, both hazardous wastes; which affect environment, human health and other living organisms negatively in physical, chemical and/or biological ways; and hazardous waste management system are very important matters for developing societies to deal with. As a result, for the protection of the environment and sustainable development, integrated medical and hazardous waste management system should be developed and applied depending upon related regulations.

As a part of this study, related regulations, application requirements, sources of medical and hazardous waste, classification of waste, responsibilities of waste generators, municipalities and ministries are subjected. Moreover, all stages will be examined separately, starting from the generation to the disposal of waste. Within this context, the following topics will be referred: collection of medical and hazardous waste in a separate way, processes to reduce the amount of waste, temporary storage, transport and methods for disposal.

BACKGROUND

Definition of Medical Waste

The medical waste definition covers the waste that is produced by medical facilities, research units and laboratories. In addition, there are small and distributed sources of medical waste, for example household medical waste which can be expressed as dialysis waste, insulin syringe or hypodermic needles etc. (Tchobanoglous et al, 1993).

According to WHO (2011) around 75% to 80% of waste produced by medical activities are considered as nonhazardous wastes. These are called as “general medical waste” which is produced by administrative activities of medical facilities, and must be processed as household wastes.

Classification of Medical Waste Generated from Healthcare Organizations

Medical waste producers are classified related to the size of the waste that they produce; as small, medium and large. Some examples for these producers can be found in the following table: (Regulation on Control of Medical Waste, 2005) (see Table 1).

Infected Waste

Contagious waste may contain pathogens such as bacteria, viruses, parasite and fungus; and this situation may cause some diseases. This contains the following classes;

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