

Pandemic and Sustainability Practices: A Case of Waste Management at Hospitals

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EXECUTIVE SUMMARY

The whole world was disturbed because of COVID-19. It brought several positive and negative effects on human, environment, and climate. During the lockdown period of COVID-19, all movements and activities slowed. All socio-economic activities, industrial workshops, and production units were completely closed. Due to restriction and slowdown of these activities, some environmental conditions improved including air quality and water pollution. But due to the increasing number of COVID-19 patients, rate of generation of medical waste increased (PPE kit, face mask, and hand gloves). Unplanned discarding and production of medical waste causes ill effects on the environment as well as human beings. These environmental and human consequences have long-lasting effects; therefore, they require proper and well-planned sustainable strategies for a better future and to overcome these consequences. The COVID-19 pandemic has obtained an overall global response to win this COVID-19 battle.

INTRODUCTION

Medical waste, also known as hospital waste or health care waste is serious concern to the society. It refers to all type of waste generated from health care activities and health care centers including laboratories, clinic, blood banks, hospitals etc. (Tsai, 2021). WHO estimated that bio-medical waste contains approximately 10% infectious waste, 85% non-hazardous waste and 5% non-infectious waste (Datta et al., 2018).

During COVID-19, hospitals generated more waste as compared to before pandemic conditions (Mekonnen et al., 2021). In Wuhan city of China, daily hospital waste increases from 40tons/day to 240tons/day. In US, generation of hospital waste increases from 2.5 million tones/year to 5 million tones /year (Ilyas et.al, 2020). Increase in hospital waste generation causes greater challenges to the world as well as environmental health specially in the lower middle-income countries. Towards the proper management of hospital waste, there is significant difference in management techniques of developed and developing countries (Caniato et al., 2015; Tsai, 2021). It affects most specially in those countries which are not much developed and also not having advanced technologies for their waste disposal and treatment like Bangladesh (Rahman et al., 2020).

It is estimated that across the world approximately 5.2 million people die due to mismanagement of medical waste (Rahman et al., 2020). Because it causes spreading of many infectious diseases some infectious disease like hepatitis, cholera, and typhoid are causing due to improper disposal of single-use biomedical equipment (WHO, 2018). The well-developed countries manage their health care waste properly by using appropriate disposal methods like dumped in sanitary landfill and energy recovery. Besides developing countries disposed their health care waste in mismanaged way like dumped in open area that cause serious public health. (Yasmin and Rahman, 2017). During COVID-19 period one of the reasons of spreading is lack of proper management of generating medical waste from COVID patients (Kumar & Malhotra, 2021). Sometimes health care waste is mixed with municipal city waste and burnt in open area that can pollute the environment because of emission of harmful pollutants in atmosphere. So appropriate management and disposal of medical waste is necessary for public health and environment health. Generally, in total amount of waste generated from health care units contribute about 85-90% general or non- hazardous waste. Remaining 10-15% waste is considered as hazardous waste that may be infectious or radioactive (WHO, 2020).

In normal conditions, no special treatment is required for non- hazardous waste. This is only processed with normal waste treating methods like disinfection, reuse, recycle, landfilling and incineration etc. But during COVID-19 pandemic, all type of waste generated from hospital require special disinfection treatment and disposed with extra care while taking all the precautionary measures. (Liang et.al,

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