

Disinfection Techniques in Biomedical Waste Management for COVID-19 Hospital Infections

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DESCRIPTION

Biomedical or hospital waste is any type of waste containing infectious (or potentially infectious) material. Waste (or waste) is material that is unwanted or unusable. Waste is material that is disposed of after primary use or is worthless, defective and useless. Infection is the invasion of tissues by pathogens, their proliferation, and the response of host tissues to pathogens and the toxins they produce. An infectious disease, also known as an epidemic or an pandemic, is a disease caused by infection. Medical waste disposal was recognized as a problem in the 1980s and the Medical Waste Tracking Act of 1988 became the new standard for biohazardous waste disposal. Waste management or waste disposal also includes the processes and actions necessary to manage waste from creation to final disposal. This includes the collection, transportation, treatment and disposal of waste, as well as the supervision and regulation of waste management processes and waste-related legal, technical and economic mechanisms.

Although the federal government, EPA, and DOT provide some oversight of regulated medical waste storage, transportation, and disposal, the majority of biohazardous medical waste is regulated at the state level. Each state is responsible for regulating and managing its own biohazardous waste, and regulatory processes vary from state to state. Biohazard waste records also vary from state to state. Medical health centers, hospitals, veterinary clinics, clinical laboratories and other facilities generate over one million tons of waste each year. Most of this waste is as benign as regular household waste, but up to 15% of this waste poses a potential risk of infection, according to the Environmental Protection Agency (EPA), does not need to be rendered infectious before

disposal. There are a variety of methods for handling and disposing of biohazardous waste. In the United States, the primary methods of handling and disposing of biohazardous, medical, and sharps waste include: Incineration, Microwave, Autoclave, Mechanical/Chemical Disinfection and Irradiation. Incineration is a waste treatment process that burns the substances contained in the waste. Industrial waste incineration plants are commonly called waste-to-energy plants.

High-temperature waste treatment systems such as incineration are called "heat treatment", and irradiation is the process of exposing an object to radiation. Exposure can come from a variety of sources, including natural sources. Most commonly, the term refers to ionizing radiation and levels of radiation that serve a specific purpose rather than normal background radiation exposure. The term irradiation generally excludes exposure to non-ionizing radiation such as infrared, visible light, microwaves from mobile phones, or electromagnetic waves emitted by radio and television receivers and power supplies, and finally, an autoclave is a machine used to perform industrial and scientific processes that require elevated temperatures and pressures relative to ambient pressure and/or temperature. Autoclaves are used to perform sterilization before surgery and in the chemical industry for curing coatings, vulcanizing rubber and hydrothermal synthesis. Industrial autoclaves are used for industrial applications, especially the production of composite materials. Finally, different forms of biohazardous waste required different treatments for proper waste management. This is largely determined by state regulations. There are now several contractors focused on medical, sharps, and biohazardous disposal. Stericycle and Daniels Health are his two national leaders in medical waste and drug waste in the United States.

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