

# Safe Disposal of Medical Waste and Infection Control in Health Sector

Hanaa K.Almogait<sup>1</sup>, Najeeba A.Almusabbah<sup>2</sup>, Mariam M.Aldubisi<sup>3</sup>, Esraa A.Alzaher<sup>3</sup>, Zahra A.Alhejji<sup>4</sup>, Abbas M.Alnasurullah<sup>5</sup>, Hassan M.Alaqeeli<sup>5</sup>, Mahmood H.Al abd alwasi<sup>5</sup>, Abdulqader O.Alohali<sup>6</sup>, Abdullah S.Hawsawi<sup>5</sup>

Emergency medical services specialist at branch of the ministry of health in the eastern region<sup>1</sup>

Laboratory specialist at central blood bank in Dammam<sup>1</sup>

nursing technician at Alkhaleej PHC<sup>2</sup>

nursing specialist at central blood bank in Dammam<sup>3</sup>

nursing technician at central blood bank in Dammam<sup>4</sup>

laboratory technician at central blood bank in Dammam<sup>5</sup>

laboratory technician at regional laboratory in Dammam<sup>6</sup>

---

## Abstracts

The current study aims to know how to safely dispose of medical waste through infection control in health facilities, knowing the waste to be disposed of, and knowing the types and colors of medical waste bags in health facilities. A questionnaire was prepared via Google and distributed to the population between the ages of 25-55 years, men and women in the city of Dammam. It was distributed via the social networking program (WhatsApp). 600 questionnaires were distributed, and 580 answers were obtained via the Google Drive program. It is concluded that, the method of safe disposal of medical waste in infection control in health sectors is very important.

**Keywords:** Safe disposal, medical waste, infection control, health sector.

## 1. Introduction

Medical waste, is rubbish that is potentially spoiling or biodegradable (1). Medical junk may contain trash produced from a medical facility or laboratory, and garbage generated from research centers and laboratories that include biomolecules or organic organisms that are not permitted to be freed into the environment. As shown below, severe materials are considered medical waste that must be disposed of, whether they are infected or not, due to the possibility of them being spoiled with blood and give rise to wounds when damaged incorrectly and incorrectly. Medical rubbish is a kind of biological waste. Standards: A report of expectation that determined the structures and process that must be in place significantly in the organization to improve the quality of care,” (2). - Medical rubbish department is: portion of the environmental administration system. A spoiling disallowed and control (IPC) program is: a set of organized

activities Designed to block and control infectious illness and contamination linked with health care in the environment Healthcare, (3). The comprehensive operations that carries out the process of: monitoring, collecting, transmitting, curing, recycling or disposing of medical rubbish. (4). Medical junk, may be rigid or runny. Examples of contagious medical waste contain infection blood, sharps, unwanted microorganisms, careless body section, other human and animal tissues, used dressing and gloves, and other medical tools that may have been insecure to immediate connect with blood or body fluids. Laboratory rubbish that exhibits one of the above-mentioned characteristics, and acute waste, contain spoiled needles, scalpels, scalpels, whether used or unused that were discarded, and other tools eligible of penetrating the skin. Medical junk is produced from medical and biological reason and activities, such as diagnosis, prohibition, and curing. The most popular places for producing such waste are hospitals, health clinics, nursing homes, medical research laboratories, veterinarian clinics, dental clinics, home health care, and funeral homes. In medical institutions, waste is called medical waste or clinical waste. Medical junk is special from other ordinary waste or general garbage and it is also various from kinds of danger waste such as chemical waste, radioactive waste, or industrial waste. Medical institutions produce hazardous waste, both chemical and radioactive. While some of this waste is usually not infectious, it requests proper action. Some waste is considered doubly serious, such as tissue samples protected in formalin. Disposing of this junk is an environmental issue, as many medical rubbish fall under the ranking of hazardous or infectious, which may lead to many infectious diseases. A 1990 US Agency for Toxic Substances and Disease Registry report concluded that the general public was unlikely to be adversely affected by medical waste generated in traditional health care. It was found, however, that medical waste from this field may lead to injuries and exposure to risks for doctors, nurses, and all workers in health care institutions through contact with medical waste resulting from professional activity. Furthermore, there is an opportunity for the general public to be exposed to hazardous waste such as exposure to illicitly used needles outside of healthcare settings or in-home healthcare situations (5). The process of managing and disposing of medical waste must be done properly in order to protect the environment, the general public, and the world, especially health care workers and health facilities who are most at risk of medical waste as an occupational hazard. The medical waste management process includes several steps: production, collection, management, storage, treatment, transportation, and finally disposal (6). Kinds of waste :rubbish and by-products cover a diverse range of tools, as the following list illustrates: contagious waste: waste spoiled with blood and other bodily fluids (e.g., from discarded diagnostic samples), cultures and stocks of infectious agents from laboratory work (e.g., waste from autopsies and infected animals from laboratories), or junk from patients in isolation wards and equipment (e.g., swabs, bandages, and disposable medical devices); Pathological waste: human tissues, organs or fluids, body parts, and contaminated animal carcasses; severe: syringes, needles, disposable scalpels and blades, etc.; Chemicals: for example, solvents used for laboratory preparations, disinfectants, and heavy metals contained in medical materials (e.g., mercury in broken thermometers) and batteries; Pharmaceuticals: expired, unused, and infected drugs and vaccines; Genotoxic waste: highly hazardous, mutagenic, teratogenic, or carcinogenic, such as cytotoxic drugs used in cancer treatment and their metabolites; Radioactive waste: such as products contaminated by radionuclides including radioactive diagnostic material or radiotherapeutic materials; and Nonhazardous or general trash: waste that does not pose any particular biological,

chemical, radioactive, or physical hazard. High-income countries generate on average up to 0.5 kg of hazardous waste per bed per day; while low-income countries generate on average 0.2 kg. However, health-care waste is often not separated into hazardous or nonhazardous wastes in low-income countries making the real quantity of hazardous waste much higher.

## 2. Material and Methods:

The study started in (the city of Dammam in Saudi Arabia), began writing the research and then recording the questionnaire and ended with data collection writing and end the study in June 2024. The researcher used the descriptive analytical approach that uses a quantitative or qualitative description of the social phenomenon (Safe disposal of medical waste and infection control in health facilities) The independent variable (how to safely dispose of medical waste in health facilities in the world), and the dependent variable (how to safely dispose of medical waste in health facilities in Mecca). This kind of study is characterized by analysis, reason, objectivity, and reality, as it is concerned with individuals and societies, as it studies the variables and their effects on the health of the individual, society, and consumer, the spread of diseases and their relationship to demographic variables such as age, gender, nationality, and marital status. Status, occupation (7), And use the excel 2010 Office suite pie chart to arrange the results (8). A questionnaire is a remarkable and helpful tool for collecting a huge amount of data, however, researchers were not able to personally interview participants on the online survey, the answered the questionnaire electronically, it consisted of ten questions, all of which were closed.

## 3. Results and discussion:

The percentage of those who agreed to participate in the research questionnaire was 100%, and their age, from 25-34 years old, was 10.5%, while the percentage of participants' ages was highest at 42.1%, while the largest percentage was from 45-55 years old, which was 47.4%, all The answers were from people who were aware of the importance of safe disposal of medical waste in combating infection in health facilities, from their point of view. As for determining their gender, the percentage of males was higher at 63.2%, while females were 36.8%. As for their nationalities, the percentage of Saudis was 94.7%, while non-Saudis were 5.3%. As for the educational status, it was as follows: illiterate (cannot read or write) 0%, primary 0%, middle school 0%, secondary school 36.8%, university 52.6%, postgraduate and doctoral studies 10.2%. As for their professions: not working 0%, government employee 100%, private sector employee 0%, retired 0%, self-employed 0%, student 0%. When moving on to their answers to the questionnaire questions, they were as follows: first question: Do you have a clear working guide on how to safely dispose of medical waste by controlling infection in health facilities? Yes 78.9% and no 21.1%. The second question: Do you have a clear, official program from the Ministry of Health on how to safely dispose of medical waste by combating infection in health facilities? Yes 68.4% and no 31.6%. The third question: Do you have knowledge of the types and colors of infection control medical waste bags that are intended for disposal in health facilities? Yes 84.2% and no 15.8%. Question Four: Do you have complete knowledge of how to safely dispose of medical waste by controlling infection in health facilities? Yes 68.4% and No 31.6%. Question

five: When dealing with medical waste through infection control, are you required to do what this requires? Yes 89.5% and no 10.5%.

Do you have the necessary tools used for safe disposal of medical waste (wearing a helmet, gloves, wearing pollution-free body gear)? Question seven: Are all medical supplies available in the health facility when dealing with medical waste for infection control? Yes 84.2% and No 15.8%. Question eight: do you know the best way to dispose of medical waste by controlling infection in health facilities? Yes 68.4% and no 31.6%. Question 9: do you have a place to store medical waste in the medical facility that meets all infection control requirements? Yes 78.9% and no 21.1%. (table.no.1) (figure N0.1)

Table.no.1: percentages of males and females

Males	Females
63.2%	36.8%

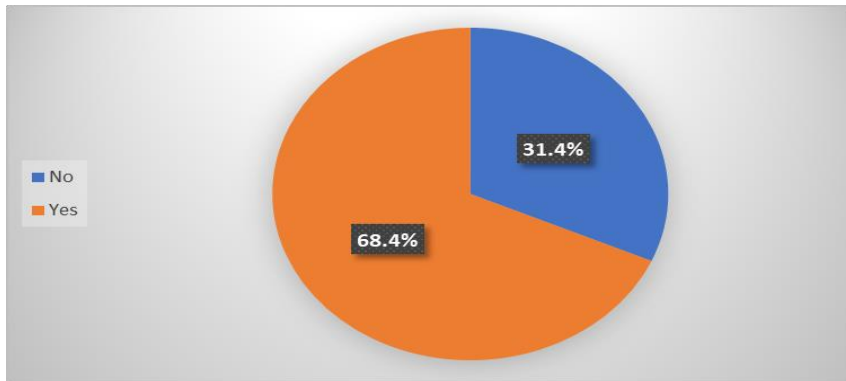


Figure No.1: Participants' opinions on how to safely dispose of medical waste through infection control in health facilities

#### 4. Conclusion:

As it shows the extent to which workers adhere to a work guide from the Ministry of Health on how to safely dispose of medical waste, by more than half (68.4%) (according to the opinions and trends of citizens on how to safely dispose of medical waste in facilities). health). This study concluded the following: More than half of the participants are familiar with how to safely dispose of medical waste. They have complete and complete knowledge of the bags and colors of medical waste due to continuous training on them, and the availability of all medical supplies on how to dispose of medical waste.(10) Ashfaq Ahmed Mir, , It was stated that medical waste must be stored in containers clearly marked with their respective categories and colors. A safety box is a vital piece of equipment for safe disposal of sharps. Finally, a sharps pit is needed for disposal. In order to guarantee Safety of people who will be responsible for collection, transportation and storage (Medical waste), they should be educated about and provided with

appropriate procedures. Appropriate protective equipment, while we find that my study surpassed his in that the workers here took continuing education courses on the subject of how to dispose of medical waste and that they already have a place to store medical waste in their health facilities, so praise and gratitude be to God.

Acknowledgment:

To start with, I would like to Praise God and thank and the researchers who make the project come to light.

## WORKS CITED

---

- Reinhardt, Peter A., and Judith G. Gordon. 1991. *Infectious and medical waste management*. Chelsea, Mich: Lewis Publishers.
- National Accreditation Board for Hospitals (NABH). (2020). *Accreditation Standards for Hospitals*, (5th edition), a constituent board of the Quality Council of India.
- Pacific Public Health Surveillance Network (PPHSN). (2021). *Infection Prevention and Control Guidelines, the Surveillance, Preparedness and Response Programme*, Public Health Division, Pacific Community, Noumea, New Caledonia
- Mustafa Zarfawi, Adam Wagdi. (2016). *Medical waste management and assessment of its environmental impacts*, Master's thesis, Faculty of Economic, Commercial and Management Sciences, Larbi Tebesi University, Algeria.
- The public health implications of medical waste: a report to Congress. Atlanta: US Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, 1990; document no. PB91-100271
- US. Congress, Office of Technology Assessment, *Finding the Rx for Managing Medical Wastes*, OTA-O-459 (Washington, DC: U.S. Government Printing Office, September 1990).
- Alserahy, Hassan Awad, et al (2008), *The thinking and scientific research*, Scientific Publishing Center, King Abdul-Aziz University in Jeddah, the first edition
- Al Zoghbi, Muhammad and AlTalvah, Abas (2000), *Statistical system understanding and analysis of statistical data*, first edition, Jordon- Amman
- Mir. Ishfaq Ahmad, Dar. Shabir Ahmad: *MANAGEMENT OF WASTE FROM HEALTH CARE FACILITIES: research scholar department of History Annamalai University, research scholar department of History Annamalai University, International Conference on Health Science, Green Economics, Educational Review and Technology 2019* <https://proceeding.unefaconference.org/index.php/IHERT>.