

MEDICAL WASTE HANDLING

INTRODUCTION

Hospitals, dental practices, veterinary clinics, laboratories, nursing homes and other health care facilities generate 3.2 million tons of hazardous medical waste each year. Much of this hazardous waste is particularly dangerous, especially when it could be radioactive or infectious. As this less glorified side of medical reality captures public attention, the question becomes: *Who is responsible for the waste?*

The answer: Everyone who works in the healthcare system, from administrators and supervisors to nurses and housekeeping staff. The ultimate responsibility for properly disposing of hazardous medical waste lies with the facility where it originates, not the waste hauler, landfill or incinerator operator.

No worker should think he or she is safe from risk from these hazardous materials. There are safety guidelines that you can follow to insure your own safety as well as the safety of co-workers and patients you work with.

Types of Medical Waste

There are four major kinds of medical waste:

- Solid waste
- Chemical waste
- Radioactive waste
- Infectious waste

Solid Waste

Solid waste is generated by most every aspect of medicine, including:

- Administration
- Patient rooms
- Cafeterias
- Nursing stations

Chemical Waste

Chemical wastes are substances like:

- Germicides
- Cleaning solvents
- Pharmaceuticals

Radioactive Waste

Radioactive waste has dramatically increased with the recent advances in nuclear medicine and is found in:

- Iodine 123
- Iodine 131
- Thallium 201

Infectious Materials

Infectious Waste

Infectious material is handled every day and includes:

- Laboratory cultures
- Blood and blood products from emergency rooms, operating rooms, pathology labs, patient rooms, laboratories, doctor and dentist offices, autopsy suites and blood banks
- Sharps
- Renal Dialysis waste

Solid Waste

Although not considered hazardous, solid waste can pollute the environment. In order to reduce solid waste, many facilities participate in recycling programs. These programs have strict rules that require trash to be sorted before disposal, thus reducing the amount of solid waste that is accumulated.

Chemical Waste

Your facility uses many chemical substances. These substances include:

- Drugs made in the pharmacy
- Gases used in anesthesia
- Gases used for sterilization
- Solvent and germicides used for cleaning

Chemical waste can create a hazardous situation like a fire or explosion. It can also harm your health if inhaled, ingested or absorbed through your skin or mucous membranes.

Always make sure you know where to find the Materials Safety Data Sheet (MSDS). The MSDS gives you information on how to handle the chemical safely and may include specific disposal information.

ALWAYS LABEL MATERIALS AND WASTE!

Disposing of Chemical Waste

Make sure to place chemical wastes in sturdy containers. When breakable containers are used, they should be placed in buckets.

DO NOT pour toxic, flammable, foul-smelling or irritating chemicals down the drain. If you are not sure about chemical disposal, ask your Environmental Safety Officer.

Radioactive Waste

Radioactive waste is any waste that contains or is contaminated with liquid or solid radioactive material. It is not generated by x-rays or other external beam therapy procedures.

Disposing of Radioactive Waste

Make sure to clearly label all containers with the radiation sign. Indicate the name and activity of the radionuclide present.

NEVER SEND RADIOACTIVE WASTE DIRECTLY TO THE INCINERATOR, POUR IT DOWN THE DRAIN OR PLACE IT IN PUBLIC AREAS.

Always place contaminated clothing, equipment and sharps into properly labeled appropriate container for treatment or disposal. Always keep radioactive waste separate from other types of waste.

Unless authorized, do not empty or move trash containers labeled with the radiation symbol - work around them. If you are not sure what to do, contact the Radiation Safety Officer immediately.

Infectious Waste

Infectious waste identifies any waste material that has the potential to carry disease. Between 10 and 15 percent of all medical waste is considered infectious. The two most common and dangerous types of infectious diseases found in medical waste are hepatitis B virus (HBV) and the human immunodeficiency virus (HIV).

Disposing of Infectious Waste

Make sure all waste has been properly labeled and is in a leak-proof, puncture-resistant **red** container. All infectious waste must be decontaminated on-site or taken off-site by a licensed facility.

Segregating Waste

Segregating infectious waste from other solid and chemical waste at the point of origin is another strategic weapon in the fight against potential contamination.

If multi-hazard mixtures occur, make sure to label them separately. These need to be disposed of differently than if they contained only one hazard.

How to Protect Yourself

Working together, healthcare employers and employees can dramatically reduce the chance of exposure to infectious waste by developing and practicing a safe Waste Management Plan.

Inoculation

The first line of defense against disease is inoculation. An HBV vaccination can protect workers from the leading occupational health risk currently confronting the medical workplace. Unfortunately, only 36 percent of all healthcare workers participate in a vaccine program. The rest are at high risk of infection.

Universal Precautions

The most effective method of protecting yourself is the implementation of Universal Precautions. This requires that employers and employees treat all blood and potentially infectious waste as if infected.

- Never eat, drink, smoke, apply cosmetics or handle contact lenses in areas of potential infection.
- Always wash your hands immediately after possible exposure, even if you are wearing gloves.
- Immediately remove any protective clothing when leaving an area or finishing a task.
- Dispose of sharps properly.
- Never bend, shear, recap or resheath by hand.
- Use a broom and dustpan to pick up broken glass.

Protective Clothing

Protective clothing is another important line of defense against infectious waste. Every healthcare worker and all medical research personnel must follow the safety guidelines established for the use of protective clothing and equipment on the job. Whether you are an administrator, surgeon or on the housekeeping staff, be cautious.

Use every method available to protect yourself from hazardous medical waste. Your employer will provide you with the proper equipment and training for the safe use of personal protective equipment.

Protective clothing, such as gloves and fluid resistant gowns, are recommended for laundry and housekeeping staff handling spills and contaminated laundry. Workers should be aware that needles and other contaminated sharps could accidentally be left in bedding and general waste. *Report any puncture accidents immediately.*

Treating Infectious Waste

There are various ways to treat infectious waste:

- Steam sterilization
- Incineration
- Thermal inactivation
- Gas/vapor sterilization
- Irradiation sterilization
- Chemical disinfectant

Steam Sterilization

Steam sterilization and incineration are the common and recommended treatments for most infectious waste including:

- Blood cultures
- Isolation wastes
- Pathological waste
- Body parts
- Sharps
- Dialysis unit waste

Steam sterilization saturates waste with high temperature steam, generally in an autoclave, to destroy germs.

Incineration

Incineration heats and dries waste at temperatures above 1500⁰F, reducing it to ash. The ash then must be tested and hauled to a disposal facility.

Many large facilities operate their own two-chamber incinerators to reduce the volume and cost of medical waste.

Other Methods

Thermal inactivation, gas/vapor sterilization, irradiation sterilization and chemical disinfectant sterilization are less common and generally require highly specialized training and equipment.

Infectious waste slated for transport or stored due to system failure must:

- Be kept in a refrigerated unit between 35⁰F and 45⁰F
- Never be stored for more than seven days unless frozen within 72 hours of generation
- Never, under any circumstances, be stored more than 30 days

SUMMARY

The awareness and concern about medical waste has increased dramatically over the past few years. As a healthcare worker, you need to be aware of the danger and must follow the procedures for safely handling infectious medical waste. Help protect yourself and your co-workers by using these standards and safety procedures every day on the job.