

BASICS

Overview

- \$ Every veterinary facility should have a comprehensive waste management program, not only because it will save the business large amounts of money, but because it will help our country deal with the ever-enlarging waste problem.
- \$ Each year, the United States generates approximately 200 million tons of trash, which is about 4.3 pounds per person, per day. Less than one fourth of our waste is recycled; the rest is burned or buried. Studies, meanwhile, show that over 70% of landfill waste could have been reused or recycled.
- \$ The first step to deal with waste management is to separate wastes into two types: regular and regulated medical waste (RMW).
- \$ Regular, or general, waste is the type of waste that is commonly produced and doesn't represent a serious or immediate health hazard. It is often composed of food waste, trash, and recyclables (corrugated cardboard, office paper, newspaper/periodical, metal, glass, and plastic).
- \$ Regulated medical, or hazardous, waste is material that poses an immediate and latent danger to human beings and other life forms. It is composed of biomedical waste, infectious waste, radioactive waste, laboratory chemical waste, electronic equipment (as waste), sharps, and animal waste or tissues (if infected with a disease contagious to human beings).
- \$ The key to waste management is waste minimization.
- \$ Presently, there are three methods of disposing of waste: burying, incineration, and sterilization. Burying is problematic, as landfills are filling up and causing other problems, such as groundwater contamination. Incineration works, but it may release toxins into the air, and it creates ash that requires disposal in special hazardous waste landfills. On the plus side, it does reduce the volume of garbage by 70-90%, and can generate energy. Sterilization is expensive and doesn't eliminate the volume issue. It does, however, help with contagious waste.
- \$ As all possible methods of waste disposal are unattractive, it is best to make a concerted effort to reduce the amount and toxicity of the waste your facility is producing. Not only is doing so good for the environment, it will save money.
- \$ After reducing and reusing, consider recycling more of your waste material, especially plastic, aluminum, glass, and paper.

Terms Defined

- \$ Biodegradable. Material that can be broken down into simple compounds, such as carbon dioxide and water, by living things under the right environmental conditions.
- \$ Corrosive. Material capable of corroding metal containers like tanks, drums and barrels.

- Examples include industrial cleaning agents, and oven or drain cleaners.
- \$ General Waste. Waste not considered capable of transmitting disease or causing injury.
- \$ Hazardous Waste. Byproducts of society that can pose a substantial or potential hazard to human health or the environment when improperly managed. Possesses at least one of four characteristics (ignitability, corrosivity, reactivity, or toxicity) or appears on EPA lists. It requires special handling for detoxification or safe disposal.
- \$ Ignitable. Material that catches fire easily. Examples include gasoline, paints, and solvents.
- \$ Recycling. The act of segregating discarded material based on their reusable characteristics in order to process new products.
- \$ Reactive. Materials unstable enough to explode or release toxic fumes. Examples include acids, bases, ammonia, and chlorine bleach.
- \$ Regulated Medical Waste (RMW). Waste that, by law, requires special treatment or handling. Examples include biohazardous waste, infectious waste, and potentially infectious waste: sharps, blood, blood products, laboratory wastes, pathological wastes, isolation wastes, and animal carcasses.
- \$ Reuse. The act of utilizing non-disposable supplies to reduce waste quantities.
- \$ Sustainability. The intelligent use of resources, both natural and technological, to meet our communities' needs for both today and the future.
- \$ Toxic. Material that contains one or more of thirty-nine carcinogenic, mutagenic, or teratogenic compounds at levels that exceed established limits. Examples include many solvents, pesticides, and paint strippers.
- \$ Waste Minimization. The act of decreasing the toxicity or quantity of discarded products.

OPTIONS AND ISSUES

- \$ Each facility needs to have a comprehensive waste management program.
- \$ All waste can be separated into general waste and RMW.

General Waste

- \$ General waste removal is not regulated, and can be removed publically or privately.
- \$ Public removal of general waste is only possible if the facility is located in a town or city that supplies this service.
- \$ Private removal requires personal arrangements: most areas have many different companies that will take care of general waste.
- \$ The majority of facilities keep their garbage in a large trash container outside of the building, which are usually supplied by the company that handles waste removal. Some small facilities may keep garbage inside.
- \$ The frequency of public trash removal depends on the city, but it will often occur on some set schedule. This can vary from daily to weekly.
- \$ Frequency of trash removal will also depend on the facility's location, as practices outside of towns will have less frequent pick-ups, as well as the quantity of garbage produced and how available pick-up is for that community.
- \$ Expense of private service will depend upon the frequency of pick-ups, the size of the trash container supplied, and the competition between local companies for business. It is

- always prudent to compare prices on a regular basis.
- \$ To decrease the costs of general waste removal, reuse and recycle as many materials as possible. This is helpful because recyclable materials are often picked up at no charge, and the only necessary supplies are extra large bins, which are often free when used for recycling.
 - \$ It is easy for a facility to delegate the responsibility of sorting general trash into different recyclable categories: plastics, aluminum, glass, and paper.
 - \$ Plastics: In the US, we recycle only 5% of all plastics, 45% of which is the type of plastic used to make soda bottles. So pay attention to which plastics are recyclable. Note: although some plastics may look alike, they can be made of different ingredients and must be carefully separated according to their recycling number (which can be found inside the recycling symbol).
 - \$ Aluminum: while we recycle over half of our aluminum, that still leaves a large amount that turns into landfill. Making a new aluminum can out of an old one is quick: new cans are back on the store shelves in as little as six weeks. Recycling saves much of the energy used to make the can from bauxite ore and prevents nearly all of the industrial waste and pollution caused by mining.
 - \$ Glass: only 20% of glass is recycled, despite the fact that reusing glass uses less energy than creating new glass.
 - \$ Paper: about 38% of paper is recycled. Not only should we recycle more, it is easy to make a point of purchasing recycled paper. Paper fibers can be recycled several times before they are too weak, and this process saves much of the time, energy, and resources consumed during the original paper-making process.
 - \$ When possible, reusing is preferable to recycling, because the item does not need to be reprocessed before it can be used.
 - \$ Reuse materials by repairing broken items, donating outdated or unnecessary ones to charities or community groups, and using products more than once, either for the same or different purpose. A common, easy reusing tactic is to utilize the back of old computer printouts as notepaper; then, after the notes are obsolete, recycle it!

Regulated Medical Waste

- \$ For complete definitions of hazardous characteristics of waste, see the EPA regulation 40 CFR 261.
- \$ As removal of RMW is much more expensive, it is advantageous to minimize the quantity of hazardous waste produced by a facility. Costs vary depending on geographic location.
- \$ Minimize the quantity of RMW by being sure to separate wastes correctly. Often, a large portion of waste being classified as RMW is actually just general waste that someone is too lazy to sort.
- \$ HRS has the overall responsibility for the hazardous waste management program, including waste collection, inspections, and records.
- \$ As the name implies, RMW removal is regulated and has specific rules that apply to the different types of waste.
- \$ Anything that could be considered infectious or contagious to human beings must be treated as RMW and disposed of carefully.

- \$ Without written approval from EHRS, it is prohibited to dispose of laboratory chemical waste via the sanitary sewer system. All lab personnel should be aware of the location of waste containers.
- \$ Due to its high harm potential, radioactive waste has special disposal rules and is the most costly material to have removed. Should a facility handle such material, it is necessary to contact EHRS.
- \$ Electronic equipment, such as computers, often contain heavy metals. Lead is in cathode ray monitors, cadmium is in rechargeable NiCd batteries, and mercury is often present in computers. The best way to rid the facility of these items is to donate them for reuse or recycle their parts.

MISCELLANEOUS

Abbreviations

- \$ EHRS: Office of Environmental Health and Radiation Safety.
- \$ EPA: Environmental Protection Agency.
- \$ EPA Regulation 40 CFR 261: Identification and listing of hazardous waste.
- \$ HRS: Hazard Ranking System, used by the EPA to prioritize waste.
- \$ RMW: Regulated Medical Waste.

Recommended Reading

- \$ Murphey, P. The Garbage Primer. Lyon Press, 1993.
- \$ OSHA Homepage. 2004. Available at www.osha.gov. Accessed June 20, 2004.
- \$ Strong, DL. Recycling in America: A Reference Handbook. Santa Barbara: ABC-CLIO, 1992.
- \$ US Department of Energy: Office of Waste Management. 2004. <http://www.em.do.gov/em30>. Accessed June 18, 2004. Information and fact sheets on waste treatment, storage, and disposal.
- \$ US EPA Homepage. 2004. Available at www.epa.gov. Accessed June 17, 2004.

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