

Overview

Many pharmaceutical drugs and chemicals utilized in clinics are considered hazardous, and their disposal is regulated by the U.S. Environmental Protection Agency (EPA). The EPA's disposal requirements are more stringent than the standard "clear bag" (e.g., trash) or regulated medical waste "red bag" and sharps container options.

In general, drugs and chemical wastes from clinical areas must be collected and disposed of via Environmental Health and Safety (EHS) unless identified by EHS as non-hazardous and safe for alternative disposal. EHS provides chemical disposal at no charge to the clinic. Improperly disposed of drug and chemical wastes can result in penalties and fines from the EPA and may pollute the environment.

This EHS Update describes the most appropriate method of disposal for the different categories and types of drug and chemical wastes generated by Weill Cornell Medicine (WCM) clinics.

Applicability

This update applies to all WCM physicians, clinical staff, medical students, and technicians who administer pharmaceutical drugs and chemicals; and manage the associated wastes.

This update **does not** apply to pharmaceutical chemical wastes generated in New York-Presbyterian Hospital (NYP). NYP clinical areas must manage wastes as established in the NYP Safety Manual. Additionally, this update **does not** apply to [chemotherapeutic wastes](#) or [DEA-controlled substances](#), and there are separate updates available for these wastes.

Responsibilities

- **Physicians, Clinical Staff, Medical Students, and Technicians** who administer, dispose, or otherwise manage pharmaceutical drugs and chemicals must ensure that all associated wastes are managed and disposed of as required by this update.
- **EHS** acts as a resource to WCM personnel, providing technical assistance and training to clinical areas on pharmaceutical drug and chemical waste management. Upon request, EHS reviews specific clinical chemical wastes to identify appropriate disposal methods or approve alternative disposal methods. EHS also coordinates the collection and disposal of chemical wastes, as defined in this update.

Definitions

Acutely toxic chemicals are chemicals that the EPA has determined to be acutely toxic, and even empty containers must be disposed of as hazardous waste via EHS.

Examples of acutely toxic chemicals found in clinics are below; a [full list](#) is available on the EHS website.

- Arsenic trioxide (Trisenox)
- Phenteramine
- Epinephrine medications (excluding epinephrine hydrochloride):
 - Adrenalin; EpiPen; Eppy/N; Epifrin; Epinal; Anaphylaxis kit
 - Epinephrine (inhalants, injectables, kits)
 - Racepinephrine
 - Racord
 - Primatene aerosol inhaler
- Nicotine and nicotine salts (Nicotine patches; Habitrol; Nicoderm; Nicorette; Nicotrol; Tetrahyronicotyrine)
- Physostigmine salicylate (Antilirium)
- Warfarin and salts, >0.3% (Coumadin)
- Nitroglycerine

Clear bag wastes are regular trash materials such as standard refuse, non-contaminated gloves and gowns, empty chemical containers (excluding empty acutely toxic chemical containers), etc. which are destined for disposal in a landfill as untreated wastes.





Clinical drug and chemical wastes are chemicals or pharmaceutical drugs utilized in clinical areas that are hazardous and require more stringent disposal via EHS. Unless identified as a non-hazardous chemical by EHS, chemicals and pharmaceutical drugs are presumed to be hazardous, and must be managed in compliance with this Update and disposed of via EHS. Pharmaceutical drugs may not be disposed of down the drain or flushed down a toilet. Separate disposal procedures for [chemotherapeutic wastes](#) or [DEA-controlled substances](#) are available on the EHS website.

Non-hazardous chemical wastes are chemicals identified by EHS to be non-hazardous and acceptable for disposal via clear bag wastes, red bag wastes, sharps waste, or drain disposal. Disposal method will depend on the nature of the waste (e.g., syringes, needles, gloves, vials) and other potential contaminants (e.g., human blood, body fluids).

Red bag wastes are non-sharps regulated medical wastes (e.g., blood-contaminated gloves, pads, gowns) collected into red bags that are destined for disposal via autoclaving then sent to the landfill without treatment or destruction of chemical wastes.

Sharps wastes are sharps regulated medical wastes collected into sharps containers that are destined for disposal via autoclaving then sent to the landfill without treatment or destruction of chemical wastes.

Drug Enforcement Administration (DEA) controlled substances are certain chemicals used to make drugs that are classified into five (5) distinct categories or schedules, depending upon the drug's acceptable medical use and the drug's abuse or dependency potential. The abuse rate is a determinate factor in the scheduling of the drug; for example, Schedule I drugs have a high potential for abuse and the potential to create severe psychological and/or physical dependence. Disposal of DEA substances is performed through a licensed vendor; EHS must be contacted for disposal for DEA controlled substance. Disposal procedures for [DEA-controlled substances](#) are available on the EHS website.

Procedure

REVERSE DISTRIBUTION

When suitable, expired or unwanted pharmaceutical drugs acquired through either a private distributor or the NYP Pharmacy should be returned via a reverse distribution program. Refer to the reverse distributor's guidelines for specific instructions, and contact EHS for assistance as necessary.

EMPTY CONTAINERS AND VIALS

A container is considered "empty" if it contains less than or equal to 3 percent by weight of its total capacity (i.e., residual amounts). Containers may include bottles, vials, IV bags, etc.

- **Empty acutely toxic chemical containers** must be managed as hazardous chemical waste and collected for disposal via EHS.
- **Other empty chemical containers** are considered non-hazardous chemical wastes. Limited quantities of small vials may be discarded in sharps containers or otherwise managed as "clear bag" wastes (i.e., regular trash). Glass containers must be placed in a cardboard box prior to clear bag disposal to prevent breakage. Containers that have come into contact with blood or other biological wastes must be managed as regulated medical wastes.

NON-HAZARDOUS CHEMICAL WASTES

For the purpose of this update, non-hazardous chemical wastes from clinical areas include:

- Syringes containing only non-hazardous chemicals as identified below or any pharmaceutical drug which has been administered to a patient may be discarded in sharps containers.
- Buffers, saline solutions, and standard IV bags containing non-hazardous chemicals such as sodium chloride, potassium chloride, or glucose solutions to which drugs have not been added. A full listing of non-hazardous chemicals is available in the [EHS Update – Drain and Trash Disposal of Chemicals](#) on EHS website.
 - Small containers (<50ml) may be discarded in a sharps container.
 - Aqueous solutions may be disposed via drain disposal.
 - To request alternate disposal methods, please contact EHS.

