Colorado Department of Public Health and Environment

Disposal of Waste/Outdated Vaccine

This guidance applies to waste vaccines only. Waste vaccines are those that have expired or are considered to be waste. Waste vaccines include:

- Vaccine drawn into a syringe from a multi-dose vial that is not administered within the same day.
- Vaccine remaining in a multi-dose vial that has exceeded the manufacturers recommended storage after the first withdrawal from the vial.
- Vaccine where proper cold chain management was not or may not have been maintained.
- Vaccine that is contaminated or otherwise determined to be unusable.
- Vaccine which has past its expiration date.

Most vaccines may not be returned to the manufacturer or distributor, so the health care provider in possession of the vaccine is responsible for its proper disposal. Vaccines should not be flushed down the toilet, poured down the drain, dispensed into the sink, or put in the regular trash. The FDA has concluded these vaccines are perfectly safe in the small doses used to immunize individuals; larger quantities of some vaccines require special handling related to disposal.

Vaccine Disposal Requirements (adapted from the Minnesota Department of Health)

Waste Item	Type of Waste	Where to Dispose
Empty used syringes with needles	Infectious and non-hazardous	Sharps container
Unused live, attenuated vaccines	Infectious and non-hazardous	Medical waste disposal service
Used or partially used multi-dose vials still containing inactivated vaccine or Unused pre-filled syringes containing certain vaccines by Novartis	Non-infectious and hazardous	Hazardous waste container; containers for syringes with needles should also meet sharps container requirements. Management compliant with hazardous waste requirements. Dispose of through a hazardous waste disposal company.
Used syringes with needles that still contain preserved vaccine (not common)	Infectious and hazardous	Hazardous waste container that also meets sharps container requirements. Management compliant with both hazardous and infectious waste requirements. Dispose of through a hazardous waste disposal company.
Unused preservative-free inactivated vaccines (most commonly single-use vials and some pre-filled syringes)	Non-infectious and non-hazardous	Medical waste disposal service or reverse distributor – do not dispose of in regular trash; remove unused needle from syringe to manage with sharps.
Used cotton balls, gauze, gloves and dried alcohol wipes Empty vials of inactivated vaccines	Non-infectious and non-hazardous	Wrap securely in trash bags for normal trash disposal.

Reporting

Health care providers should ensure that the number of expired and wasted doses of vaccine is reported to the Colorado Immunization Program by completing the wastage reporting form available from that program. For more information regarding the Colorado Immunization Program, contact the Disease Control and Environmental Epidemiology Division at 303-692-2650 or email cdphe.dcdh1n1@state.co.us.

How is Vaccine Disposal Regulated?

Hazardous Waste

Health care providers must evaluate each type of waste vaccine in their possession to determine if it is a hazardous waste before it can be disposed of properly. As must be done with any waste, if a waste vaccine meets the definition of a hazardous waste, the health care provider becomes the generator of the waste and must ensure that this waste is managed and disposed of as hazardous waste by meeting all the requirements of the Colorado Hazardous Waste Regulations (6 CCR 1007-3) appropriate to their generator category. Colorado considers pharmaceuticals returned to a reverse distributor to be a waste and not a commodity. Therefore, the health care provider must also make a hazardous waste determination on all pharmaceuticals that are being returned to a reverse distributor, even if returned for credit.

Waste vaccines are considered to be hazardous wastes if they contain mercury (such as thimerosal) or cresol-based preservatives. These are most commonly found in multi-dose vials, but also occur in some pre-filled syringes. Any multi-dose vial or pre-filled syringe that is not empty[1] and contains vaccine with a mercury or cresol-based preservative must be managed as hazardous waste as explained in the "Evaluating Wastes in the Health Care Setting" compliance bulletin (www.colorado.gov/cs/Satellite/CDPHE-HM/CBON/1251615961696). Unused syringes containing vaccines with mercury or cresol-based preservatives should be segregated from other syringes and managed in a separate container as hazardous waste. Unused needles should be removed from these syringes and disposed of in a properly managed sharps container. For more information about vaccines that contain thimerosal, please visit www.vaccinesafety.edu/thi-table.htm.

Most single-use vaccine vials and single-dose pre-filled syringes (excluding Novartis syringes) are preservative-free vaccines. Preservative-free vaccines are not regulated as hazardous waste when disposed.

Infectious Waste

Health care providers are also required to designate which of their wastes are infectious or potentially infectious so that the waste can be managed and disposed of properly. Immunization activities generate used syringes, needles, vaccine vials, cotton balls, gauze, alcohol wipes, personal protective equipment like gloves, and occasionally unused vaccines.

Used syringes and needles are considered to be infectious wastes and should be disposed of intact in a properly managed sharps container. Unused syringes and vials containing or that previously contained live, attenuated vaccines or preservative-free vaccines must also be disposed of properly. Although these wastes are not technically infectious, best management practice is to dispose of them through a medical waste disposal service to prevent misuse or accidental exposure to solid waste workers and the public. Unused needles should be removed from these syringes and disposed of in a properly managed sharps container.

Non-hazardous and Non-infectious

Disposable items such as used cotton balls, gauze, gloves, and dried alcohol wipes should be wrapped securely in trash bags for disposal in the normal trash. Empty vials that previously contained inactivated vaccine may also be disposed of in the normal trash. Wastes containing free liquids, including vaccines, cannot be disposed of in the regular trash.

For more information regarding waste disposal, contact the Hazardous Materials and Waste Management Division at 303-692-3320 or email comments.hmwmd@state.co.us.

[1] A vial is considered empty when there is 3% or less of the original vaccine remaining and all vaccine that can be removed by normal means (syringe) has been removed. Vials that have been fully administered may still contain extra vaccine. If there is enough leftover vaccine in a vial that more liquid can be removed with a syringe, it must be managed as hazardous waste if the vaccine contains a preservative. A pre-filled syringe is considered empty when the full dose of vaccine has been administered.