

Disposal of Vaccine and Vaccine Administration Equipment in Michigan

This document is to be used only as a guide for disposal of used/expired vaccines, and vaccine administration equipment. When disposal of vials is necessary, follow the guidance of the manufacturer, the FDA and state regulations, and your organization's policies. Alternatively, reach out to your medical waste disposal company regarding the best option for recycling or disposal to avoid burdening the environment.

It is the responsibility of the provider to contact the manufacturer to determine if there are any ingredients in the vaccine to be discarded that may need to be disposed of in a specific manner:

- Nonhazardous/noninfectious
- Both (hazardous and medical/biohazardous)
- Medical/biohazardous waste
- Hazardous waste

Some unused, nonviable, or expired vaccines may be returned to the vaccine manufacturer for credit under the manufacturer's vaccine return policy. Be sure to follow up with the appropriate vaccine manufacturer. If the vaccine is Vaccines for Children (VFC) vaccine, contact your Local Health Department (LHD). If the vaccine is private vaccine, contact the manufacturer for further guidance. Never discard vaccine by "squirting" it down the sink drain.

Preservative-free non-live attenuated vaccines (normal trash).

An empty vial that had contained preservative-free vaccine is non-infectious and not considered medical waste. It is also called solid waste or industrial solid waste and may be disposed of in the normal trash or a medical waste bin, bag, or sharps container. There may be times when disposal of vaccine vials and pre-filled syringes will need to occur even if the vial or syringe is not empty¹. Your medical waste disposal company may be able to take the expired drugs for incineration.

Preservative-free live attenuated vaccines (infectious waste).

Medical/biohazard waste (infectious waste) is any waste that contains infectious material or potentially infectious substances, such as blood, and should be disposed of in a medical waste bin, bag, or sharps container. Needles, blades, glass pipettes, and other waste that can cause injury during handling should be disposed of as medical/biohazard waste (infectious waste). Syringes with a sharp needle are considered medical/biohazard waste (infectious waste) and need to be disposed of in a sharps container. Live attenuated vaccines are also considered medical waste and should be disposed of in a medical waste bin, bag, or sharps container.

Preservative-containing vaccines (hazardous waste).

Any vial that is not empty¹ and contains vaccine with mercury (thimerosal²) or cresol-based preservatives must be managed as hazardous waste. These are most commonly found with multi-dose vials and some pre-filled syringes of vaccine which contain a trace amount of mercury (thimerosal). It must be determined whether the vaccine exceeds the maximum concentration (0.2 mg/L) for the toxicity characteristic for mercury per federal law. Look for 0.01% thimerosal. These vaccines must be disposed of as hazardous waste if the concentration is >0.2mg/L, or as medical (infectious) waste destined for incineration if it is <0.2mg/L.³ Hazardous waste may be disposed of in a hazardous waste container or sharps container only if the medical waste disposal company

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responsible for disposing the container has a license to dispose of hazardous waste, specifically vaccines that contain mercury (thimerosal). Work with your medical waste disposal company to determine all the waste services your facility would need and if they are able to provide them. If they are unable to meet your waste requirements, you must find a company that is licensed to do so.

Waste	Type of Waste	Where to Dispose
<ul style="list-style-type: none"> • Empty inactivated vaccine vials • Empty inactivated vaccine syringes without needles 	Nonhazardous/Noninfectious waste	<ul style="list-style-type: none"> • Normal trash • May be placed in a sharps container and disposed of as medical/biohazard waste
<ul style="list-style-type: none"> • Not empty preservative-free vaccine single-use vials • Not empty preservative-free vaccine pre-filled syringes (with/without needles) 	Nonhazardous/Noninfectious waste	<ul style="list-style-type: none"> • Normal trash • May be placed in a sharps container and disposed of as medical/biohazard waste (needle attached to syringe must be disposed in Sharps container)
<ul style="list-style-type: none"> • Empty syringes with needles 	Medical/Biohazard waste	<ul style="list-style-type: none"> • Sharps container
<ul style="list-style-type: none"> • Live vaccines: <ul style="list-style-type: none"> ○ LAIV (live attenuated influenza vaccine) in nasal sprayer ○ Oral vaccine applicator ○ Vial 	Medical/Biohazard waste	<ul style="list-style-type: none"> • Medical waste bag or bin • Sharps container (needle attached to syringe must be disposed in Sharps container)
<ul style="list-style-type: none"> • Vaccines containing mercury or cresol-based preservative <ul style="list-style-type: none"> ○ Multi-dose vials containing vaccine ○ Pre-filled syringes 	Hazardous waste	<ul style="list-style-type: none"> • Hazardous waste container or sharps container • Must be clearly marked as “Hazardous/Universal Waste-pharmaceuticals/Vaccines” • Company must have license to dispose of hazardous waste

¹A 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) have been removed. Single or multi-dose vials that have been fully administered may still contain extra vaccine, however, just because there is not enough vaccine left for a dose does not mean the vial is empty. The vial needs to be disposed of properly.

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²Vaccines labeled as “preservative-free” may contain trace amounts of thimerosal used during manufacturing but later removed, leaving only a trace amount (≤ 1 microgram of mercury per dose). Vaccines with trace amounts of thimerosal need to be disposed of as hazardous waste.

³[Vaccine Vial Disposal Guidelines \(pharmacytimes.com\)](https://www.pharmacytimes.com)

Resources:

[Thimerosal in Vaccines Questions and Answers | FDA](#)

[Vaccine Vial Disposal Guidelines \(pharmacytimes.com\)](https://www.pharmacytimes.com)

[Vaccine Waste Disposal | Stericycle](#)

[Thimerosal and Vaccines | FDA](#)