



# Vaccine Storage and Handling Toolkit



**U.S. Department of  
Health and Human Services**  
Centers for Disease  
Control and Prevention

# Table of Contents

---

Introduction.....	2
SECTION ONE: Vaccine Cold Chain .....	4
SECTION TWO: Staff and Training.....	6
SECTION THREE: Vaccine Storage and Temperature Monitoring Equipment .....	8
SECTION FOUR: Vaccine Inventory Management.....	16
SECTION FIVE: Vaccine Preparation.....	19
SECTION SIX: Vaccine Transport.....	21
SECTION SEVEN: Emergency Vaccine Storage and Handling.....	25
Glossary.....	27
Resources.....	29

Disclaimer: This document provides best practices and Centers for Disease Control and Prevention (CDC) recommendations on storage, handling, and transport of vaccines and diluents. It also provides information on vaccine storage and handling requirements related to the Vaccines for Children program. Use of trade names and commercial sources in this toolkit is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services (DHHS), the U.S. Public Health Service (PHS), or CDC.

# SECTION FOUR: Vaccine Inventory Management

## Understanding Expiration Dates

Determining when a vaccine or diluent expires is a critical step in maintaining proper storage and handling. Understanding vaccine expiration dates can help save your practice time and money.

When the expiration date has only a month and year, the product may be used up to and including the last day of that month. If a day is included with the month and year, the product may only be used through the end of that day.

In some instances, such as the examples for beyond use date (BUD) below, vaccines must be used before the expiration date on the label.

## Beyond Use Dates

Some vaccines have a beyond use date (BUD), which is calculated based on the date the vial is first entered and the storage information in the package insert.

The BUD replaces the manufacturer's expiration date and should be noted on the label along with the initials of the person making the calculation. Examples of vaccines with BUDs include:

**Reconstituted vaccines** have a limited period for use once the vaccine is mixed with a diluent. This period or BUD is listed in the package insert.

**Multidose vials** might have a specified period for use once they have been entered with a needle. For example, the package insert may state that the vaccine must be discarded 28 days after it is entered. If the vial is entered on 06/01/2019, the BUD is 06/29/2019. The vaccine should not be used after the BUD.

**Manufacturer-shortened expiration dates** may apply when vaccine is exposed to inappropriate storage conditions. The manufacturer might determine the vaccine can still be used, but will expire on an earlier date than the date on the label.

## Vaccine Disposal

General vaccine disposal guidelines for:

- **Expired or compromised vaccine**—sometimes unused vaccine and diluent doses, unopened vials, expired vials, and potentially compromised vaccine may be returned for credit, even if they must be discarded. Contact your [immunization program](#)\* and/or the vaccine manufacturer for vaccine-specific information.
- **Open and broken vials and syringes, manufacturer-filled syringes that have been activated, and vaccine predrawn by providers**—these cannot be returned and should be discarded according to your state requirements.
- **Empty vaccine vials**—most are not considered hazardous or pharmaceutical waste and do not require disposal in a biomedical waste container.\*\* However, check and comply with your state requirements regarding disposal.

Medical waste disposal requirements may vary from state to state because they are set by state environmental agencies. Contact your [immunization program](#)\* or state environmental agency for guidance to ensure your facility's vaccine disposal procedures comply with state and federal regulations.

\*Contact your immunization program for details about specific state or local regulations impacting this activity.

\*\*While vials are not usually considered hazardous or pharmaceutical waste, an empty RV dispensing tube or oral applicator is considered medical waste and should be disposed of in a medical waste container.