

**APPENDIX C**

*Vaccine Storage & Handling*

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# Appendix C

C

# **VACCINE MANAGEMENT**

## **Recommendations for Storage and Handling of Selected Biologicals**

**November 2007**



DEPARTMENT OF HEALTH AND HUMAN SERVICES  
CENTERS FOR DISEASE CONTROL AND PREVENTION



CS113798

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## DT: Diphtheria, Tetanus Toxoids—Pediatric Td: Tetanus, Diphtheria Toxoids—Adult

### Shipping Requirements

Should be shipped in insulated container. Maintain temperature at 35° – 46°F (2° – 8°C). Do not freeze or expose to freezing temperatures.

### Condition upon Arrival

Should not have been frozen or exposed to freezing temperatures. Refrigerate upon arrival.

If you have questions about the condition of the material at the time of delivery, you should 1) immediately place material in recommended storage; and 2) then follow your state health department immunization program policy and contact either the Manufacturer's Quality Control office or the immunization program for guidance.

### Storage Requirements

Refrigerate immediately upon arrival. Store at 35° – 46°F (2° – 8°C). Do not freeze or expose to freezing temperatures.

### Shelf Life

Check expiration date on vial or manufacturer-filled syringe.

### Instructions for Use

Inspect visually for extraneous particulate matter and/or discoloration. If these conditions exist, the vaccine should not be used. Shake vial or manufacturer-filled syringe well before use. Discard vaccine if it cannot be resuspended with thorough agitation.

### Shelf Life after Opening

**Single-Dose Vials:** The vaccine should be administered shortly after withdrawal from the vial.

**Multidose Vials:** Withdraw single dose of vaccine into separate sterile needle and syringe for each immunization. The vaccine should be administered shortly after withdrawal from the vial. Unused portions of

multidose vials may be refrigerated at 35° – 46°F (2° – 8°C) and used until expired, if not contaminated or unless otherwise stated in the manufacturer's product information.

**Manufacturer-Filled Syringes:** The vaccine should be administered shortly after the needle is attached to the syringe.

### Special Instructions

Rotate stock so that the earliest dated material is used first.

**Note:** All vaccine materials should be disposed of using medical waste disposal procedures. Contact the state health department for details.

**DTaP: Diphtheria Toxoid, Tetanus Toxoid,  
Acellular Pertussis Vaccine—Pediatric**

**DTaP/Hib: Diphtheria Toxoid, Tetanus Toxoid,  
Acellular Pertussis Vaccine Combined with *Haemophilus  
influenzae* type b Conjugate Vaccine\*—Pediatric**

**DTaP/HepB/IPV: Diphtheria Toxoid, Tetanus Toxoid,  
Acellular Pertussis Vaccine, Hepatitis B Vaccine,  
Inactivated Polio Vaccine—Pediatric**

**Tdap: Tetanus Toxoid, Diphtheria Toxoid,  
Acellular Pertussis Vaccine—Adult**

### Shipping Requirements

Should be shipped in insulated container. Maintain temperature at 35° – 46°F (2° – 8°C). **Do not freeze or expose to freezing temperatures.**

### Condition upon Arrival

Should not have been frozen or exposed to freezing temperatures. Refrigerate upon arrival.

If you have questions about the condition of the material at the time of delivery, you should 1) immediately place material in recommended storage; and 2) then follow your state health department immunization program policy and contact either the Manufacturer's Quality Control office or the immunization program for guidance.

### Storage Requirements

Refrigerate immediately upon arrival. Store at 35° – 46°F (2° – 8°C). **Do not freeze or expose to freezing temperatures.**

### Shelf Life

Check expiration date on vial, or manufacturer-filled syringe.

### Instructions for Reconstitution\* or Use

Inspect visually for extraneous particulate matter and/or discoloration. If these

conditions exist, the vaccine should not be used. Shake vial or manufacturer-filled syringe well before use. Discard vaccine if it cannot be resuspended with thorough agitation.

### Shelf Life after Reconstitution\* or Opening

**Single-Dose Vials:** The vaccine should be administered shortly after withdrawal from the vial.

**Manufacturer-Filled Syringes:** The vaccine should be administered shortly after the needle is attached to the syringe.

### Special Instructions

Rotate stock so that the earliest dated material is used first.

**Note:** All vaccine materials should be disposed of using medical waste disposal procedures. Contact the state health department for details.

\* DTaP/Hib (TriHIBit®) is ActHIB® (sanofi pasteur) reconstituted with Tripedia® (sanofi pasteur). Once reconstituted, this combination vaccine must be used within 30 minutes or discarded. The only DTaP vaccine that can be used to reconstitute ActHIB® is Tripedia®. No other brand of DTaP is approved for this use.



## Hepatitis Vaccines: Hepatitis A, Hepatitis B, Hepatitis A/B, Hepatitis B/*Haemophilus influenzae* type b

### Shipping Requirements

Should be shipped in insulated container. Maintain temperature at 35° – 46°F (2° – 8°C). **Do not freeze or expose to freezing temperatures.**

### Condition upon Arrival

Should not have been frozen or exposed to freezing temperatures. Refrigerate upon arrival.

If you have questions about the condition of the material at the time of delivery, you should 1) immediately place material in recommended storage; and 2) then follow your state health department immunization program policy and contact either the Manufacturer's Quality Control office or the immunization program for guidance.

### Storage Requirements

Refrigerate immediately upon arrival. Store at 35° – 46°F (2° – 8°C). **Do not freeze or expose to freezing temperatures.**

### Shelf Life

Check expiration date on vial or manufacturer-filled syringe.

### Instructions for Use

Inspect visually for extraneous particulate matter and/or discoloration. If these conditions exist, the vaccine should not be used. Shake vial or manufacturer-filled syringe well before use. Discard vaccine if it cannot be resuspended with thorough agitation.

### Shelf Life after Opening

**Single-Dose Vials:** The vaccine should be administered shortly after withdrawal from the vial.

**Manufacturer-Filled Syringes:** The vaccine should be administered shortly after the needle is attached to the syringe.

### Special Instructions

Rotate stock so that the earliest dated material is used first.

**Note:** All vaccine materials should be disposed of using medical waste disposal procedures. Contact the state health department for details.

## Hib: *Haemophilus influenzae* type b Conjugate Vaccine

### Shipping Requirements

Should be shipped in insulated container. Maintain temperature at 35° – 46°F (2° – 8°C). Do not freeze or expose to freezing temperatures.

### Condition upon Arrival

Should not have been frozen or exposed to freezing temperatures. Refrigerate upon arrival.

If you have questions about the condition of the material at the time of delivery, you should 1) immediately place material in recommended storage; and 2) then follow your state health department immunization program policy and contact either the Manufacturer's Quality Control office or the immunization program for guidance.

### Storage Requirements

**Vaccine:** Refrigerate immediately upon arrival. Store at 35° – 46°F (2° – 8°C). Do not freeze or expose to freezing temperatures.

**Diluent:** May be refrigerated or stored at room temperature (68° – 77°F [20° – 25°C]). Do not freeze or expose to freezing temperatures.

### Shelf Life

Check expiration date on vial.

### Instructions for Reconstitution\* or Use

Inspect visually for extraneous particulate matter and/or discoloration. If these conditions exist, the vaccine should not be used. Shake vial well before use. Discard vaccine if it cannot be resuspended with thorough agitation.

### Shelf Life after Reconstitution\* or Opening

**Single-Dose Vials:** The vaccine should be administered shortly after withdrawal from the vial.

### Special Instructions

Rotate stock so that the earliest dated material is used first.

**Note:** All vaccine materials should be disposed of using medical waste disposal procedures. Contact the state health department for details.

\* ActHIB® (sanofi pasteur) reconstituted with 0.4% sodium chloride diluent should be used within 24 hours after reconstitution. If sanofi pasteur DTaP-Tripedia® is used to reconstitute ActHIB®, the TriHibit® vaccine must be used within 30 minutes of reconstitution. Only sanofi pasteur DTaP-Tripedia® or the diluent shipped with the product may be used to reconstitute the sanofi pasteur ActHIB® product. No other brand of DTaP is licensed for use in reconstitution of ActHIB®.



**HPV: Human Papillomavirus Vaccine****Shipping Requirements**

Should be shipped in insulated container. Maintain temperature at 35° – 46°F (2° – 8°C). **Do not freeze or expose to freezing temperatures.**

**Condition upon Arrival**

Should not have been frozen or exposed to freezing temperatures. Refrigerate upon arrival.

If you have questions about the condition of the material at the time of delivery, you should 1) immediately place material in recommended storage; and 2) then follow your state health department immunization program policy and contact either the Manufacturer's Quality Control office or the immunization program for guidance.

**Storage Requirements**

Refrigerate immediately upon arrival. Store at 35° – 46°F (2° – 8°C). **Do not freeze or expose to freezing temperatures.** Protect from light at all times.

**Shelf Life**

Check expiration date on vial or manufacturer-filled syringe.

**Instructions for Use**

Inspect visually for extraneous particulate matter and/or discoloration. If these conditions exist, the vaccine should not be used. Shake vial or manufacturer-filled syringe well before use. Discard vaccine if it cannot be resuspended with thorough agitation.

**Shelf Life after Opening**

**Single-Dose Vials:** The vaccine should be administered shortly after withdrawal from the vial.

**Manufacturer-Filled Syringes:** The vaccine should be administered shortly after the needle is attached to the syringe.

**Special Instructions**

Rotate stock so that the earliest dated material is used first.

**Note:** All vaccine materials should be disposed of using medical waste disposal procedures. Contact the state health department for details.

## IPV: Inactivated Polio Vaccine

### Shipping Requirements

Should be shipped in insulated container. Maintain temperature at 35° – 46°F (2° – 8°C). **Do not freeze or expose to freezing temperatures.**

### Condition upon Arrival

Should not have been frozen or exposed to freezing temperatures. Refrigerate upon arrival.

If you have questions about the condition of the material at the time of delivery, you should 1) immediately place material in recommended storage; and 2) then follow your state health department immunization program policy and contact either the Manufacturer's Quality Control office or the immunization program for guidance.

### Storage Requirements

Refrigerate immediately upon arrival. Store at 35° – 46°F (2° – 8°C). **Do not freeze or expose to freezing temperatures.**

### Shelf Life

Check expiration date on vial or manufacturer-filled syringe.

### Instructions for Use

Inspect visually for extraneous particulate matter and/or discoloration. If these conditions exist, the vaccine should not be used. Shake vial or manufacturer-filled syringe well before use. Discard vaccine if it cannot be resuspended with thorough agitation.

### Shelf Life after Opening

**Multidose Vials:** Withdraw single dose of vaccine into separate sterile needle and syringe for each immunization. The vaccine should be administered shortly after withdrawal from the vial. Unused portions of multidose vials may be refrigerated at 35° – 46°F (2° – 8°C) and used until expired, if not contaminated or unless

otherwise stated in the manufacturer's product information.

**Manufacturer-Filled Syringes:** The vaccine should be administered shortly after the needle is attached to the syringe.

### Special Instructions

Rotate stock so that the earliest dated material is used first.

**Note:** All vaccine materials should be disposed of using medical waste disposal procedures. Contact the state health department for details.

**TIV: Trivalent Inactivated Influenza Vaccine****Shipping Requirements**

Should be shipped in insulated container. Maintain temperature at 35° – 46°F (2° – 8°C). **Do not freeze or expose to freezing temperatures.**

**Condition upon Arrival**

Should not have been frozen or exposed to freezing temperatures. Refrigerate upon arrival.

If you have questions about the condition of the material at the time of delivery, you should 1) immediately place material in recommended storage; and 2) then follow your state health department immunization program policy and contact either the Manufacturer's Quality Control office or the immunization program for guidance.

**Storage Requirements**

Refrigerate immediately upon arrival. Store at 35° – 46°F (2° – 8°C). **Do not freeze or expose to freezing temperatures.** Protect Fluarix® and FluLaval™ from light at all times by storing in original package.

**Shelf Life**

Formulated for use during current influenza season. Check expiration date on vial or manufacturer-filled syringe.

**Instructions for Use**

Inspect visually for extraneous particulate matter and/or discoloration. If these conditions exist, the vaccine should not be used. Shake vial or manufacturer-filled syringe well before use. Discard vaccine if it cannot be resuspended with thorough agitation.

**Shelf Life after Opening**

**Single-Dose Vials:** The vaccine should be administered shortly after withdrawal from the vial.

**Multidose Vials:** Withdraw single dose of vaccine into separate sterile needle and syringe for each immunization. The vaccine should be administered shortly after

withdrawal from the vial. Unused portions of multidose vials may be refrigerated at 35° – 46°F (2° – 8°C) and used until expired, if not contaminated or unless otherwise stated in the manufacturer's product information.

**Manufacturer-Filled Syringes:** The vaccine should be administered shortly after the needle is attached to the syringe.

**Special Instructions**

Rotate stock so that the earliest dated material is used first.

**Note:** All vaccine materials should be disposed of using medical waste disposal procedures. Contact the state health department for details.

## LAIV: Live Attenuated Influenza Vaccine

### Shipping Requirements

Initially shipped to authorized distributors in the frozen state 5°F (-15°C). Shipped from the distributor to healthcare facilities in the refrigerated state at 35° – 46°F (2° – 8°C).

### Condition upon Arrival

Refrigerate upon arrival.

If you have questions about the condition of the material at the time of delivery, you should 1) immediately place material in recommended storage; and 2) then follow your state health department immunization program policy and contact either the Manufacturer's Quality Control office or the immunization program for guidance.

### Storage Requirements

Refrigerate immediately upon arrival. Store at 35° – 46°F (2° – 8°C). **Do not freeze or expose to freezing temperatures.** (If LAIV is inadvertently frozen, the vaccine should be moved immediately to the refrigerator and may be used until the expiration date printed on the package.)

### Shelf Life

Formulated for use during current influenza season. Check expiration date on package.

### Instructions for Use

LAIV is a colorless to pale yellow liquid and is clear to slightly cloudy; some particulates may be present but do not affect the use of the product. After removal of the sprayer from the refrigerator, remove the rubber tip protector. Follow manufacturer's instructions to deliver ½ dose into one nostril. Then remove the dose-divider clip and deliver the remainder of the dose into the other nostril.

### Shelf Life after Opening

**Single-Dose Sprayer:** The vaccine should be administered shortly after removal from the refrigerator.

### Special Instructions

Rotate stock so that the earliest dated material is used first.

**Note:** All vaccine materials should be disposed of using medical waste disposal procedures. Contact the state health department for details.



## MMR: Measles/Mumps/Rubella Vaccine, MR: Measles/Rubella Vaccine, Measles Virus Vaccine, Mumps Virus Vaccine, Rubella Virus Vaccine

### Shipping Requirements

**Vaccine:** Should be shipped in insulated container. Must be shipped with refrigerant. Maintain temperature at 50°F (10°C) or less. If shipped with dry ice, diluent must be shipped separately.

**Diluent:** May be shipped with vaccine, but do not place in container with dry ice.

### Condition upon Arrival

Maintain at 50°F (10° C) or less. **Do not use warm vaccine.** Refrigerate upon arrival.

If you have questions about the condition of the material at the time of delivery, you should 1) immediately place material in recommended storage; and 2) then follow your state health department immunization program policy and contact either the Manufacturer's Quality Control office or the immunization program for guidance.

### Storage Requirements

**Vaccine:** Refrigerate immediately upon arrival. Store at 35° – 46°F (2° – 8°C). Protect from light at all times, since such exposure may inactivate the vaccine viruses.

**Diluent:** May be refrigerated or stored at room temperature (68° – 77°F [20° – 25°C]). **Do not freeze or expose to freezing temperatures.**

**Note:** MMR vaccine may be stored in the refrigerator or freezer.

### Shelf Life

Check expiration date on vial.

### Instructions for Reconstitution and Use

Reconstitute just before use according to the manufacturer's instructions. Use only the diluent supplied to reconstitute the vaccine.

### Shelf Life after Reconstitution, Thawing or Opening

**Single-Dose Vials:** After reconstitution, use immediately or store at 35° – 46°F (2° – 8°C) and protect from light. **Discard if not used within 8 hours of reconstitution.**

**Multidose vials:** Withdraw single dose of reconstituted vaccine into separate sterile needle and syringe for each immunization. The vaccine dose should be administered shortly after withdrawal from vial. Unused portions of multidose vials may be refrigerated at 35° – 46°F (2° – 8°C), but must be discarded if not used within 8 hours after reconstitution.

### Special Instructions

Rotate stock so that the earliest dated material is used first.

**Note:** All vaccine materials should be disposed of using medical waste disposal procedures. Contact the state health department for details.

### MMRV: Measles/Mumps/Rubella/Varicella Vaccine

#### Shipping Requirements

**Vaccine:** Should be shipped in insulated container. Must be shipped with dry ice only, at 5°F (-15°C) or colder. Should be delivered within 2 days.

**Diluent:** May be shipped with vaccine, but do not place in container with dry ice.

#### Condition upon Arrival

Should be frozen. Vaccine should remain at 5°F (-15°C) or colder until arrival at the healthcare facility. Dry ice should still be present in the shipping container when vaccine is delivered.

If you have questions about the condition of the material at the time of delivery, you should 1) immediately place material in recommended storage; and 2) then follow your state health department immunization program policy and contact either the Manufacturer's Quality Control office or the immunization program for guidance.

#### Storage Requirements

**Vaccine:** Freeze immediately upon arrival. Maintain vaccine in a continuously frozen state at 5°F (-15°C) or colder. **No freeze/thaw cycles are allowed with this vaccine.** Vaccine should only be stored in freezers or refrigerator/freezers with separate external doors and compartments. Acceptable storage may be achieved in standard household freezers purchased in the last 10 years, and standard household refrigerator/freezers with a separate, sealed freezer compartment. "Dormitory-style units" are not appropriate for the storage of MMRV vaccine. **Do not store lyophilized vaccine in the refrigerator. If lyophilized vaccine is inadvertently stored in the refrigerator, it should be used within 72 hours. Lyophilized vaccine stored at 35° – 46°F (2° – 8°C) which is not used within 72 hours should be discarded.**

Protect the vaccine from light at all times since such exposure may inactivate the vaccine viruses.

In order to maintain temperatures of 5°F (-15°C) or colder, it will be necessary in most refrigerator/freezer models to adjust the temperature dial down to the coldest setting. This may result in the refrigerator compartment temperature being lowered as well. Careful monitoring of the refrigerator temperature will be necessary to avoid freezing killed or inactivated vaccines.

**Diluent:** May be refrigerated or stored at room temperature (68° – 77°F [20° – 25°C]). **Do not freeze or expose to freezing temperatures.**

#### Shelf Life

Check expiration date on vial.

#### Instructions for Reconstitution and Use

Reconstitute just before use according to the manufacturer's instructions. Use only the diluent supplied to reconstitute the vaccine.

#### Shelf Life after Reconstitution, Thawing or Opening

**Single-Dose Vials:** Discard reconstituted vaccine if it is not used **within 30 minutes** of reconstitution. **Do not freeze reconstituted vaccine.**

#### Special Instructions

Rotate stock so that the earliest dated material is used first.

If this vaccine is stored at a temperature warmer than 5°F (-15°C), it will result in a loss of potency and a reduced shelf life. If a power outage or some other situation occurs that results in the vaccine storage temperature rising above the recommended temperature, the healthcare provider should contact Merck, the vaccine manufacturer, at 1-800-MERCK-90 for an evaluation of the product potency before using the vaccine.

**Note:** All vaccine materials should be disposed of using medical waste disposal procedures. Contact the state health department for details.



**MCV: Meningococcal Conjugate Vaccine****Shipping Requirements**

Should be shipped in insulated container. Maintain temperature at 35° – 46°F (2° – 8°C). **Do not freeze or expose to freezing temperatures.**

**Condition upon Arrival**

Should not have been frozen or exposed to freezing temperatures. Refrigerate upon arrival.

If you have questions about the condition of the material at the time of delivery, you should 1) immediately place material in recommended storage; and 2) then follow your state health department immunization program policy and contact either the Manufacturer's Quality Control office or the immunization program for guidance.

**Storage Requirements**

Refrigerate immediately upon arrival. Store at 35° – 46°F (2° – 8°C). **Do not freeze or expose to freezing temperatures.**

**Shelf Life**

Check expiration date on vial or manufacturer-filled syringe.

**Instructions for Use**

Inspect visually for extraneous particulate matter and/or discoloration. If these conditions exist, the vaccine should not be used. Shake vial or manufacturer-filled syringe well before use. Discard vaccine if it cannot be resuspended with thorough agitation.

**Shelf Life after Opening**

**Single-Dose Vials:** The vaccine should be administered shortly after withdrawal from the vial.

**Manufacturer-Filled Syringes:** The vaccine should be administered shortly after the needle is attached to the syringe.

**Special Instructions**

Rotate stock so that the earliest dated material is used first.

**Note:** All vaccine materials should be disposed of using medical waste disposal procedures. Contact the state health department for details.

## MPSV: Meningococcal Polysaccharide Vaccine

### Shipping Requirements

Should be shipped in insulated container. Maintain temperature at 35° – 46°F (2° – 8°C). **Do not freeze or expose to freezing temperatures.**

### Condition upon Arrival

Should not have been frozen or exposed to freezing temperatures. Refrigerate upon arrival.

If you have questions about the condition of the material at the time of delivery, you should 1) immediately place material in recommended storage; and 2) then follow your state health department immunization program policy and contact either the Manufacturer's Quality Control office or the immunization program for guidance.

### Storage Requirements

**Vaccine:** Refrigerate immediately upon arrival. Store at 35° – 46°F (2° – 8°C). **Do not freeze or expose to freezing temperatures.**

**Diluent:** May be refrigerated or stored at room temperature (68° – 77°F [20° – 25°C]). **Do not freeze or expose to freezing temperatures.**

### Shelf Life

Check expiration date on vial.

### Instructions for Reconstitution and Use

Reconstitute just before using according to the manufacturer's instructions. Use only the diluent supplied to reconstitute the vaccine.

### Shelf Life after Reconstitution or Opening

**Single-Dose Vials:** Use within 30 minutes of reconstitution.

**Multidose Vials:** Unused portions of multidose vials may be refrigerated at 35° – 46°F (2° – 8°C) and used up to 35 days after reconstitution.

### Special Instructions

Rotate stock so that the earliest dated material is used first.

**Note:** All vaccine materials should be disposed of using medical waste disposal procedures. Contact the state health department for details.

**PCV: Pneumococcal Conjugate Vaccine****Shipping Requirements**

Should be shipped in insulated container. Maintain temperature at 35° – 46°F (2° – 8°C). **Do not freeze or expose to freezing temperatures.**

**Condition upon Arrival**

Should not have been frozen or exposed to freezing temperatures. Refrigerate upon arrival.

If you have questions about the condition of the material at the time of delivery, you should 1) immediately place material in recommended storage; and 2) then follow your state health department immunization program policy and contact either the Manufacturer's Quality Control office or the immunization program for guidance.

**Storage Requirements**

Refrigerate immediately upon arrival. Store at 35° – 46°F (2° – 8°C). **Do not freeze or expose to freezing temperatures.**

**Shelf Life**

Check expiration date on vial or manufacturer-filled syringe.

**Instructions for Use**

Inspect visually for extraneous particulate matter and/or discoloration. If these conditions exist, the vaccine should not be used. Shake vial or manufacturer-filled syringe well before use. Discard vaccine if it cannot be resuspended with thorough agitation.

**Shelf Life after Opening**

**Single-Dose Vials:** The vaccine should be administered shortly after withdrawal from the vial.

**Manufacturer-Filled Syringes:** The vaccine should be administered shortly after the needle is attached to the syringe.

**Special Instructions**

Rotate stock so that the earliest dated material is used first.

**Note:** All vaccine materials should be disposed of using medical waste disposal procedures. Contact the state health department for details.

## PPV: Pneumococcal Polysaccharide Vaccine

### Shipping Requirements

Should be shipped in insulated container. Maintain temperature at 35° – 46°F (2° – 8°C). **Do not freeze or expose to freezing temperatures.**

### Condition upon Arrival

Should not have been frozen or exposed to freezing temperatures. Refrigerate upon arrival.

If you have questions about the condition of the material at the time of delivery, you should 1) immediately place material in recommended storage; and 2) then follow your state health department immunization program policy and contact either the Manufacturer's Quality Control office or the immunization program for guidance.

### Storage Requirements

Refrigerate immediately upon arrival. Store at 35° – 46°F (2° – 8°C). **Do not freeze or expose to freezing temperatures.**

### Shelf Life

Check expiration date on vial.

### Instructions for Use

Inspect visually for extraneous particulate matter and/or discoloration. If these conditions exist, the vaccine should not be used. Shake vial or manufacturer-filled syringe well before use. Discard vaccine if it cannot be resuspended with thorough agitation.

### Shelf Life after Opening

**Single-Dose Vials:** The vaccine should be administered shortly after withdrawal from the vial.

**Multidose Vials:** Withdraw single dose of vaccine into separate sterile needle and syringe for each immunization. The vaccine should be administered shortly after withdrawal from the vial. Unused portions of multidose vials may be refrigerated at 35° – 46°F (2° – 8°C) and used until

expired, if not contaminated or unless otherwise stated in the manufacturer's product information.

### Special Instructions

Rotate stock so that the earliest dated material is used first.

**Note:** All vaccine materials should be disposed of using medical waste disposal procedures. Contact the state health department for details.



## Rotavirus Vaccine

### Shipping Requirements

Should be shipped in insulated container. Maintain temperature at 35° – 46°F (2° – 8°C). **Do not freeze or expose to freezing temperatures.**

### Condition upon Arrival

Should not have been frozen or exposed to freezing temperatures. Refrigerate upon arrival.

If you have questions about the condition of the material at the time of delivery, you should 1) immediately place material in recommended storage; and 2) then follow your state health department immunization program policy and contact either the Manufacturer's Quality Control office or the immunization program for guidance.

### Storage Requirements

Refrigerate immediately upon arrival. Store at 35° – 46°F (2° – 8°C). **Do not freeze or expose to freezing temperatures.** Protect from light at all times, since such exposure may inactivate the vaccine viruses.

### Shelf Life

Check expiration date on package.

### Instructions for Use

Each dose is supplied in a container consisting of a squeezable plastic, latex-free dosing tube with a twist-off cap, allowing for direct oral administration. The dosing tube is contained in a pouch. Remove the dosing tube from the pouch, screw the cap clockwise to puncture the tube, and screw the cap off counter-clockwise so that the liquid can be squeezed from the tube during oral administration of the vaccine.

### Shelf Life after Opening

**Pouched Single-Dose Tubes:** The vaccine should be administered shortly after withdrawal from the refrigerator. The dosing tube should not be returned to the refrigerator once the screw cap has been removed.

### Special Instructions

Rotate stock so that the earliest dated material is used first.

**Note:** All vaccine materials should be disposed of using medical waste disposal procedures. Contact the state health department for details.

### Varicella (Chickenpox) Vaccine

#### Shipping Requirements

**Vaccine:** Should be shipped in insulated container. Must be shipped with dry ice only, at 5°F (-15°C) or colder. Should be delivered within 2 days.

**Diluent:** May be shipped with vaccine, but do not place in container with dry ice.

#### Condition upon Arrival

Should be frozen. Vaccine should remain at 5°F (-15°C) or colder until arrival at the healthcare facility. Dry ice should still be present in the shipping container when vaccine is delivered.

If you have questions about the condition of the material at the time of delivery, you should 1) immediately place material in recommended storage; and 2) then follow your state health department immunization program policy and contact either the Manufacturer's Quality Control office or the immunization program for guidance.

#### Storage Requirements

**Vaccine:** Freeze immediately upon arrival. Maintain vaccine in a continuously frozen state at 5°F (-15°C) or colder. **No freeze/thaw cycles are allowed with this vaccine.** Vaccine should only be stored in freezers or refrigerator/freezers with separate external doors and compartments. Acceptable storage may be achieved in standard household freezers purchased in the last 10 years, and standard household refrigerator/freezers with a separate, sealed freezer compartment. "Dormitory-style units" are not appropriate for the storage of varicella vaccine. **Do not store lyophilized vaccine in the refrigerator. If lyophilized vaccine is inadvertently stored in the refrigerator, it should be used within 72 hours. Lyophilized vaccine stored at 35° – 46°F (2° – 8°C) which is not used within 72 hours, should be discarded.**

Protect the vaccine from light at all times since such exposure may inactivate the vaccine virus.

In order to maintain temperatures of 5°F (-15°C) or colder, it will be necessary in most refrigerator/freezer models to turn the temperature dial down to the coldest

setting. This may result in the refrigerator compartment temperature being lowered as well. Careful monitoring of the refrigerator temperature will be necessary to avoid freezing killed or inactivated vaccines.

**Diluent:** May be refrigerated or stored at room temperature (68° – 77°F [20° – 25°C]). **Do not freeze or expose to freezing temperatures.**

#### Shelf Life

Check expiration date on vial.

#### Instructions for Reconstitution and Use

Reconstitute just before use according to the manufacturer's instructions. Use only the diluent supplied to reconstitute the vaccine.

#### Shelf Life after Reconstitution, Thawing or Opening

**Single-Dose Vials:** Discard reconstituted vaccine if it is not used **within 30 minutes** of reconstitution. **Do not freeze reconstituted vaccine.**

#### Special Instructions

Rotate stock so that the earliest dated material is used first.

If this vaccine is stored at a temperature warmer than 5°F (-15°C), it will result in a loss of potency and a reduced shelf life. If a power outage or some other situation occurs that results in the vaccine storage temperature rising above the recommended temperature, the healthcare provider should contact Merck, the vaccine manufacturer, at 1-800-9-VARIVAX for an evaluation of the product potency before using the vaccine.

**Note:** All vaccine materials should be disposed of using medical waste disposal procedures. Contact the state health department for details.



## Zoster (Shingles) Vaccine

### Shipping Requirements

**Vaccine:** Should be shipped in insulated container. Must be shipped with dry ice only, at 5°F (-15°C) or colder. Should be delivered within 2 days.

**Diluent:** May be shipped with vaccine, but do not place in container with dry ice.

### Condition upon Arrival

Should be frozen. Vaccine should remain at 5°F (-15°C) or colder until arrival at the healthcare facility. Dry ice should still be present in the shipping container when vaccine is delivered.

If you have questions about the condition of the material at the time of delivery, you should 1) immediately place material in recommended storage; and 2) then follow your state health department immunization program policy and contact either the Manufacturer's Quality Control office or the immunization program for guidance.

### Storage Requirements

**Vaccine:** Freeze immediately upon arrival. Maintain vaccine in a continuously frozen state at 5°F (-15°C) or colder. **No freeze/thaw cycles are allowed with this vaccine.** Vaccine should only be stored in freezers or refrigerator/freezers with separate external doors and compartments. Acceptable storage may be achieved in standard household freezers purchased in the last 10 years, and standard household refrigerator/freezers with a separate, sealed freezer compartment. "Dormitory-style units" are not appropriate for the storage of zoster vaccine. **Do not store lyophilized vaccine in the refrigerator.** Protect the vaccine from light at all times since such exposure may inactivate the vaccine virus.

In order to maintain temperatures of 5°F (-15°C) or colder, it will be necessary in most refrigerator/freezer models to turn the temperature dial down to the coldest setting. This may result in the refrigerator compartment temperature being lowered as well. Careful monitoring of the refrigerator

temperature will be necessary to avoid freezing killed or inactivated vaccines.

**Diluent:** May be refrigerated or stored at room temperature (68° – 77°F [20° – 25°C]). **Do not freeze or expose to freezing temperatures.**

### Shelf Life

Check expiration date on vial.

### Instructions for Reconstitution and Use

Reconstitute just before use according to the manufacturer's instructions. Use only the diluent supplied to reconstitute the vaccine.

### Shelf Life after Reconstitution, Thawing or Opening

**Single-Dose Vials:** Discard reconstituted vaccine if it is not used **within 30 minutes** of reconstitution. **Do not freeze reconstituted vaccine.**

### Special Instructions

Rotate stock so that the earliest dated material is used first.

If this vaccine is stored at a temperature warmer than 5°F (-15°C), it will result in a loss of potency and a reduced shelf life. If a power outage or some other situation occurs that results in the vaccine storage temperature rising above the recommended temperature, the healthcare provider should contact Merck, the vaccine manufacturer, at 1-800-MERCK-90 for an evaluation of the product potency before using the vaccine.

**Note:** All vaccine materials should be disposed of using medical waste disposal procedures. Contact the state health department for details.

VACCINE MANAGEMENT · Recommendations for Storage and Handling of Selected Biologicals

## Manufacturer Quality Control Office Telephone Numbers

Manufacturer/Distributor	Telephone Number	Products
sanofi pasteur <a href="http://www.sanofipasteur.us">www.sanofipasteur.us</a>	800-822-2463	DTaP, DTaP-Hib, DT, Td, Tdap, TT, Hib, Influenza (TIV), IPV, MCV4, MPSV4
Talecris Biotherapeutics <a href="http://www.talecrisusa.com/">www.talecrisusa.com/</a>	800-520-2807	HBIG, IGIM, RIG, TIG
Centers for Disease Control and Prevention Drug Service <a href="http://www.cdc.gov/ncidod/srp/drugs/drug-service.html">www.cdc.gov/ncidod/srp/drugs/drug-service.html</a>	404-639-3670	Distributor for Diphtheria antitoxin
Novartis <a href="http://www.novartis-vaccines.com/products/index.shtml">www.novartis-vaccines.com/products/index.shtml</a>	800-244-7668	Influenza (TIV)
GlaxoSmithKline <a href="http://www.gsk.com/">www.gsk.com/</a>	866-475-8222 (customer support) 888-825-5249 (customer support)	DTaP, DTaP-HepB-IPV, Tdap, HepA, HepB, HepA-HepB, Influenza (TIV)
Massachusetts Biological Labs	617-474-3000 617-983-6400	Td, IGIM, TT
MedImmune, Inc. <a href="http://www.medimmune.com">www.medimmune.com</a>	877-358-6478	Influenza (LAIV)
Merck <a href="http://www.merckvaccines.com">www.merckvaccines.com</a>	800-637-2590	Hib, Hib-HepB, HepA, HepB, HPV, Measles, Mumps, Rubella, MMR, MMRV, PPV23, Rotavirus, Varicella, Zoster
Nabi Biopharmaceuticals <a href="http://www.nabi.com">www.nabi.com</a>	800-635-1766	HBIG
Wyeth <a href="http://www.wyeth.com">www.wyeth.com</a>	800-999-9384	Hib, PCV7

September 2007  
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## Checklist for Safe Vaccine Handling and Storage

Here are the 20 most important things you can do to safeguard your vaccine supply. Are you doing them all? Reviewing this list can help you improve your clinic's vaccine management practices.

- | Yes                      | No                       |   |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | 1. We have a designated person in charge of the handling and storage of our vaccines.   |
| <input type="checkbox"/> | <input type="checkbox"/> | 2. We have a back-up person in charge of the handling and storage of our vaccines.  |
| <input type="checkbox"/> | <input type="checkbox"/> | 3. A vaccine inventory log is maintained that documents: <ul style="list-style-type: none"> <li><input type="checkbox"/> Vaccine name and number of doses received</li> <li><input type="checkbox"/> Date the vaccine was received</li> <li><input type="checkbox"/> Arrival condition of vaccine</li> <li><input type="checkbox"/> Vaccine manufacturer and lot number</li> <li><input type="checkbox"/> Vaccine expiration date</li> </ul>  |
| <input type="checkbox"/> | <input type="checkbox"/> | 4. Our refrigerator for vaccines is either household-style or commercial-style, NOT dormitory-style. The freezer compartment has a separate exterior door.  |
| <input type="checkbox"/> | <input type="checkbox"/> | 5. We do NOT store any food or drink in the refrigerator or freezer.  |
| <input type="checkbox"/> | <input type="checkbox"/> | 6. We store vaccines in the middle of the refrigerator or freezer, and NOT in the door.   |
| <input type="checkbox"/> | <input type="checkbox"/> | 7. We stock and rotate our vaccine supply so that the newest vaccine of each type (with the longest expiration date) is placed behind the vaccine with the shortest expiration date.  |
| <input type="checkbox"/> | <input type="checkbox"/> | 8. We check vaccine expiration dates and we first use those that will expire soonest.   |
| <input type="checkbox"/> | <input type="checkbox"/> | 9. We post a sign on the refrigerator door showing which vaccines should be stored in the refrigerator and which should be stored in the freezer.   |
| <input type="checkbox"/> | <input type="checkbox"/> | 10. We always keep a thermometer in the refrigerator.   |
| <input type="checkbox"/> | <input type="checkbox"/> | 11. The temperature in the refrigerator is maintained at 35–46°F (2–8°C).   |
| <input type="checkbox"/> | <input type="checkbox"/> | 12. We keep extra containers of water in the refrigerator to help maintain cold temperatures.   |
| <input type="checkbox"/> | <input type="checkbox"/> | 13. We always keep a thermometer in the freezer.  |
| <input type="checkbox"/> | <input type="checkbox"/> | 14. The temperature in the freezer is maintained at +5°F (-15°C) or colder.   |
| <input type="checkbox"/> | <input type="checkbox"/> | 15. We keep ice packs and other ice-filled containers in the freezer to help maintain cold temperatures.  |
| <input type="checkbox"/> | <input type="checkbox"/> | 16. We post a temperature log on the refrigerator door on which we record the refrigerator and freezer temperatures twice a day—first thing in the morning and at clinic closing time—and we know whom to call if the temperature goes out of range.  |
| <input type="checkbox"/> | <input type="checkbox"/> | 17. We have a “Do Not Unplug” sign next to the refrigerator’s electrical outlet.  |
| <input type="checkbox"/> | <input type="checkbox"/> | 18. In the event of a refrigerator failure, we take the following steps: <ul style="list-style-type: none"> <li><input type="checkbox"/> We assure that the vaccines are placed in a location with adequate refrigeration.</li> <li><input type="checkbox"/> We mark exposed vaccines and separate them from undamaged vaccines.</li> <li><input type="checkbox"/> We note the refrigerator or freezer temperature and contact the vaccine manufacturer or state health department to determine how to handle the affected vaccines.</li> <li><input type="checkbox"/> We follow the vaccine manufacturer’s or health department’s instructions as to whether the affected vaccines can be used, and, if so, we mark the vials with the revised expiration date provided by the manufacturer or health department.</li> </ul> |
| <input type="checkbox"/> | <input type="checkbox"/> | 19. We have obtained a detailed written policy for general and emergency vaccine management from our local or state health department.  |
| <input type="checkbox"/> | <input type="checkbox"/> | 20. If all above answers are “yes,” we are patting ourselves on the back. If not, we have assigned someone to implement needed changes!   |

Technical content reviewed by the Centers for Disease Control and Prevention, Dec. 2006.

www.immunize.org/catg.d/p3035chk.pdf • Item #P3035 (12/06)

Immunization Action Coalition • 1573 Selby Ave. • St. Paul, MN 55104 • (651) 647-9009 • www.immunize.org • www.vaccineinformation.org

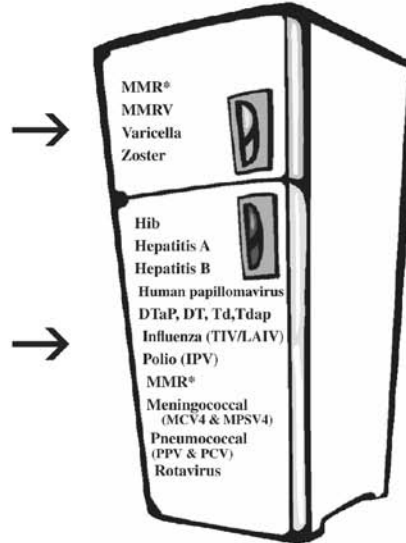


## Vaccine Handling Tips

Outdated or improperly stored vaccines won't protect patients!

Maintain freezer temperature  
at 5°F (-15°C) or colder

Maintain refrigerator temperature  
at 35–46°F (2–8°C)



### Order vaccine carefully.

Inventory your vaccine at least monthly and before placing an order. Expired vaccine must never be used and is money wasted!

### Store vaccine correctly.<sup>†</sup>

Refrigerate or freeze immediately upon receiving shipment. Do not store vaccine in the door of the refrigerator or freezer. Inactivated vaccines should always be placed in the middle of the refrigerator far enough away from the freezer compartment to protect them from freezing.

### Always use the vaccine with the earliest expiration date first.

Move vaccine with the earliest expiration date to the front and mark it to be used first. Keep vials in their boxes. Never use outdated vaccine.

### Stabilize temperatures.

Store ice packs in the freezer and large jugs of water in the refrigerator along with the vaccine. This will help maintain a stable, cold temperature in case of a power failure or if the refrigerator or freezer doors are opened frequently or left open. Frequent opening of the refrigerator unit's doors can lead to temperature variations inside, which could affect vaccine efficacy. For this reason you should not store food or beverages in the refrigerator or freezer.

### Safeguard the electrical supply to the refrigerator.

Make sure the refrigerator is plugged into an outlet in a protected area where it cannot be disconnected accidentally. Label the refrigerator, electrical outlets, fuses, and circuit breakers on the power circuit with information that clearly identifies the perishable nature of vaccines and the immediate steps to be taken in case of interruption of power (use DO NOT UNPLUG stickers). If your building has auxiliary power, use the outlet supplied by that system.

\*MMR may be stored in either the freezer or the refrigerator.

<sup>†</sup>Refer to package insert for specific instructions on the storage of each vaccine. If you have questions about the condition of the vaccine, you should immediately place the vaccine in recommended storage and call the vaccine manufacturer(s) to determine whether the potency of the vaccine(s) has been affected. For other questions, call the immunization program at your state or local health department.

Record your health department's phone number here: \_\_\_\_\_

*Adapted by the Immunization Action Coalition, courtesy of the Minnesota Department of Health*

# **WARNING**

**Do not unplug the refrigerator/  
freezer or break circuit.**

**Expensive vaccine in storage.**



In event of electrical problem, immediately contact:

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**Do not unplug the refrigerator/  
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In event of electrical problem, immediately contact:

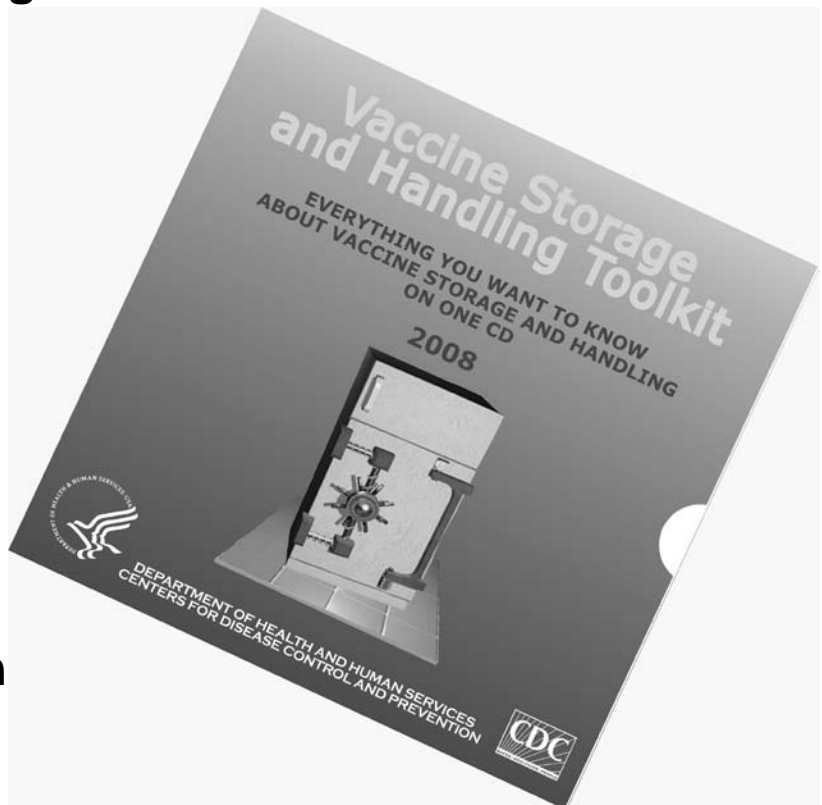
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New from CDC:

# *Vaccine Storage and Handling Toolkit*

Everything you want to know about vaccine storage and handling in one place!

- Storage & handling guidelines
- Two videos
- Interactive game
- Forms
- Posters
- Checklists
- Contact information



**Online** at [www2a.cdc.gov/nip/isd/shtoolkit/splash.html](http://www2a.cdc.gov/nip/isd/shtoolkit/splash.html)

or

Order **CD-ROM** from [www.cdc.gov/vaccines.pubs](http://www.cdc.gov/vaccines.pubs)