To Err is Human, Not to Err is Better

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Disclosures

- Donna Weaver is a federal government employee with no financial interest or conflict with the manufacturer of any product named in this presentation
- Donna will not discuss the off-label use of any vaccines
- Donna will not discuss a vaccine not currently licensed by the FDA

Course Objectives

- **At the end of the course the participants will be able to:**
  - Define vaccine administration error
  - Explain how the rights of medication administration apply to vaccine administration
  - Describe at least 2 common vaccine administration errors
  - Identify at least 2 strategies to prevent vaccine administration errors
  - Explain how to report vaccine administration errors
  - Locate education and training resources for vaccine administration

What is a Vaccine Administration Error?

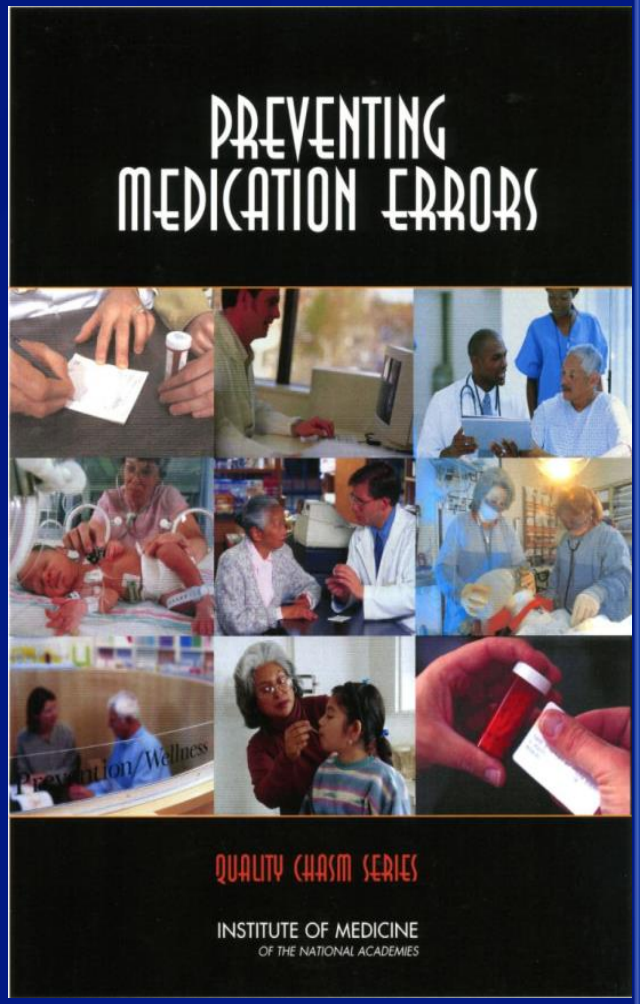
- **Vaccine administration error**
  - Any preventable event that may cause or lead to inappropriate use or patient harm. Such events may be related to professional practice, immunization products (vials, needle, syringes), storage, dispensing, and administration[1]

- **No one wants to make an error**

[1]CDC Immunization Safety Office, VAERS Medication Error Study workgroup. Adapted in part from U.S. Pharmacopeia (USP) medical error definition from http://www.usp.org/sites/default/files/usp_pdf/EN/members/patientSafety.pdf

Institute of Medicine (IOM)

- **IOM recommends implementation of proven medication safety practices including:**
  - Reducing reliance on memory
  - Standardization
  - Protocols and checklists
  - Differentiating among products to eliminate look-alike and sound-alike products
  - Monitoring error frequencies, and correct system problems associated with errors



Preventing Medication Errors IOM 2007, http://www.nap.edu

Institute of Safe Medication Practices (ISMP)

2-Year Summary of National Vaccine Errors Reporting System (VERP)

Table 1. Vaccines frequently cited in error reports based on setting*

Setting (% of All Reports)	Vaccines*	% Within Setting
Physician Office Practice (26%)	Tdap*	16
	DTaP-IPV*	15
	Influenza	15
	Hepatitis A	9
	DTaP-IPV/Hib*	8
Public Health Immunization Clinic (23%)	Hepatitis A	19
	DTaP-IPV*	15
	Influenza	11
	MMRV*	10
	HPV4*	7
Outpatient Medical Clinic (23%)	DTaP-IPV*	19
	Tdap*	15
	Influenza	14
	DTaP*	13
	Hepatitis A	12
Pediatric Outpatient (10%)	Haemophilus b	13
	DTaP-IPV*	12
	Influenza	10
	Hepatitis A	10
	MMRV*	10
Hospital Ambulatory Care (2%)	Influenza	38
	DTaP-HepB-IPV*	10
Hospital Inpatient Care (1%)	Hepatitis B	46
	Tdap*	36
Military Locations (3%)	Anthrax	21
	Influenza	21
	Hepatitis A	17
	RV5 (rotavirus)	13
	Yellow Fever	8
Community Pharmacies (2%)	Influenza	75
	Zoster	20

http://www.ismp.org/newsletters/acutecare/showarticle.aspx?id=95

Institute of Safe Medication Practices (ISMP)

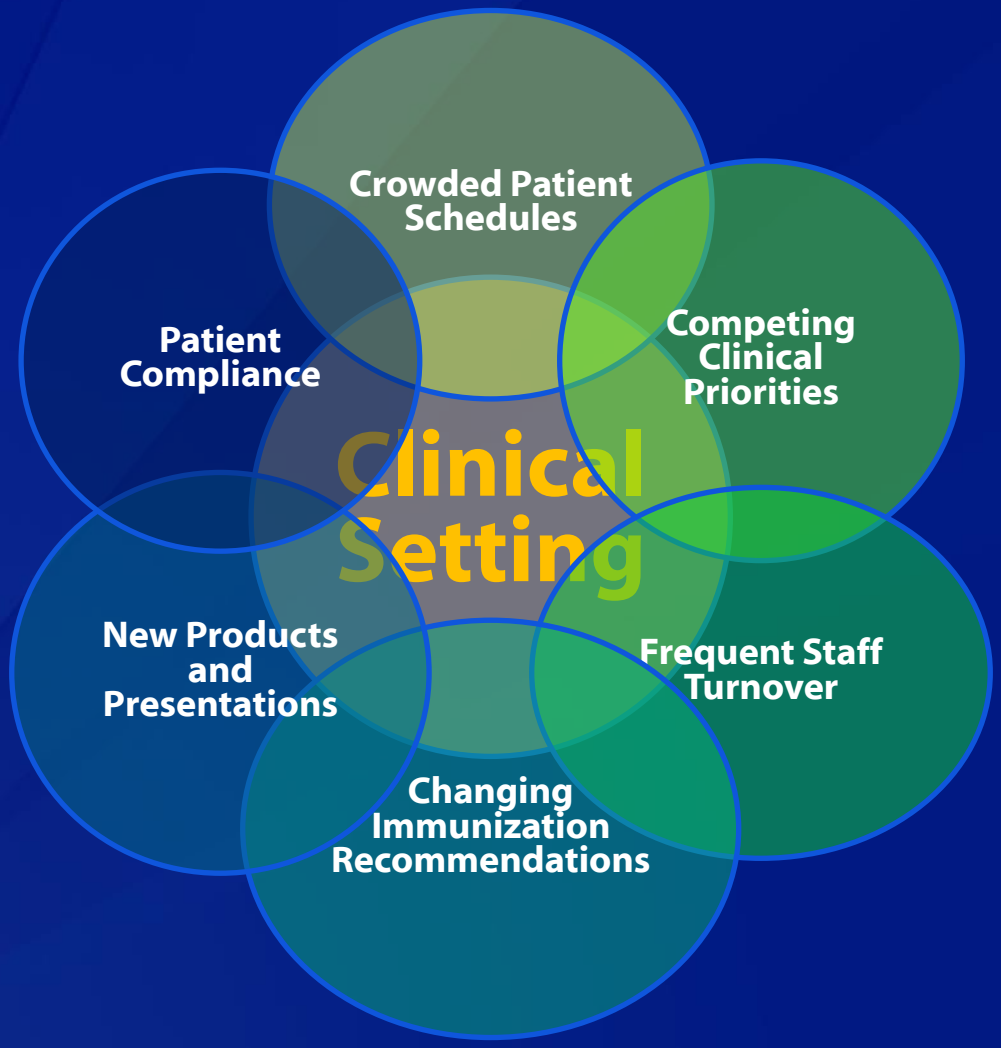
2-Year Summary of National Vaccine Errors Reporting System (VERP)

Table 2. Top contributing factors associated with vaccines most frequently cited in reports

Vaccine	% of All Reports	Top Contributing Factors	%
Influenza Virus *Trivalent, Types A and B*	16	Age-dependent formulation of same vaccine	19
		Not familiar with dosing of the product	7
		Patient age not verified before administration	6
DTaP-IPV *Diphtheria and Tetanus Toxoids, Acellular Pertussis Adsorbed, and Inactivated Poliovirus*	13	Not familiar with indicated ages for product	32
		Age-dependent formulation of same vaccine	17
		Patient age not verified before administration	4
HepA *Hepatitis A, Inactivated*	12	Age-dependent formulation of same vaccine	40
		Not familiar with dosing of the product	31
		Patient chart not checked prior to administration	6
Tdap *Tetanus Toxoid, Reduced Diphtheria Toxoid, and Acellular Pertussis Adsorbed*	10	Similar vaccine abbreviations	18
		Not familiar with product(s)	8
		Similar generic names	8
HPV4 *Human Papillomavirus (Types 6, 11, 16, 18), Recombinant*	8	Stored at temperature greater than recommended	17
		Stored at temperature lower than recommended	13
		Not familiar with product(s)	11
DTaP *Diphtheria and Tetanus Toxoids and Acellular Pertussis Adsorbed*	7	Patient age not verified before administration	14
		Routine check for expired products not conducted	9
		Similar generic names	8
MMRV *Measles, Mumps, Rubella, and Varicella Virus Live*	6	Not familiar with indicated ages for product	10
		Similar vaccine container labels/packaging	6
		Products stored near one another	6
HepB *Hepatitis B (Recombinant)*	6	Age-dependent formulation of same vaccine	14
		Not familiar with dosing of product	8
		Similar vaccine container labels/packaging	6
DTaP-IPV/Hib *Diphtheria and Tetanus Toxoids, Acellular Pertussis Adsorbed, Inactivated Poliovirus, and Haemophilus b Conjugate*	4	Not familiar with how to mix or prepare the product	19
		Miscommunication of vaccine order	3
		Not familiar with indicated ages for product	3
Hib *Haemophilus b Conjugate (Tetanus Toxoid Conjugate)*	4	Patient age not verified before administration	8
		Confusion regarding components of vaccine	6
		Not familiar with indicated ages for product	6
DTaP-HepB-IPV *Diphtheria and Tetanus Toxoids, Acellular Pertussis Adsorbed, Hepatitis B (Recombinant), and Inactivated Poliovirus*	4	Patient chart not checked before administration	8
		Patient age not verified prior to administration	5
		Similar vaccine container labels/packaging	5

http://www.ismp.org/newsletters/acutecare/showarticle.aspx?id=95

Immunization Challenges in Clinical Settings



"Rights" of Medication Administration for Vaccines

Right Patient

Right vaccine and diluent

Right time
- Age and interval
- Before expiration

Right dosage

Right route
- Needle length and gauge
- Technique

Right site
- Age and size

Right documentation

Right Patient

- Confirm patient's name and spelling
- Date of birth
- Ask if patient has ever been vaccinated using another name or at another facility
- Ask patient or parent if they have a copy of their immunization record
- Look in immunization registry (ASIIS) for doses previously given

Right Vaccine

Td, TT, DT and TST (PPD) Errors

Notice to Readers: Inadvertent Intradermal Administration of Tetanus Toxoid--Containing Vaccines Instead of Tuberculosis Skin Tests

CDC and the Food and Drug Administration (FDA) have been notified about the potential for inadvertent administration of tetanus toxoid--containing vaccines (TTCVs) instead of tuberculin purified protein derivative (PPD) (Tubersol®, Aventis-Pasteur, Swiftwater, Pennsylvania; Aplisol®, Parkedale Pharmaceuticals, Rochester, Michigan) used for tuberculosis skin tests (TSTs). The Vaccine Adverse Event Reporting System (VAERS), a passive surveillance system jointly operated by CDC and FDA (*1*), detected clusters of medication errors in at least two states. These findings, along with another previously reported investigation involving the same error (*2*), suggest the need for health-care providers to take additional steps to minimize the risk for inadvertent intradermal injections of TTCVs.

In April 2004, five reports of medication error involving tetanus toxoid (TT) from a health-care provider were identified. Patients were vaccinated on three different dates; all experienced local reactions without complications. Another cluster reported to VAERS in June 2003 involved an undisclosed number of patients; a health-care provider confused tetanus and diphtheria toxoids (Td) vaccine for adult use (adsorbed) with PPD and administered Td intradermally. Patients with adverse reactions to these administrations had skin reactions interpreted as positive TSTs, which

- **Similarities in packaging might have contributed to medication errors**
- **Both products require refrigeration and often are stored side by side**

in single-dose syringes, resulting in provider purchase of multiple-dose vials, was cited as a contributing factor to medication error in one cluster. Conversely, at least eight reports have been documented of inadvertent substitution for vaccine products, resulting in intramuscular administration of PPD (FDA, unpublished data, 2004).

Health-care providers should consider ways to prevent vaccine misadministration. As more vaccines and combination products become available, the potential for medication errors might increase. Possible measures to prevent misadministration should include pharmacy dispensing of vaccines when feasible, physical separation of products, careful visual inspection and reading of labels, preparation of PPD for patient use only at time of testing, and improved record keeping of lot numbers of vaccines and other injectable products. Prevention of such errors through barcode scanning technology is the goal of a recent FDA rule requiring individual drug packages to have identifying barcodes (*5*). For health-care facilities that possess such technology, package scanning could help prevent errors made during pharmacy dispensing of products or during vaccine or PPD administration. In addition, the *Product Identification Guide for Routine Vaccines* is a helpful resource for distinguishing commonly used vaccine products; the guide can be ordered from the California Department of Health Services, telephone 619-594-5933. Adverse events associated

http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5329a5.htm

DTaP and Tdap Vaccine Errors

- **More than 50 errors have been reported in which DTaP was administered instead of Tdap.**
  - In some previously reported cases, hundreds of patients have been involved in a single mix-up.
- **Several reports suggest that packaging similarities have also led to mix-ups between Kinrix and Pediarix, and Tdap and Pediarix.**

https://www.ismp.org/newsletters/acutecare/articles/20100701.asp

DTaP and Tdap Errors

Error	Action
DTaP given to person 7 years or older	Count dose as valid
Tdap given to child younger than 7 years as DTaP #1, #2, or #3	Do not count dose; give DTaP now
Tdap given to child younger than 7 years as DTaP #4 or #5	Count dose as valid

http://www.cdc.gov/mmwr/PDF/rr/rr5503.pdf (p. 27)

DTaP and Tdap Job Aid

http://eziz.org/assets/docs/IMM-508.pdf

Influenza Vaccine Errors

- **The most common type of influenza vaccine error reported to the ISMP VERP was administration of a vaccine to a patient who was not within the indicated age range for that vaccine.**
  - Lack of knowledge about age-dependent formulations
  - Failure to verify patient's age before administration to ensure correct formulation was administered
  - Also dosage errors

http://www.ismp.org/newsletters/acutecare/showarticle.aspx?id=95

Influenza Job Aid

Pediatric/Adult Influenza Vaccine 2014-2015

For influenza vaccines licensed only for adults, see page 2.

Age	Manufacturer	Brand Name	Presentation
6–35 months old	sanofi pasteur, Inc.	Fluzone® Quadrivalent	0.25 mL single-dose syringe
Healthy Persons 2–49 years old	MedImmune Vaccines, Inc.	FluMist® Quadrivalent[2]	0.2 mL single-dose nasal sprayer
36 months & Older	GlaxoSmithKline Biologicals	Fluarix® Quadrivalent	0.5 mL single-dose syringe
	ID Biomedical (GlaxoSmithKline)	FluLaval® Quadrivalent	5.0 mL[1] multi-dose vial
	ID Biomedical (GlaxoSmithKline)	FluLaval® Quadrivalent	0.5 mL single-dose syringe
	ID Biomedical (GlaxoSmithKline)	FluLaval®	5.0 mL[1] multi-dose vial
	sanofi pasteur, Inc.	Fluzone® Quadrivalent	0.5 mL single-dose vial
	sanofi pasteur, Inc.	Fluzone®	0.5 mL single-dose vial
	sanofi pasteur, Inc.	Fluzone® Quadrivalent	0.5 mL single-dose syringe
	sanofi pasteur, Inc.	Fluzone®	0.5 mL single-dose syringe
	sanofi pasteur, Inc.	Fluzone® Quadrivalent	5.0 mL[1] multi-dose vial
	sanofi pasteur, Inc.	Fluzone®	5.0 mL[1] multi-dose vial
4 years & Older	Novartis Vaccines and Diagnostics Ltd.	Fluvirin®	5.0 mL[1] multi-dose vial
	Novartis Vaccines and Diagnostics Ltd.	Fluvirin®	0.5 mL single-dose syringe
5 years & Older (ACIP recommends use for children 9 years and older)	CSL Limited	Afluria®	0.5 mL single-dose syringe
	CSL Limited	Afluria®	5.0 mL[1] multi-dose vial

All influenza vaccines are stored in the refrigerator. Questions: Toll-free: 877-2Get-VFC (877-243-8832)

1. Contains preservative and cannot be given to children younger than 3 years of age and pregnant women per California law (Health and Safety Code 124172).
2. ACIP recommends nasal spray influenza vaccine for children 2–8 years of age when it is immediately available.

These vaccines are available through the Vaccines for Children Program in 2014-2015 and can only be used for VFC eligible children through 18 years of age.

IMM-859 (07/14) Page 1

CDPH

Adult Influenza Vaccine 2014-2015

For influenza vaccines licensed for both adults and children, see page 1.

Age		Brand Name	Presentation
18 years & Older	Novartis Vaccines & Diagnostics Ltd.	Flucelvax®	0.5 mL prefilled syringe
18–64 years	sanofi pasteur, Inc.	Fluzone® Intradermal	0.1 mL prefilled syringe
18–49 years	Protein Sciences	FluBlok®	0.5 mL single-dose vial
65 years & Older	sanofi pasteur, Inc.	Fluzone® High-Dose	0.5 mL prefilled syringe

All influenza vaccines are stored in the refrigerator. Questions: Toll-free: 877-2Get-VFC (877-243-8832)

1. Contains preservative and cannot be given to children younger than 3 years of age and **pregnant women** per California law (Health and Safety Code 124172).

IMM-859 (07/14) Page 2

CDPH

http://eziz.org/assets/docs/IMM-859.pdf

DTaP/IPV Vaccine Error

- **Approved for:**
  - One dose at 4-6 years
  - Second booster dose of DTaP (5th dose) and IPV (4th dose)

DTaP/IPV Job Aid

Michigan Department of Community Health
MDCH
Jennifer M. Granholm, Governor
Janet Olszewski, Director

A Quick Look at Using DTaP/IPV (KINRIX™)

Indications for Use and Schedule

Approved for:

- Routine schedule of one dose at 4-6 years
- Second booster dose of DTaP (5th dose) and IPV (4th dose)
- Ages 4 years through 6 years (6 years, 364 days)

Note: When DTaP-IPV/Hib (Pentacel®) is given at ages 2, 4, 6, and 15-18 months, an additional booster dose of an age-appropriate IPV should be given at age 4 years. Kinrix may be used for this additional (5th) dose of IPV.

Make sure minimum age and minimum intervals are met:

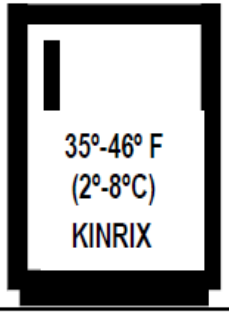
- Minimum age for the 5th dose of DTaP is 4 years
- Minimum interval between dose 4 & 5 of DTaP is 6 months

Vaccine Administration

- Intramuscular (IM) injection in the deltoid of the arm or anterolateral thigh
- 1 inch needle; 22-25 gauge
- Professional judgment is appropriate when selecting needle length and site
- Can be given with other vaccines, at the same visit (use separate sites; space at least 1 inch apart)

Storage and Handling

- Store in the refrigerator between 35°-46° F (2°-8°C)
- Do NOT freeze
- Keep in the original box
- Shake well before using



http://www.aimtoolkit.org/health-care/information-by-vaccine.php

DTaP/IPV Vaccine/Diluent and Hib Vaccine Error

DTaP/IPV + Hib = Pentacel

MenA Vaccine and MenCYW135 Vaccine/Diluent Error

+

=

Lyophilized Men A vaccine

Diluent Men C,Y,W135 vaccine

Menveo vaccine

Vaccine + Right Diluent Job Aid

Vaccines with Diluents: How to Use Them

Be sure to reconstitute the following vaccines correctly before administering them! Reconstitution means that the lyophilized (freeze-dried) vaccine powder or wafer in one vial must be reconstituted (mixed) with the diluent (liquid) in another.

- Only use the diluent provided by the manufacturer for that vaccine as indicated on the chart.
- ALWAYS check the expiration date on the diluent and vaccine. NEVER use expired diluent or vaccine.

Vaccine product name	Manufacturer	Lyophilized vaccine (powder)	Liquid diluent (may contain vaccine)	Time allowed between reconstitution and use*	Diluent storage environment
ActHIB (Hib)	sanofi pasteur	Hib	0.4% sodium chloride	24 hrs	Refrigerator
Hiberix (Hib)	GlaxoSmithKline	Hib	0.9% sodium chloride	24 hrs	Refrigerator or room temp
Imovax (RAB_{HDCV})	sanofi pasteur	Rabies virus	Sterile water	Immediately†	Refrigerator
M-M-R II (MMR)	Merck	MMR	Sterile water	8 hrs	Refrigerator or room temp
MenHibrix (Hib-MenCY)	GlaxoSmithKline	Hib-MenCY	0.9% sodium chloride	Immediately†	Refrigerator or room temp
Menomune (MPSV4)	sanofi pasteur	MPSV4	Distilled water	30 min (single-dose vial) 35 days (multidose vial)	Refrigerator
Menveo (MCV4)	Novartis	MenA	MenCWY	8 hrs	Refrigerator
Pentacel (DTaP-IPV/Hib)	sanofi pasteur	Hib	DTaP-IPV	Immediately†	Refrigerator
ProQuad (MMRV)	Merck	MMRV	Sterile water	30 min	Refrigerator or room temp
RabAvert (RAB_{PCECV})	Novartis	Rabies virus	Sterile water	Immediately†	Refrigerator
Rotarix (RV1)‡	GlaxoSmithKline	RV1	Sterile water, calcium carbonate, and xanthan	24 hrs	Room temp
Varivax (VAR)	Merck	VAR	Sterile water	30 min	Refrigerator or room temp
YF-VAX (YF)	sanofi pasteur	YF	0.9% sodium chloride	60 min	Refrigerator or room temp
Zostavax (HZV)	Merck	HZV	Sterile water	30 min	Refrigerator or room temp

http://www.immunize.org/catg.d/p3040.pdf

Combination and/or Reconstituted Vaccines Job Aid

MDCH

Quick Reference to Combination and/or Reconstituted Vaccines: Childhood

(Highlight Vaccines in Your Refrigerator and Post)

Brand Name	What it contains	Use for Ages:	Use for Dose:	Administration Tips*
Pentacel® SP	DTaP, IPV + Hib	6 weeks through 4 years	1, 2, 3 or 4 of DTaP, IPV or Hib	• Draw up the DTaP/IPV liquid (diluent) • Add diluent to the Hib vial; shake well • Administer within 30 minutes; give IM
Pediarix® GSK	DTaP, IPV, Hep B	6 weeks through 6 years	1, 2, or 3 of IPV or DTaP; any dose of hep B	• Premixed • Shake well before administering; give IM
Kinrix® GSK	DTaP, IPV	4 through 6 years	5th dose of DTaP; 4th dose of IPV	• Premixed • Shake well before administering; give IM
Comvax® Merck	Hep B, Hib	6 weeks through 4 years	Any dose of hep B or Hib	• Premixed • Shake well before administering; give IM
ProQuad® Merck	MMR, Var (MMRV)	If 1st dose: ages 12-47 mo, use separate MMR & Var If 1st dose: ages 4-12 years, use MMRV If 2nd dose: ages 15 mo-12 years, use MMRV		• Draw up "diluent for Merck vaccines" • Add diluent to MMRV vial; shake well • Administer within 30 minutes; give SC
MMR II® Merck	MMR	12 months and older	1 or 2 of MMR	• Draw up "diluent for Merck vaccines" • Add diluent to MMR vial; shake well; give SC
ActHIB® SP	Hib	6 weeks through 4 years	Any dose of Hib	• Draw up diluent packaged with Hib vial • Add diluent to Hib vial; shake well; give IM
Hiberix® GSK	Hib	12 months through 59 months	Only the booster (final) dose of Hib series	• Add diluent from packaged pre-filled syringe to Hib vial; leave needle inserted • Shake well; redraw into syringe; give IM
Varivax® Merck	Var	12 months and older	1 or 2 of Var	• Draw up "diluent for Merck vaccines" • Add diluent to Varicella vial; shake well • Administer within 30 minutes; give SC
Menveo® Novartis	MCV4	2 through 55 years	Any dose of MCV4	• Draw up MenCYW liquid (diluent) • Add to MenA vial; invert; shake well; give IM
Rotarix®, GSK	RV1 (Rotavirus)	6 weeks through 7 months	Any dose of RV	• Use diluent in pre-filled oral applicator • Add to RV1 vial; shake; withdraw; give orally

Avoid medication errors! Use only the diluent that is packaged or sent with each specific vaccine—don't use any other liquid

*Refer to the manufacturer's package insert for further details regarding reconstituting and/or administering these products

December 2, 2011

http://www.michigan.gov/documents/mdch/4QuickLookComboReconVax112508_258829_7.pdf

Vaccine Labels Job Aid

Hepatitis Vaccines

HepA—Adult Formulation

Ages: 19 years and older
Use for: Any dose in the series
Route: Intramuscular (IM) injection

HepB—Adult Formulation

Ages: 20 years and older
Use for: Any dose in the series
Route: Intramuscular (IM) injection

HepA-HepB (Twinrix)

Ages: 18 years and older
Contains: HepA = Pediatric dosage
HepB = Adult dosage
Schedule: 0, 1 and 6 months
Route: Intramuscular (IM) injection

http://www.cdc.gov/vaccines/recs/storage/guide/vaccine-storage-labels.pdf

Right Time

Figure 1. Recommended immunization schedule for persons aged 0 through 18 years – United States, 2015.
(FOR THOSE WHO FALL BEHIND OR START LATE, SEE THE CATCH-UP SCHEDULE [FIGURE 2]).
These recommendations must be read with the footnotes that follow. For those who fall behind or start late, provide catch-up vaccination at the earliest opportunity as indicated by the green bars in Figure 1. To determine minimum intervals between doses, see the catch-up schedule (Figure 2). School entry and adolescent vaccine age groups are shaded.

Vaccine	Birth	1 mo	2 mos	4 mos	6 mos	9 mos	12 mos	15 mos	18 mos	19–23 mos	2-3 yrs	4-6 yrs	7-10 yrs	11-12 yrs	13–15 yrs	16–18 yrs
Hepatitis B[1] (HepB)	1st dose	2nd dose			3rd dose											
Rotavirus[2] (RV) RV1 (2-dose series); RV5 (3-dose series)																
Diphtheria, tetanus, & acellular pertussis[3] (DTaP: <7 yrs)																
Tetanus, diphtheria, & acellular pertussis[4] (Tdap: ≥7 yrs)																
Haemophilus influenzae type b[5] (Hib)																
Pneumococcal conjugate[6] (PCV13)																
Pneumococcal polysaccharide[6] (PPSV23)																
Inactivated poliovirus[7] (IPV: <18 yrs)																
Influenza[8] (IIV; LAIV) 2 doses for some: See footnote 8																
Measles, mumps, rubella[9] (MMR)																
Varicella[10] (VAR)																
Hepatitis A[11] (HepA)																
Human papillomavirus[12] (HPV2: females only; HPV4: males and females)																
Meningococcal[13] (Hib-MenCY ≥ 6 weeks; MenACWY-D ≥9 mos; MenACWY-CRM ≥ 2 mos)																

Range of recommended ages for all children

This schedule includes recommendations in el
feasible. The use of a combination vaccine ger
on Immunization Practices (ACIP) statement fo
vaccination should be reported to the Vaccine
diseases should be reported to the state or loc
(http://www.cdc.gov/vaccines/recs/vac-admin

This schedule is approved by the Advisory Cor
Family Physicians (http://www.aafp.org), and t

NOTE: The above recommendations

FIGURE 2. Catch-up immunization schedule for persons aged 4 months through 18 years who start late or who are more than 1 month behind —United States, 2015.
The figure below provides catch-up schedules and minimum intervals between doses for children whose vaccinations have been delayed. A vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Use the section appropriate for the child's age. Always use this table in conjunction with Figure 1 and the footnotes that follow.

Children age 4 months through 6 years

Vaccine	Minimum Age for Dose 1	Minimum Interval Between Doses: Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Dose 4	Dose 4 to Dose 5
Hepatitis B[1]	Birth	4 weeks			
Rotavirus[2]	6 weeks	4 weeks			
Diphtheria, tetanus, and acellular pertussis[3]	6 weeks	4 weeks			
Haemophilus influenzae type b[5]	6 weeks	4 weeks if first dose was a 8 weeks (as final d if first dose was a No further doses months or older.			
Pneumococcal[6]	6 weeks	4 weeks if first dose admin 8 weeks (as final d if first dose was a No further doses for healthy childr older.			
Inactivated poliovirus[7]	6 weeks	4 weeks[7]			
Meningococcal[13]	6 weeks	8 weeks[13]			
Measles, mumps, rubella[9]	12 months	4 weeks			
Varicella[10]	12 months	3 months			
Hepatitis A[11]	12 months	6 months			
Children age 7 years through 18 years					
Tetanus, diphtheria; tetanus, diphtheria, and acellular pertussis[4]	7 years[4]	4 weeks			
Human papillomavirus[12]	9 years				
Hepatitis A[11]	Not applicable (N/A)	6 months			
Hepatitis B[1]	N/A	4 weeks			
Inactivated poliovirus[7]	N/A	4 weeks			
Meningococcal[13]	N/A	8 weeks[13]			
Measles, mumps, rubella[9]	N/A	4 weeks			
Varicella[10]	N/A	3 months if young 4 weeks if age 13			

NOTE: The above recommendations

Recommended Adult Immunization Schedule—United States - 2015

Note: These recommendations must be read with the footnotes that follow containing number of doses, intervals between doses, and other important information.

Figure 1. Recommended adult immunization schedule, by vaccine and age group[1]

VACCINE ▼ AGE GROUP ▶	19-21 years
Influenza*[2]	
Tetanus, diphtheria, pertussis (Td/Tdap)*[3]	
Varicella*[4]	
Human papillomavirus (HPV) Female*[5]	
Human papillomavirus (HPV) Male*[5]	
Zoster[6]	
Measles, mumps, rubella (MMR)*[7]	
Pneumococcal 13-valent conjugate (PCV13)*[8]	
Pneumococcal polysaccharide (PPSV23)[8]	
Meningococcal*[9]	
Hepatitis A*[10]	
Hepatitis B*[11]	
Haemophilus influenzae type b (Hib)*[12]	

*Covered by the Vaccine Injury Compensation Program

For all persons in this category who meet the age requirements and who lack documentation of vaccination or have no evidence of previous infection; zoster vaccine recommended regardless of prior episode of zoster

Recommended if some other risk factor is present (e.g., on the basis of medical, occupational, lifestyle, or other indication)

No recommendation

Report all clinicall
report are availab

Information on h
claim for vaccine

Additional inform
www.cdc.gov/vac
Friday, excluding

Use of trade name

The recommenda
(ACIP), the Ameri
American College

Figure 2. Vaccines that might be indicated for adults based on medical and other indications[1]

VACCINE ▼ INDICATION ▶	Pregnancy	Immuno-compromising conditions (excluding human immunodeficiency virus [HIV])[4,6,7,8,13]	HIV infection CD4+ T lymphocyte count[4,6,7,8,13]: < 200 cells/μL	HIV infection CD4+ T lymphocyte count[4,6,7,8,13]: ≥ 200 cells/μL	Men who have sex with men (MSM)	Kidney failure, end-stage renal disease, receipt of hemodialysis	Heart disease, chronic lung disease, chronic alcoholism	Asplenia (including elective splenectomy and persistent complement component deficiencies)[8,12]	Chronic liver disease	Diabetes	Healthcare personnel
Influenza*[2]	1 dose IIV annually				1 dose IIV or LAIV annually	1 dose IIV annually					1 dose IIV or LAIV annually
Tetanus, diphtheria, pertussis (Td/Tdap)*[3]	1 dose Tdap each pregnancy	Substitute 1-time dose of Tdap for Td booster; then boost with Td every 10 yrs									
Varicella*[4]	Contraindicated			2 doses							
Human papillomavirus (HPV) Female*[5]		3 doses through age 26 yrs				3 doses through age 26 yrs					
Human papillomavirus (HPV) Male*[5]		3 doses through age 26 yrs				3 doses through age 21 yrs					
Zoster[6]	Contraindicated				1 dose						
Measles, mumps, rubella (MMR)*[7]	Contraindicated			1 or 2 doses							
Pneumococcal 13-valent conjugate (PCV13)*[8]						1 dose					
Pneumococcal polysaccharide (PPSV23)[8]						1 or 2 doses					
Meningococcal*[9]	1 or more doses										
Hepatitis A*[10]	2 doses										
Hepatitis B*[11]	3 doses										
Haemophilus influenzae type b (Hib)*[12]		post-HSCT recipients only		1 or 3 doses							

*Covered by the Vaccine Injury Compensation Program

For all persons in this category who meet the age requirements and who lack documentation of vaccination or have no evidence of previous infection; zoster vaccine recommended regardless of prior episode of zoster

Recommended if some other risk factor is present (e.g., on the basis of medical, occupational, lifestyle, or other indications)

No recommendation

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

These schedules indicate the recommended age groups and medical indications for which administration of currently licensed vaccines is commonly recommended for adults ages 19 years and older, as of February 1, 2015. For all vaccines being recommended on the Adult Immunization Schedule: a vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Licensed combination vaccines may be used whenever any components of the combination are indicated and when the vaccine's other components are not contraindicated. For detailed recommendations on all vaccines, including those used primarily for travelers or that are issued during the year, consult the manufacturers' package inserts and the complete statements from the Advisory Committee on Immunization Practices (www.cdc.gov/vaccines/hcp/acip-recs/index.html). Use of trade names and commercial sources is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services.

http://www.cdc.gov/vaccines/schedules/index.html

Age and Interval Job Aid

Recommended and Minimum Ages and Intervals Between Doses				
Vaccine and dose number	Recommended age for this dose	Minimum age for this dose	Recommended interval to next dose	Minimum interval to next dose
Hepatitis B (HepB)-1[3]	Birth	Birth	1-4 months	4 weeks
HepB-2	1-2 months	4 weeks	2-17 months	8 weeks
HepB-3[4]	6-18 months	24 weeks	—	—
Diphtheria-tetanus-acellular pertussis (DTaP)-1[3]	2 months	6 weeks	2 months	4 weeks
DTaP-2	4 months	10 weeks	2 months	4 weeks
DTaP-3	6 months	14 weeks	6-12 months	6 months[5,6]
DTaP-4	15-18 months	12 months	3 years	6 months[5]
DTaP-5	4-6 years	4 years	—	—
Haemophilus influenzae type b (Hib)-1[5,7]	2 months	6 weeks	2 months	4 weeks
Hib-2	4 months	10 weeks	2 months	4 weeks
Hib-3[8]	6 months	14 weeks	6-9 months	8 weeks
Hib-4	12-15 months	12 months	—	—
Inactivated poliovirus (IPV)-1[3]	2 months	6 weeks	2 months	4 weeks
IPV-2	4 months	10 weeks	2-14 months	4 weeks
IPV-3	6-18 months	14 weeks	3-5 years	6 months
IPV-4[9]	4-6 years	4 years	—	—
Pneumococcal conjugate (PCV)-1[7]	2 months	6 weeks	8 weeks	4 weeks
PCV-2	4 months	10 weeks	8 weeks	4 weeks
PCV-3	6 months	14 weeks	6 months	8 weeks
PCV-4	12-15 months	12 months	—	—
Measles-mumps-rubella (MMR)-1[10]	12-15 months	12 months	3-5 years	4 weeks
MMR-2[10]	4-6 years	13 months	—	—
Varicella (Var)-1[10]	12-15 months	12 months	3-5 years	12 weeks[11]
Var-2[10]	4-6 years	15 months	—	—
Hepatitis A (HepA)-1	12-23 months	12 months	6-18 months[5]	6 months[5]
HepA-2	≥18 months	18 months	—	—
Influenza, inactivated (IIV)[12]	≥6 months	6 months[13]	1 month	4 weeks
Influenza, live attenuated (LAIV)[12]	2-49 years	2 years	1 month	4 weeks
Meningococcal conjugate (MCV4)-1[14]	11-12 years	2 years	4-5 years	8 weeks
MCV4-2	16 years	11 years (+ 8 weeks)	—	—

http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/A/age-interval-table.pdf

Pneumococcal Age and Interval Job Aid

The charts below provide details on timing of PCV13 and PPSV23 doses for all others.

PCV13 and PPSV23 timing: Adults age 65 years and older

Pneumococcal vaccine-näive persons

PCV13 at age ≥ 65 years → PPSV23

6-12 months*

Persons who previously received PPSV23 at age ≥ 65 years

PPSV23 at age ≥ 65 years → PCV13

≥ 1 years

Persons who previously received PPSV23 before age 65 years who are now age ≥ 65 years

PPSV23 at age ≤ 65 years → PCV13 at age ≥ 65 years → PPSV23

≥ 1 years; 6-12 months*

≥ 5 years

*PPSV23 can be given later than 6-12 months after PCV13 if this window is missed; Minimum interval between PCV13 and PPSV23 doses is 8 weeks

PCV13 and PPSV23 timing: Recommended adults age 19 to 64 years*

Vaccine-naïve persons

PCV13 → PPSV23 → PPSV23† → and PPSV23 at 65 years or later

≥8 weeks; ≥5 years

Persons previously vaccinated with PPSV23

PPSV23 → PCV13 → PPSV23† → and PPSV23 at 65 years or later

≥1 year; ≥8 weeks

≥ 5 years

* See Table on page 1 for details on which adults age 19 to 64 years need pneumococcal vaccination

† This dose of PPSV23 is recommended for immunocompromised persons and those with functional or anatomic asplenia only

http://www.adultvaccination.org/professional-resources/pneumo/adult-pneumo-guide-hcp.pdf

Expired LAIV Error

Recommend Tweet Share

Notes from the Field: Reports of Expired Live Attenuated Influenza Vaccine Being Administered – United States, 2007-2014

Weekly
September 5, 2014 / 63(35);773-773

Penina Haber, MPH[1], Christopher P. Schembri, MPH[1], Paige Lewis, MSPH[1], Beth Hibbs, MPH[1], Tom Shimabukuro, MD[1] (Author affiliations at end of text)

Annual influenza vaccination is recommended for all persons aged ≥6 months (1). Two vaccine types are approved in the United States, injectable inactivated

Of the 4,699 LAIV reports, 866 (18.4%) involved administration of expired vaccine

Of the 4,699 LAIV reports, 866 (18.4%) involved administration of expired vaccine; 97.5% of these reports did not document any adverse health event. In 95.1% of expired LAIV reports, vaccination occurred after the first week in November, which is approximately 18 weeks from July 1. Historically, by early November, most vaccine has been administered for the season (3). In contrast, of the 49,695 IIV reports, only 96 (0.02%) involved administration of expired vaccine. VAERS is a national, passive surveillance system that accepts reports from anyone (including vaccine recipients, providers, and manufacturers); because of this, it is not possible to definitively conclude that LAIV is more likely to be administered after its expiration date. However, the magnitude of disproportional reporting for this error in expired LAIV use compared with IIV supports the hypothesis.

http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6335a3.htm?s_cid=mm6335a3_w

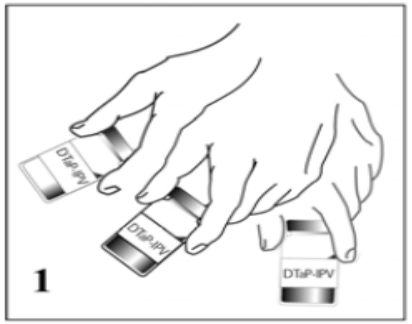
Vaccine Expiration Dates

- At least 1 time each week and each time vaccines are delivered, check and arrange vaccines and diluents in storage unit according to expiration dates

Vaccine may be used up to and including the expiration date.

Exceptions to Vaccine Expiration Dates

- **Reconstitution**
  - Once a lyophilized vaccine is reconstituted, there is a limited timeframe in which the vaccine can be used



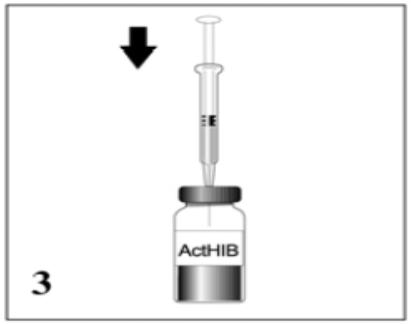


Figure 2
Withdraw the entire liquid content.

Figure 4
Swirl vial gently.

Exceptions to Vaccine Expiration Dates

- **Multidose vials (MDVs)**
  - Most MDVs may be used until the expiration date on the vial unless contaminated or compromised in some way. Some MDVs have a specified timeframe for use once the vial is entered

2.2 Administration Instructions

Shake well before administration. Parenteral drug products should be inspected visually for particulate matter and discoloration prior to administration, whenever solution and container permit. If either of these conditions exists, the vaccine should not be administered.

Attach a sterile needle to the prefilled syringe and administer intramuscularly.

For the multi-dose vial, use a sterile needle and sterile syringe to withdraw the 0.5-mL dose from the multi-dose vial and administer intramuscularly. A sterile syringe with a needle bore no larger than 23 gauge is recommended for administration. It is recommended that small

Once entered, a multidose vial, and any residual contents, should be discarded after 28 days.

Exceptions to Vaccine Expiration Dates

- **Manufacturer shortened expiration date**
  - If vaccine has been exposed to inappropriate storage conditions, potency may be reduced before the expiration date. The manufacturer may shorten the expiration date

Exceptions to Vaccine Expiration Dates

- When vaccines must be used prior to the expiration date on the label, this is referred to as the "beyond use date" or "BUD
- The calculated "BUD" (date and/or time) should be noted on the label along with the initials of the person changing the date/time

Right Dosage

HepA and HepB Dosage Errors

- **Hepatitis A vaccine:**
  - Pediatric formulations are only FDA-approved for persons 12 months through 18 years of age (0.5 mL)
  - Adult formulations are only FDA-approved for persons 19 years of age and older (1 mL)
- **Hepatitis B vaccine:**
  - **Recombivax HB** – pediatric and adult formulations are FDA-approved for use in any age group as long as the age-appropriate dosage is used (0.5 mL for birth-19 years and 1 mL for 20 years and older)
  - **Engerix B**
    - Pediatric formulation is only FDA-approved for persons birth through 19 years of age (0.5 mL)
    - Adult formulation is FDA-approved for use in adolescents 11-19 years of age and adults 20 years of age and older as long as the age-appropriate dosage is used
      (0.5 mL birth-19 years and 1 ml for 20 years and older)

Hepatitis Vaccines Job Aid

Hepatitis A & B Vaccines

Be sure your patient gets the correct dose!

Recommended dosages and schedules of hepatitis A vaccines

Vaccine	Age group	Dose	Volume	# Doses	Dosing interval
Havrix (GlaxoSmithKline)	1–18 yrs	720 ELISA Units	0.5 mL	2	0, 6–12 mos
	19 yrs & older	1440 ELISA Units	1.0 mL	2	0, 6–12 mos
Vaqta (Merck)	1–18 yrs	25 Units	0.5 mL	2	0, 6–18 mos
	19 yrs & older	50 Units	1.0 mL	2	0, 6–18 mos

Recommended dosages and schedules of hepatitis B vaccines

Vaccine	Age group	Dose	Volume	# Doses	Schedule / Dosing interval
Engerix-B (GlaxoSmithKline)	0–19 yrs	10 µg	0.5 mL	3	Age: birth*, 1–4, 6–18 mos Dose intervals for older children: 0, 1–2, 4 mos†
	20 yrs & older	20 µg	1.0 mL	3	Dose interval: 0, 1, 6 mos†
Recombivax HB (Merck)	0–19 yrs	5 µg	0.5 mL	3	Age: birth*, 1–4, 6–18 mos Dose intervals for older children: 0, 1–2, 4 mos†
	11–15 yrs	10 µg	1.0 mL	2	Dose intervals: 0, 4–6 mos†
	20 yrs & older	10 µg	1.0 mL	3	Dose intervals: 0, 1, 6 mos†

Note: For adult dialysis patients, the Engerix-B dose required is 40 µg/2.0 mL (use the adult 20 µg/1.0 mL formulation) on a schedule of 0, 1, 2, and 6 months. For Recombivax HB, a special formulation for dialysis patients is available. The dose is 40 µg/1.0 mL and it is given on a schedule of 0, 1, and 6 months.

*Birth dose administered prior to discharge from the newborn nursery.

†The schedule for administering hepatitis B vaccine is flexible and can vary.

Combinations using hepatitis A and/or hepatitis B vaccines

Vaccine	Age group	Volume	# Doses	Schedule / Dosing interval
Comvax‡ Hib+HepB (Merck)	6 wks – 4 yrs	0.5 mL	3	Age: 2, 4, 12–15 mos
Pediarix‡ DTaP+HepB+IPV (GlaxoSmithKline)	6 wks – 6 yrs	0.5 mL	3	Age: 2, 4, 6 mos
Twinrix HepA+HepB (GlaxoSmithKline)	18 yrs & older	1.0 mL	3	Dose intervals: 0, 1, 6 mos
		1.0 mL	4	Dose intervals: 0, 7, 21–30 days, 12 mos.

‡Cannot be administered before age 6 weeks, but may be used to complete the hepatitis B vaccine series for all infants, including those of HBsAg+ mothers. Either Engerix-B or Recombivax HB should be used for the hepatitis B vaccine birth dose prior to hospital discharge.

Sources

- Prevention of Hepatitis A Through Active or Passive Immunization: Recommendations of the ACIP, MMWR, May 19, 2006, Vol. 55(RR-7)
- A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States: Recommendations of the ACIP, Part 1: Immunization of Infants, Children and Adolescents, MMWR, December 23, 2005, Vol. 54(RR-16)
- A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States: Recommendations of the ACIP, Part II: Immunization of Adults, MMWR, December 9, 2005, Vol. 55(RR-16)
- Overall Recommendations on Immunization: Recommendations of the ACIP, MMWR, December 5, 2006, Vol. 55(RR-15)

Technical content reviewed by the Centers for Disease Control and Prevention, January 2011

www.immunize.org/catg.d/p2081.pdf • Item #P2081 (1/11)

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What hepatitis B vaccination question is asked over and over and over again?

Don't restart the series!

http://www.immunize.org/catg.d/p2081.pdf

Right Route

Oral

Intranasal

Subcutaneous

Intradermal

Intramuscular

Rotavirus Vaccine Route Errors

Notes from the Field: Rotavirus Vaccine Administration Errors — United States, 2006-2013

Weekly
January 31, 2014 / 63(04);81-81

- **There were 39 reports of administration by injection (33 for RV1 and six for RV5)**
  - Misinterpreting package insert instructions
  - Confusing the RV1 oral applicator syringe with a syringe for injection
  - Confusing the RV1 vial with a vial used for injectable vaccine
  - Inadequate training
  - Not reading the package insert

Refe

1. CDC. Prevention of rotavirus gastroenteritis among infants and children: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2009;58(No. RR-2).
2. Varricchio F, Iskander J, DeStefano F, et al. Understanding vaccine safety information from the Vaccine Adverse Event Reporting System. Pediatr Infect Dis J 2004;23:287–94.

http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6304a4.htm?s_cid=mm6304a4_w

Rotavirus Vaccines – Oral Route

RV5 (RotaTeq)
Oral

RV1 (Rotarix)
Oral

Influenza Vaccine Route Errors

Fluzone
Manufacturer-filled Syringes (MFS)
Intramuscular

FluMist Sprayers
Intranasal

Right Route

REUTERS | EDITION: U.S. | News & Markets | Sectors & Industries | Analysis & Opinion

For obese, vaccine needle size matters

Frederik Joelving
Mon Feb 8, 2010 10:57am EST

Related News
Alternative prostate cancer vaccine shows promise
Mon, Jan 25 2010

Using a standard 1-inch needle to immunize obese adolescents against hepatitis B virus produced a much weaker effect than using a longer needle

http://www.reuters.com/article/2010/02/08/us-obese-needle-idUSTRE61733Z20100208

Intramuscular Technique Job Aid

How to Administer Intramuscular (IM) Vaccine Injections

Administer these vaccines by the intramuscular (IM) route: diphtheria-tetanus-pertussis (DTaP, Tdap); diphtheria-tetanus (DT, Td); *Haemophilus influenzae* type b (Hib); hepatitis A (HepA); hepatitis B (HepB); human papillomavirus (HPV); inactivated influenza (TIV); quadrivalent meningococcal conjugate (MCV4); and pneumococcal conjugate (PCV). Administer inactivated polio (IPV) and pneumococcal polysaccharide (PPSV23) either IM or SC.

Patient age	Injection site	Needle size
Newborn (0–28 days)	Anterolateral thigh muscle	⅝"* (22–25 gauge)
Infant (1–12 months)	Anterolateral thigh muscle	1"* (22–25 gauge)
Toddler (1–2 years)	Anterolateral thigh muscle	1–1¼" (22–25 gauge)
	Alternate site: Deltoid muscle of arm if muscle mass is adequate	⅝–1"* (22–25 gauge)
Children (3–18 years)	Deltoid muscle (upper arm)	⅝–1"* (22–25 gauge)
	Alternate site: Anterolateral thigh muscle	1–1¼" (22–25 gauge)
Adults 19 years and older	Deltoid muscle (upper arm)	1–1½"†‡ (22–25 gauge)
	Alternate site: Anterolateral thigh muscle	1–1½" (22–25 gauge)

*A ⅝" needle usually is adequate for neonates (first 28 days of life), preterm infants, and children ages 1 through 18 years if the skin is stretched flat between the thumb and forefinger and the needle is inserted at a 90° angle to the skin.

†A ⅝" needle is sufficient in adults weighing less than 130 lbs (<60 kg) if the subcutaneous tissue is not bunched and the injection is made at a 90-degree angle; a 1" needle is sufficient in adults weighing 130–152 lbs (60–70 kg); a 1–1½" needle is recommended in women weighing 152–200 lbs (70–90 kg) and men weighing 152–260 lbs (70–118 kg); a 1½" needle is recommended in women weighing more than 200 lbs (>90 kg) or men weighing more than 260 lbs (>118 kg).

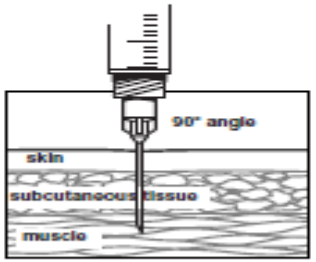
Needle insertion

Use a needle long enough to reach deep into the muscle.

Insert needle at a 90° angle to the skin with a quick thrust.

(Before administering an injection of vaccine, it is not necessary to aspirate, i.e., to pull back on the syringe plunger after needle insertion.‡)

Multiple injections given in the same extremity should be separated by a minimum of 1", if possible.

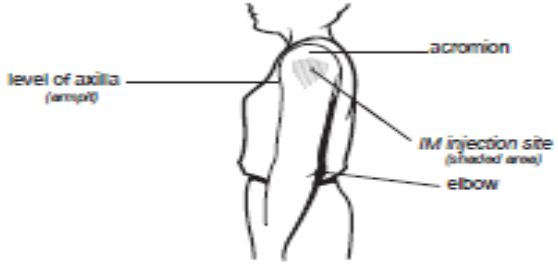


‡CDC. "ACIP General Recommendations on Immunization" at www.immunize.org/acip

IM site for infants and toddlers

Insert needle at a 90° angle into the anterolateral thigh muscle.

IM site for children and adults



Insert needle at a 90° angle into thickest portion of deltoid muscle — above the level of the axilla and below the acromion.

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

www.immunize.org/catg.d/p2020.pdf • Item #P2020 (10/12)

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http://www.immunize.org/catg.d/p2020.pdf

Intramuscular and Subcutaneous Routes Techniques Job Aid - Adults

How to Administer IM and SC Vaccine Injections to Adults

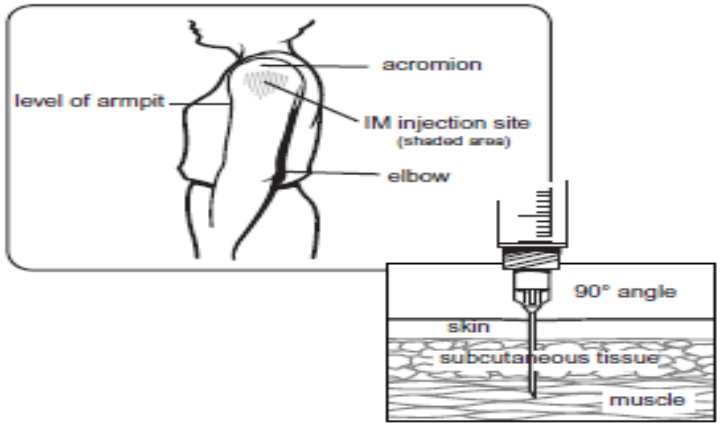
Intramuscular (IM) Injections

Administer these vaccines via IM route
Tetanus, diphtheria (Td), or with pertussis (Tdap); hepatitis A; hepatitis B; human papillomavirus (HPV); trivalent inactivated influenza (TIV); pneumococcal conjugate (PCV13); and quadrivalent meningococcal conjugate (MCV4). Administer polio (IPV) and pneumococcal polysaccharide vaccine (PPSV23) either IM or SC.

Injection site
Give in the central and thickest portion of the deltoid—above the level of the armpit and below the acromion (see the diagram).

Needle size
22–25 gauge, 1–1½" needle *(see note at right)*

Needle insertion
- Use a needle long enough to reach deep into the muscle.
- Insert the needle at a 90° angle to the skin with a quick thrust.
- Separate two injections given in the same deltoid muscle by a minimum of 1".



*Note: A ⅝" needle is sufficient in adults weighing less than 130 lbs (<60 kg) for IM injection in the deltoid muscle **only** if the subcutaneous tissue is not bunched and the injection is made at a 90-degree angle; a 1" needle is sufficient in adults weighing 130–152 lbs (60–70 kg); a 1–1½" needle is recommended in women weighing 152–200 lbs (70–90 kg) and men weighing 152–260 lbs (70–118 kg); a 1½" needle is recommended in women weighing more than 200 lbs (90 kg) or men weighing more than 260 lbs (more than 118 kg).*

Subcutaneous (SC) Injections

http://www.immunize.org/catg.d/p2020a.pdf

Intradermal, Intranasal, and Oral Routes Techniques Job Aid

How to Administer Intradermal, Intranasal, and Oral Vaccinations

While most vaccines are administered by either intramuscular or subcutaneous injection, there are several vaccines that are administered through other means. These include the intradermal route, the intranasal route, and the oral route. Here are some simple instructions to use as a guide. Complete information is available in the package inserts and can also be obtained at www.immunize.org/packageinserts.

Intradermal (ID) administration

Fluzone by sanofi pasteur, Intradermal Inactivated Influenza Vaccine

1 Gently shake the microinjection system before administering the vaccine.

2 Hold the system by placing the thumb and middle finger on the finger pads; the index finger should remain free.

3 Insert the needle perpendicular to the skin, in the region of the deltoid, in a short, quick movement.

4 Once the needle has been inserted, maintain light pressure on the surface of the skin and inject using the index finger to push on the plunger. Do not aspirate.

5 Remove the needle from the skin. With the needle directed away from you and others, push very firmly with the thumb on the plunger to activate the needle shield. You will hear a click when the shield extends to cover the needle.

6 Dispose of the applicator in a sharps container.

Intranasal (IN) administration

FluMist by MedImmune, Live Attenuated Influenza Vaccine

1 FluMist (LAIV) is for intranasal administration only. Do not inject FluMist.

2 Remove the rubber tip protector. Do not remove the dose-divider clip at the other end of the sprayer.

3 With the patient in an upright position (i.e., head not tilted back), place the tip just inside the nostril to ensure LAIV is delivered into the nose. The patient should breathe normally.

4 With a single motion, depress the plunger as rapidly as possible until the dose-divider clip prevents you from going further.

5 Pinch and remove the dose-divider clip from the plunger.

6 Place the tip just inside the other nostril, and with a single motion, depress plunger as rapidly as possible to deliver the remaining vaccine.

7 Dispose of the applicator in a sharps container.

Oral administration: Rotavirus vaccines

Rotateq by Merck

1 Tear open the pouch and remove the dosing tube. Clear the fluid from the dispensing tip by holding the tube vertically and tapping the cap.

2 Open the dosing tube in two easy motions:
a) Puncture the dispensing tip by screwing cap **clockwise** until it becomes tight.
b) Remove the cap by turning it **counterclockwise**.

3 Administer the dose by gently squeezing liquid into infant's mouth toward the inner cheek until dosing tube is empty. (A residual drop may remain in the tip of the tube.)

4 Discard the empty tube and cap in an approved biological waste container according to local regulations.

Note: If for any reason, an incomplete dose is administered (e.g., infant spits or regurgitates the vaccine), a replacement dose is not recommended.

Rotarix by GlaxoSmithKline

1 Remove the cap of the vial and push the transfer adapter onto the vial (lyophilized vaccine).

2 Shake the diluent in the oral applicator (white, turbid suspension). Connect the oral applicator to the transfer adapter.

3 Push the plunger of the oral applicator to transfer the diluent into the vial. The suspension will appear white and cloudy.

4 Withdraw the vaccine into the oral applicator.

5 Twist and remove the oral applicator from the vial.

6 Administer the dose by gently placing the applicator plunger into the infant's mouth toward the inner cheek and gently expelling the contents until the applicator is empty.

7 Discard the empty vial, cap, and oral applicator in an approved biological waste container according to local regulations.

Note: If for any reason, an incomplete dose is administered (e.g., the infant spits or regurgitates the vaccine), a replacement dose is not recommended.

immunization action coalition

Technical content reviewed by the Centers for Disease Control and Prevention

http://www.immunize.org/catg.d/p2021.pdf

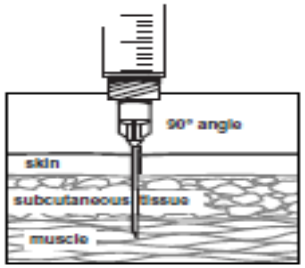
Intramuscular, Intradermal, and Intranasal Influenza Vaccine Routes Techniques Job Aid

How to administer intramuscular, intradermal, and intranasal influenza vaccines

Intramuscular injection
Inactivated Influenza Vaccines (IIV), including recombinant hemagglutinin influenza vaccine (RIV)

1. Use a needle long enough to reach deep into the muscle. Infants age 6 through 11 mos: 1"; 1 through 2 yrs: 1–1¼"; children and adults 3 yrs and older: 1–1½".
2. With your left hand*, bunch up the muscle.
3. With your right hand*, insert the needle at a 90° angle to the skin with a quick thrust.
4. Push down on the plunger and inject the entire contents of the syringe. There is no need to aspirate.
5. Remove the needle and simultaneously apply pressure to the injection site with a dry cotton ball or gauze. Hold in place for several seconds.
6. If there is any bleeding, cover the injection site with a bandage.
7. Put the used syringe in a sharps container.

*Use the opposite hand if you are left-handed.



Intradermal administration
Inactivated Influenza Vaccine (IIV)

1. Gently shake the microinjection system before administering the vaccine.
2. Hold the system by placing the thumb and middle finger on the finger pads; the index finger should remain free.

3. Insert the needle perpendicular to the skin, in the region of the deltoid, in a short, quick movement.
4. Once the needle has been inserted, maintain light pressure on the surface of the skin and inject using the index finger to push on the plunger. Do not aspirate.

5. Remove the needle from the skin. With the needle directed away from you and others, push very firmly with the thumb on the plunger to activate the needle shield. You will hear a click when the shield extends to cover the needle.

6. Dispose of the applicator in a sharps container.

Intranasal administration
Live Attenuated Influenza Vaccine (LAIV)

1. FluMist (LAIV) is for intranasal administration only. Do not inject FluMist.
2. Remove rubber tip protector. Do not remove dose-divider clip at the other end of the sprayer.
3. With the patient in an upright position (i.e., head not tilted back), place the tip just inside the nostril to ensure LAIV is delivered into the nose. The patient should breathe normally.

4. With a single motion, depress plunger as rapidly as possible until the dose-divider clip prevents you from going further.
5. Pinch and remove the dose-divider clip from the plunger.

6. Place the tip just inside the other nostril, and with a single motion, depress plunger as rapidly as possible to deliver the remaining vaccine.
7. Dispose of the applicator in a sharps container.

IMMUNIZATION ACTION COALITION 1573 Selby Avenue • St. Paul, MN 55104 • 651-647-9009 • www.immunize.org • www.vaccineinformation.org

Technical content reviewed by the Centers for Disease Control and Prevention
www.immunize.org/catg.d/p2024.pdf • Item #P2024 (9/13)

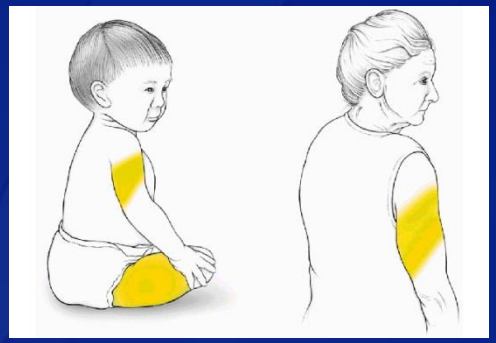
http://www.immunize.org/catg.d/p2021.pdf

Right Site

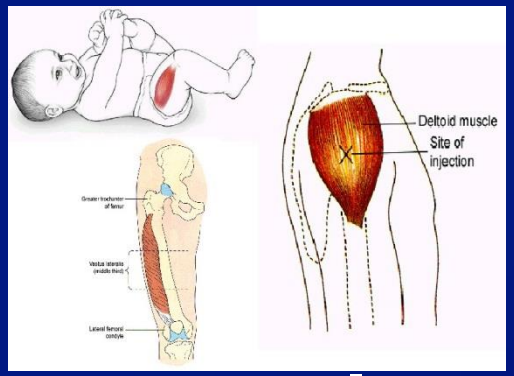
Mouth

Nose

Fluzone
ID site



Fatty tissue



Muscle

Common Site Errors

Too High

NEVER

Too Low

Right Dosage, Route, Site, and Needle Size Job Aid

Administering Vaccines: Dose, Route, Site, and Needle Size

Vaccine	Dose	Route
Diphtheria, Tetanus, Pertussis (DTaP, DT, Tdap, Td)	0.5 mL	IM
***Haemophilus influenzae* type b** (Hib)	0.5 mL	IM
Hepatitis A (HepA)	≤18 yrs; 0.5 mL ≥19 yrs; 1.0 mL	IM
Hepatitis B (HepB) **Persons 11–15 yrs may be given Recombivax HB (Merck) 1.0 mL adult formulation on a 2-dose schedule.*	<19yrs: 0.5 mL ≥20 yrs: 1.0 mL	IM
Human papillomavirus (HPV)	0.5 mL	IM
Influenza, live attenuated (LAIV)	0.2 mL	Intranasal spray
Influenza, trivalent inactivated (TIV)	6-35 mos: 0.25 mL ≥3 yrs: 0.5 mL	IM
TIV: Fluzone intradermal (18–64 yrs)	0.1 mL	ID
Measles, Mumps, Rubella (MMR)	0.5 mL	SC
Meningococcal – conjugate (MCV)	0.5 mL	IM
Meningococcal – polysaccharide (MPSV)	0.5 mL	SC
Pneumococcal conjugate (PCV)	0.5 mL	IM
Pneumococcal polysaccharide (PPSV)	0.5 mL	IM or SC
Polio, inactivated (IPV)	0.5 mL	IM or SC

Injection Site and Needle Size

Subcutaneous (SC) Injection
Use a 23–25 gauge needle. Choose the injection site that is appropriate to the person's age and body mass.

Age	Needle Length	Injection Site
Infants (1–12 mos)	⅝"	Fatty tissue over anterolateral thigh muscle
Children 12 mos or older, adolescents, and adults	⅝"	Fatty tissue over anterolateral thigh muscle or fatty tissue over triceps

Intramuscular (IM) Injection
Use a 22–25 gauge needle. Choose the injection site and needle length appropriate to the person's age and body mass.

Age	Needle Length	Injection Site
Newborns (1st 28 days)	⅝"*	Anterolateral thigh muscle
Infants (1–12 mos)	1"	Anterolateral thigh muscle
Toddlers (1–2 yrs)	1–1¼" ⅝–1"*	Anterolateral thigh muscle or deltoid muscle of arm
Children & teens (3–18 years)	⅝–1"* 1"–1¼"	Deltoid muscle of arm or anterolateral thigh muscle

http://www.immunize.org/catg.d/p3085.pdf

Right Dosage, Route, Site, and Needle Size Job Aid (Adults)

Administering Vaccines to Adults: Dose, Route, Site, and Needle Size

Vaccine	Dose	Route
Hepatitis A (HepA)	≤18 yrs: 0.5 mL	IM
	≥19 yrs: 1.0 mL	
Hepatitis B HepB)	≤19 yrs: 0.5 mL	IM
	≥20 yrs: 1.0 mL	
HepA-HepB (Twinrix)	≥18 yrs: 1.0 mL	IM
Human papillomavirus (HPV)	0.5 mL	IM
Influenza, live attenuated (LAIV)	0.2 mL (0.1 mL into each nostril)	Intranasal spray
Influenza, trivalent inactivated (TIV), including Fluzone High-Dose	0.5 mL	IM
Influenza (TIV) Fluzone Intradermal, for ages 18 through 64 years	0.1 mL	Intradermal
Measles, Mumps, Rubella (MMR)	0.5 mL	SC
Meningococcal, conjugate (MCV4)	0.5 mL	IM

http://www.immunize.org/catg.d/p3084.pdf

Right Documentation

- **Patient's immunization record**
- **Patients medical record**
- **Immunization registry (imMTrax)**
- **Documentation requirements include:**
  - Date of administration
  - Vaccine manufacturer
  - Vaccine lot number
  - Name and title of who administered the vaccine
  - Facility address where permanent record is kept
  - Vaccine Information Statement (VIS)
    - Date printed on the VIS
    - Date VIS given to patient or parent/guardian

ACIP Vaccine Abbreviations Job Aid

Advisory Committee on Immunization Practices (ACIP)

Vaccines Home
Vaccines & Immunizations

- ACIP Home Page
- Recommendations
- Meetings
- Committee Information
  - Guidance
    - Recommendations for Pregnant and Breastfeeding Women
    - Economics Studies
    - ACIP Abbreviations for Vaccines
  - Charter
  - Members
  - Structure, Role and Procedures of ACIP
- About

Related Links

- Immunization Schedules
- VFC Resolutions
- Status of Licensure and Recommendations for New Vaccines

Vaccines Home > ACIP Home Page > Committee Information > Guidance

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ACIP Abbreviations for Vaccines

Printer friendly version of Abbreviations for Vaccines [115 KB, 3 pages]

Abbreviations for Vaccines

Advisory Committee on Immunization Practices
U.S. VACCINE ABBREVIATIONS

Abbreviations for Vaccines Included in the Immunization Schedules for Children, Adolescents, and Adults

Following is a table of standardized vaccine abbreviations, which was developed jointly by staff of the Centers for Disease Control and Prevention, ACIP Work Groups, the editor of the *Morbidity and Mortality Weekly Report (MMWR)*, the editor of *Epidemiology and Prevention of Vaccine-Preventable Diseases* (the "Pink Book"), ACIP members, and liaison organizations to the ACIP.

These abbreviations are intended to provide a uniform approach to vaccine references used in ACIP Recommendations that are published in the *MMWR*, the *Pink Book*, and the American Academy of Pediatrics *Red Book*; and in the U.S. immunization schedules for children, adolescents, and adults.

Updated April 2013

Vaccine	Abbreviation*	Trade Name
Diphtheria, tetanus and pertussis-containing vaccines **P=Pediatric** **A=Adult**		
Diphtheria and tetanus toxoids adsorbed (P)	DT	several manufacturers†
Diphtheria and tetanus toxoids and acellular pertussis	DTaP	Daptacel,

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Contact ACIP

Advisory Committee on Immunization Practices (ACIP)
1600 Clifton Road, N.E., Mailstop A27
Atlanta, GA 30333
1-404-639-8836
acip@cdc.gov

Contact Us:

Centers for Disease Control and Prevention
1600 Clifton Rd
Atlanta, GA 30333
800-CDC-INFO
(800-232-4636)
TTY:
(888) 232-6348
Contact CDC-INFO

http://www.cdc.gov/vaccines/acip/committee/guidance/vac-abbrev.html

What if a Vaccine Error Occurs?

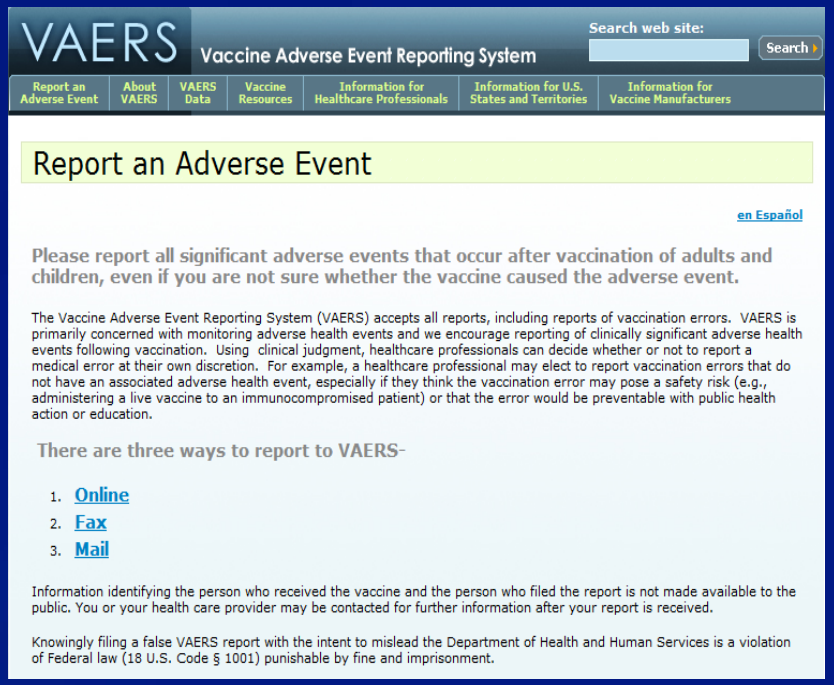
- **Inform the patient/parent of the error**
  - Determine the status of the patient
  - Explain any needed next steps
- **Make sure you know how to "correct" the error**
  - **Contact your local health department, vaccine manufacturer, or nipinfo@cdc.gov for guidance**
- **Record the vaccine as it was given on the vaccine administration record (VAR) and in ASIIS**

Strategies to Prevent Errors

- Establish environment that values reporting and investigating errors as part of risk management and quality improvement
- Promote a "just culture" where staff is willing to report errors trusting that the situation and those involved will be treated fairly
- Error reporting should provide opportunities to discover how errors occur and to share ideas to prevent or reduce those errors without fear of punishment and ridicule

Reporting Vaccination Errors to Vaccine Adverse Event Reporting System (VAERS)

- VAERS accepts all reports
- VAERS encourages reports of clinically significant adverse health events
- Providers are encouraged to report vaccination errors without health events if they believe the error may pose a safety risk



VAERS Vaccine Adverse Event Reporting System

Search web site: Search

Report an Adverse Event | About VAERS | VAERS Data | Vaccine Resources | Information for Healthcare Professionals | Information for U.S. States and Territories | Information for Vaccine Manufacturers

Report an Adverse Event

en Español

Please report all significant adverse events that occur after vaccination of adults and children, even if you are not sure whether the vaccine caused the adverse event.

The Vaccine Adverse Event Reporting System (VAERS) accepts all reports, including reports of vaccination errors. VAERS is primarily concerned with monitoring adverse health events and we encourage reporting of clinically significant adverse health events following vaccination. Using clinical judgment, healthcare professionals can decide whether or not to report a medical error at their own discretion. For example, a healthcare professional may elect to report vaccination errors that do not have an associated adverse health event, especially if they think the vaccination error may pose a safety risk (e.g., administering a live vaccine to an immunocompromised patient) or that the error would be preventable with public health action or education.

There are three ways to report to VAERS-

1. Online
2. Fax
3. Mail

Information identifying the person who received the vaccine and the person who filed the report is not made available to the public. You or your health care provider may be contacted for further information after your report is received.

Knowingly filing a false VAERS report with the intent to mislead the Department of Health and Human Services is a violation of Federal law (18 U.S. Code § 1001) punishable by fine and imprisonment.

https://vaers.hhs.gov/esub/index

ISMP

Institute for Safe Medication Practices

A Nonprofit Organization Educating the Healthcare Community and Consumers About Safe Medication Practices

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Reporting a Medication or Vaccine Error or Hazard to ISMP

Thank you for your willingness to report a medication or vaccine error or hazard to ISMP.

If you are a **CONSUMER**, please click on the orange button below if you are ready to report an error or hazard.

FOR CONSUMERS: Report a Medication Error

If you are a **HEALTHCARE PRACTITIONER**, you can report the error or hazard to ISMP using one of two secure methods:

1) Report to the ISMP National Medication Errors Reporting Program (MERP) or the ISMP National Vaccine Errors Reporting Program (VERP)

These are confidential, voluntary reporting programs operated by ISMP to learn about the causes of medication and vaccine errors. After you submit a report, ISMP staff will follow up with you to ask additional questions to clarify what went wrong and to identify the causes and factors that contributed to the reported event. The report will also be forwarded in confidence to the US Food and Drug Administration (FDA) and, when applicable, to product vendors to inform them about pharmaceutical labeling, packaging, and nomenclature issues that may cause errors by their design. **Your name, contact information, and location will NOT be submitted to FDA or product vendors without your permission, and identifiable information will NOT be disclosed outside of ISMP.**

Click on the appropriate button below if you are ready to report an error or hazard to the ISMP MERP or ISMP VERP.

Report a Medication Error | Report a Vaccine Error

https://www.ismp.org/errorReporting/reportErrortoISMP.aspx

Knowledgeable Staff is Key

- Ensure staff are adequately trained PRIOR to administering vaccines
- Develop a competency-based education program plan for all staff- permanent and temporary

Skills Checklist for Immunization

The Skills Checklist is a self-assessment tool for health care staff who administer immunizations. To complete it, review the competency areas below and the clinical skills, techniques, and procedures outlined for each of them. Score yourself in the Self-Assessment column. If you check **Need to Improve**, you indicate further study, practice, or change is needed. When you check **Meets or Exceeds**, you indicate you believe you are performing at the expected level of competence, or higher.

Supervisors: Use the Skills Checklist to clarify responsibilities and expectations for staff who administer vaccines. When you use it for performance reviews, give staff the opportunity to score themselves in advance. Next, observe their performance as they provide immunizations to several patients and score in the **Supervisor Review** columns. If improvement is needed, meet with them to develop a **Plan of Action** (p. 2) that will help them achieve the level of competence you expect; circle desired actions or write in others.

The DVD "Immunization Techniques: Best Practices with Infants, Children, and Adults" ensures that staff administer vaccines correctly. Order online at www.immunize.org/dvd

		Self-Assessment		Supervisor Review		
Competency	**Clinical Skills, Techniques, and Procedures**	**Need to Improve**	**Meets or Exceeds**	**Need to Improve**	**Meets or Exceeds**	**Plan of Action***
A. Patient/Parent Education	1. Welcomes patient/family, establishes rapport, and answers any questions.					
	2. Explains what vaccines will be given and which type(s) of injection will be done.					
	3. Accommodates language or literacy barriers and special needs of patient/parents to help make them feel comfortable and informed about the procedure.					
	4. Verifies patient/parents received the Vaccine Information Statements for indicated vaccines and had time to read them and ask questions.					
	5. Screens for contraindications. (MA: score NA-not applicable- if this is MD function.)					
	6. Reviews comfort measures and after care instructions with patient/parents, inviting questions.					
B. Medical Protocols	1. Identifies the location of the medical protocols (i.e. immunization protocol, emergency protocol, reference material).					
	2. Identifies the location of the epinephrine, its administration technique, and clinical situations where its use would be indicated.					
	3. Maintains up-to-date CPR certification.					
	4. Understands the need to report any needlestick injury and to maintain a sharps injury log.					
C. Vaccine Handling	1. Checks vial expiration date. Double-checks vial label and contents prior to drawing up.					
	2. Maintains aseptic technique throughout.					
	3. Selects the correct needle size for IM and SC.					
	4. Shakes vaccine vial and/or reconstitutes and mixes using the diluent supplied. Inverts vial and draws up correct dose of vaccine. Rechecks vial label.					
	5. Labels each filled syringe or uses labeled tray to keep them identified.					
	6. Demonstrates knowledge of proper vaccine handling, e.g. protects MMR from light, logs refrigerator temperature.					

Adapted from California Department of Public Health • Immunization Branch

http://www.immunize.org/catg.d/p7010.pdf

Involve Staff in Selection of Products to Be Used

CDC Safe Injection Practices

CDC Home

Centers for Disease Control and Prevention
CDC 24/7: Saving Lives. Protecting People.™

SEARCH

A-Z Index A B C D E F G H I J K L M N O P Q R S T U V W X Y Z #

Injection Safety

- **Injection Safety**
- CDC's Role
- CDC Statement
- Information for Providers
- Information for Patients
- Preventing Unsafe Injection Practices
- ▶**Safe Injection Practices**
  - CDC Clinical Reminder: Spinal Injection Procedures
- Infection Prevention during Blood Glucose Monitoring and Insulin Administration
- Recent Publications
- Recent Meetings
- The One & Only Campaign

Related Links

- One & Only Campaign
- HICPAC
- 2007 Guideline for

Injection Safety > Preventing Unsafe Injection Practices

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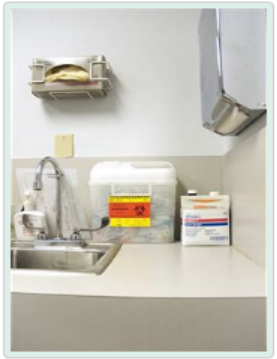
Safe Injection Practices to Prevent Transmission of Infections to Patients

Download the complete 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings [PDF - 3.80 MB]



III.A.1.b. Safe Injection Practices The investigation of four large outbreaks of HBV and HCV among patients in ambulatory care facilities in the United States identified a need to define and reinforce safe injection practices 453. The four outbreaks occurred in a private medical practice, a pain clinic, an endoscopy clinic, and a hematology/oncology clinic. The primary breaches in infection control practice that contributed to these outbreaks were 1) reinsertion of used needles into a multiple-dose vial or solution container (e.g., saline bag) and 2) use of a single needle/syringe to administer intravenous medication to multiple patients. In one of these outbreaks, preparation of medications in the same workspace where used needle/syringes were dismantled also may have been a contributing factor. These and other outbreaks of viral hepatitis could have been prevented by adherence to basic principles of aseptic technique for the preparation and administration of parenteral medications 453, 454. These include the use of a sterile, single-use, disposable needle and syringe for each injection given and prevention of contamination of injection equipment and medication.

Whenever possible, use of single-dose vials is preferred over multiple-dose vials, especially when medications will be administered to multiple patients. Outbreaks related to unsafe injection practices

Contact Us:

Centers for Disease Control and Prevention
1600 Clifton Rd
Atlanta, GA 30333

800-CDC-INFO
(800-232-4636)
TTY: (888) 232-6348

Contact CDC–INFO

http://www.cdc.gov/injectionsafety/IP07_standardPrecaution.html

NCIRD Vaccine Administration

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Centers for Disease Control and Prevention

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Vaccines & Immunizations

Vaccines Home > Recommendations and Guidelines > Vaccine Administration

Vaccine-Related Topics

- Immunization Schedules
- Recommendations and Guidelines
  - Advisory Committee on Immunization Practices (ACIP)
  - Vaccine Storage & Handling
  - Vaccine Administration
  - Recalled Vaccines
  - Reminder Systems and Strategies for Increasing Vaccination Rates
- Vaccines & Preventable Diseases
- Basics and Common Questions
- Vaccination Records
- Vaccine Safety and Adverse Events
- For Travelers
- For Specific Groups of People
- Campaign Materials

Additional Resources

- Publications

Recommendations and Guidelines:

Vaccine Administration

For Health Professionals:

- Guidelines
- Screening and Checklists
- Reference Tables
- Comforting Techniques

Guidelines

- Vaccine Administration Guidelines [2 MB, 15 pages]
  from Pink Book Appendix (includes pictures of sites)
- Vaccines with Diluents: How to Use Them [1 page]
  Contains a chart that lists the vaccines that require reconstitution with a diluent before they can be administered including maximum time allowed between reconstituting each vaccine and having to discard it. Plus the general steps to follow when reconstituting vaccines.
- It's Federal Law - use of VISs and more in Pink Book appendix E [1 MB, 10 pages]
  Appendix includes instructions for use of Vaccine Information Statements, how to get VISs, questions and answers, etc.
- Dosage, Route, Site:
  - All ages: Dose, Route, Site, and Needle Size [1 page]
  - Adults: Dose, Route, Site, Needle Size, and Preparation [1 page]
    How to administer IM and SC Injections to Adults [1 page]

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Glossary / Acronyms
Site Map

Quick Links

- School Requirements
  not linked yet
- Vaccine & Acronyms/Abbrev.

Related Pages

- Immunization Schedules
- Contraindications
- Vaccine Information Statements
- Vaccine Price Lists
- VFC Vaccine Prices

http://www.cdc.gov/vaccines/recs/vac-admin/default.htm

Medical Assistants Resources and Training on Immunization

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- Vaccines For Specific Diseases
- Patient Education
- Recordkeeping
- Safety
- Schedules
- Storage & Handling
- General Information

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In The Spotlight

Keys to Storing and Handling Your Vaccine Supply
A new video featuring recommended best practices. CE available!

Vaccine Administration

Appropriate vaccine administration is a critical component of a successful immunization program. Proper vaccine administration helps ensure safety and effectiveness. Learn how to select and prepare vaccines, and administer vaccines.

Training / Education:

Web-Based

Preparing Vaccines: EZIZ
Learn to select and prepare vaccines, and identify expired vaccines.
certificate of completion

Administering Vaccines: EZIZ
Learn to identify correct needle lengths, insertion angles and injection sites, and administer injections
certificate of completion

DVD

Resources:

Websites

Vaccine Administration
Explore CDC resources for vaccine administration and injection safety

Injection Safety
Explore CDC resources for injection safety

Safety Information for Providers
Examine CDC resources for vaccine providers

Preventing Unsafe Injection Practices
Learn about CDC guidelines and recommendations for preventing unsafe injection practices

http://marti-us.org/stage_2/vaccine_administration.shtml

Immunization Action Coalition Job Aids

IAC Home | Handouts | Clinic Resources | Administering Vaccines

Handouts: Clinic Resources

Administering Vaccines

- Administering Vaccines
- Documenting Vaccination
- Medical Management
- Parent Handouts
- Patient Schedules
- Questions and Answers
- Recommendations
- Screening Questionnaires
- Standing Orders
- Storage and Handling
- Supplies Checklist

Administering Vaccines: Dose, route, site, and needle size
One-page reference table [#P3085]

Administering Vaccines to Adults: Dose, route, site, and needle size
One-page reference table [#P3084]

Current Dates of Vaccine Information Statements (VISs)
Print and cut out up to four charts (4" x 5.5") of current VIS dates for posting around the clinic and work place [#P2029]

Guides for determining the number of doses of influenza vaccine to give to children ages 6 months through 8 years during the 2012–2013 influenza season
This resource provides guides for determining the number of doses of influenza vaccine to give to children ages 6 months through 8 years during the 2012–13 influenza season [#P3093]

Guide to contraindications and precautions to commonly used vaccines
Two-page reference table listing contraindications and precautions [#P3072A]

Guide to contraindications and precautions to commonly used vaccines in adults
One-page table listing contraindications and precautions [#P3072]

Hepatitis A and B vaccines… be sure your patient gets the correct dose!
Recommended child and adult dosages of licensed hepatitis A and B vaccines [#P2081]

How to administer IM and SC injections
Two-sided information sheet with illustrations [#P2020]

How to administer IM and SC vaccine injections to adults
One-page information sheet with illustrations [#P2020A]

How to administer intramuscular, intradermal, and intranasal influenza vaccines
This piece is for providers, and shows how to administer intramuscular, intradermal, and intranasal influenza vaccines [P2024]

IAC Quiz #1: Immunization

http://www.immunize.org/handouts/administering-vaccines.asp

Consider Using Standing Orders

Standing Orders for Administering Varicella Vaccine to Children & Teens

Purpose: To reduce morbidity and mortality from varicella (chickenpox) by vaccinating all children and teens who meet the criteria established by the Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices.

Policy: Under these standing orders, eligible nurses and other healthcare professionals (e.g., pharmacists), where allowed by state law, may vaccinate children and teens who meet any of the criteria below.

Procedure

1. Identify children and teens ages 12 months and older in need of vaccination against varicella. *(Note: Because HIV-infected children are at increased risk for morbidity from varicella and herpes zoster (shingles), single-antigen varicella vaccine should be considered for HIV-infected children with CD4+ T-lymphocyte percentages ≥15% or for adolescents with CD4+ T-lymphocytes count ≥200 cells/μL.)*
2. Screen all patients for contraindications and precautions to varicella vaccine:
   a. **Contraindications:**
   - a history of a serious reaction (e.g., anaphylaxis) after a previous dose of varicella vaccine or to a varicella vaccine component. For a list of vaccine components, go to www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/excipient-table-2.pdf.
   - pregnant now or may become pregnant within 1 month
   - having any malignant condition, including blood dyscrasias, leukemia, lymphomas of any type, or other malignant neoplasms affecting the bone marrow or lymphatic systems
   - receiving high-dose systemic immunosuppressive therapy (e.g., two weeks or more of daily recipt of 20 mg or more [or 2 mg/kg body weight or more] of prednisone or equivalent)
   - family history of congenital or hereditary immunodeficiency in first-degree relatives (e.g., parents, siblings) unless the immune competence of the potential vaccine recipient has been clinically substantiated or verified by a laboratory
   - a child with CD4+ T-lymphocyte percentages <15% or an adolescent with CD4+ T-lymphocytes count <200 cells/μL
   - for combination MMRV only, primary or acquired immunodeficiency, including immunosuppression associated with AIDS or other clinical manifestations of HIV infections, cellular immunodeficiencies, hypogammaglobulinemia, and dysgammaglobulinemia.

   b. **Precautions:**
   - recent receipt (within the previous 11 months) of antibody-containing blood product (specific interval depends on product)
   - moderate or severe acute illness with or without fever
3. Provide all patients (parent/legal representative) with a copy of the most current federal Vaccine Information Statement (VIS). You must document, in the patient's medical record or office log, the publication date of the VIS and the date it was given to the patient (parent/legal representative). Provide non-English speaking patients with a copy of the VIS in their native language, if available; these can be found at www.immunize.org/vis.
4. Provide routine vaccination with varicella vaccine at ages 12–15 months and at 4–6 years. Administer 0.5 mL varicella vaccine subcutaneously (23–25g, 5/8" needle) in the posterolateral fat of the upper arm for children and teens.
5. For children and teens who have not received two doses of varicella vaccine (generally given at the ages specified in #4), give a dose at the earliest opportunity and then schedule a second dose, if needed. Observe minimum intervals of 12 weeks between doses for children ages 12 years or younger and 4 weeks between doses for teens 13 years and older.
6. Document each patient's vaccine administration information and follow up in the following places:
   a. **Medical chart:** Record the date the vaccine was administered, the manufacturer and lot number, the vaccination site and route, and the name and title of the person administering the vaccine. If vaccine was not given, record the reason(s) for non-receipt of the vaccine (e.g., medical contraindication, patient refusal).
   b. **Personal immunization record card:** Record the date of vaccination and the name/location of the administering clinic.
7. Be prepared for management of a medical emergency related to the administration of vaccine by having a written emergency medical protocol available, as well as equipment and medications.
8. Report all adverse reactions to varicella vaccine to the federal Vaccine Adverse Event Reporting System (VAERS) at www.vaers.hhs.gov or by calling (800) 822-7967. VAERS report forms are available at www.vaers.hhs.gov.

This policy and procedure shall remain in effect for all patients of the _____ until rescinded or until_____ (date).
(name of practice or clinic)

Medical Director's signature: _____ Effective date: _____

For standing orders for other vaccines, go to www.immunize.org/standing-orders

Technical content reviewed by the Centers for Disease Control and Prevention, July 2008.

www.immunize.org/catg.d/p3080a.pdf • Item #P3080a (7/08)

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

http://www.immunize.org/standing-orders/

Provide Ongoing Training and Education

Shop IAC: Immunization Techniques DVD

Every practice should have this award winning, "how-to" training video

DVD: Immunization Techniques

Product Number: D2021

Date Published: 2010

Description:

Revised in 2010 by the California Department of Public Health, *Immunization Techniques: Best Practices with Infants, Children, and Adults* focuses on the skills and techniques needed for vaccine administration. Every organization that administers vaccine should have a copy of this comprehensive educational program. It can be used for training and orientation, as well as a refresher for more experienced staff. This DVD replaces the 2001 version, *Immunization Techniques: Safe Effective Caring.*

Content Includes:

- Injectable, oral, and nasal vaccines
- Selecting, preparing, and administering vaccines
- Documenting immunizations
- Patient education and comfort
- Staff safety and training
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http://www.immunize.org/dvd/

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Frequently Asked Questions

EZIZ Training

Find out more about each lesson below or **start lessons**.

NEW

Vaccine Inventory Management

Conducting a Vaccine Inventory (19 min.)
Identify vaccine brand name and packaging;
Enter lot numbers, expiration dates,
and total doses on hand on *VFC Inventory Form* for all VFC vaccines

Vaccine Administration

Preparing Vaccines (25 min.)
Select vaccines based on physicians' orders;
Identify expired vaccines;
Mix, reconstitute, and draw up vaccines

Administering Vaccines (16 min.)
Identify correct needle lengths, insertion angles, and injection sites for intramuscular (IM) and subcutaneous (SC) injections;
Administer IM and SC injections

Storage and Handling

Storing Vaccines (20 min.)
Prepare refrigerators and freezers for vaccine storage;
Store vaccines in refrigerators and freezers;
Safeguard refrigerator and freezer power supplies

Monitoring Refrigerator Temperatures (17 min.)
Record acceptable temperatures;
Record unacceptable temperatures and take action

Monitoring Freezer Temperatures (15 min.)
Record acceptable temperatures;
Record unacceptable temperatures and take action

EZIZ lessons are based on California VFC program requirements and best practices. View the US Map for links to other states' immunization programs and protocols.

Resources

For Trainers

- EZIZ Promo Flyer
- EZIZ Quick-start Cards

For Provider Offices

- CAIR Training
- Vaccine Administration Materials
- Storage and Handling Materials
- VFC Forms
- Flu and Disease Prevention
- For Staff and Patients
- Training by Other Organizations

Screening for Contraindications & Precautions

CDC Home

Centers for Disease Control and Prevention
CDC 24/7: Saving Lives. Protecting People.™

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  - **Vaccine Administration**
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  - Reminder Systems and Strategies for Increasing Vaccination Rates
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- For Travelers

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Vaccine Contraindications and Precautions

Recommendations and Guidelines

For easy reference to vaccine contraindications and precautions, consult the links below. These charts which were originally excerpted from the ACIP General Recommendations (January 28, 2011) have since publication been updated to include changes to any vaccine recommendations as of October 2013.

- For **childhood** vaccines: Contraindications and Precautions to Commonly Used Vaccines
- For **adult** vaccines: Contraindications and Precautions for Adults Only
- Conditions Commonly **Misperceived as Contraindications** to Vaccination

MMWR, General Recommendations on Immunizations
(Jan 28, 2011, Vol. 60, No. RR-2) NOTE: The links to the charts have been updated with changes to recommendations since publication of these general recommendations.

Other CDC Contraindications Materials

- Pink Book's Chapter on General Recommendations
  Contraindications and Precautions to Vaccination (see page 16)
  Invalid Contraindications to Vaccination (see page 23)
  Screening for Contraindications and Precautions to Vaccination (see page 27)

Related Resources

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1600 Clifton Rd
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800-CDC-INFO
(800-232-4636)
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(888) 232-6348
Contact CDC-INFO

http://www.cdc.gov/vaccines/recs/vac-admin/contraindications.htm

Impact of Vaccination Errors

- **Patients and parents have decreased confidence in**
  - Healthcare providers and system
  - Vaccines
- **Increased costs**
  - Revaccination if necessary
  - Adverse health events
  - Staff time

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