

Types of Vaccine Administration Errors Communicated to IAC January 2015–June 2016

IZCoalitions webinar, October 6, 2016

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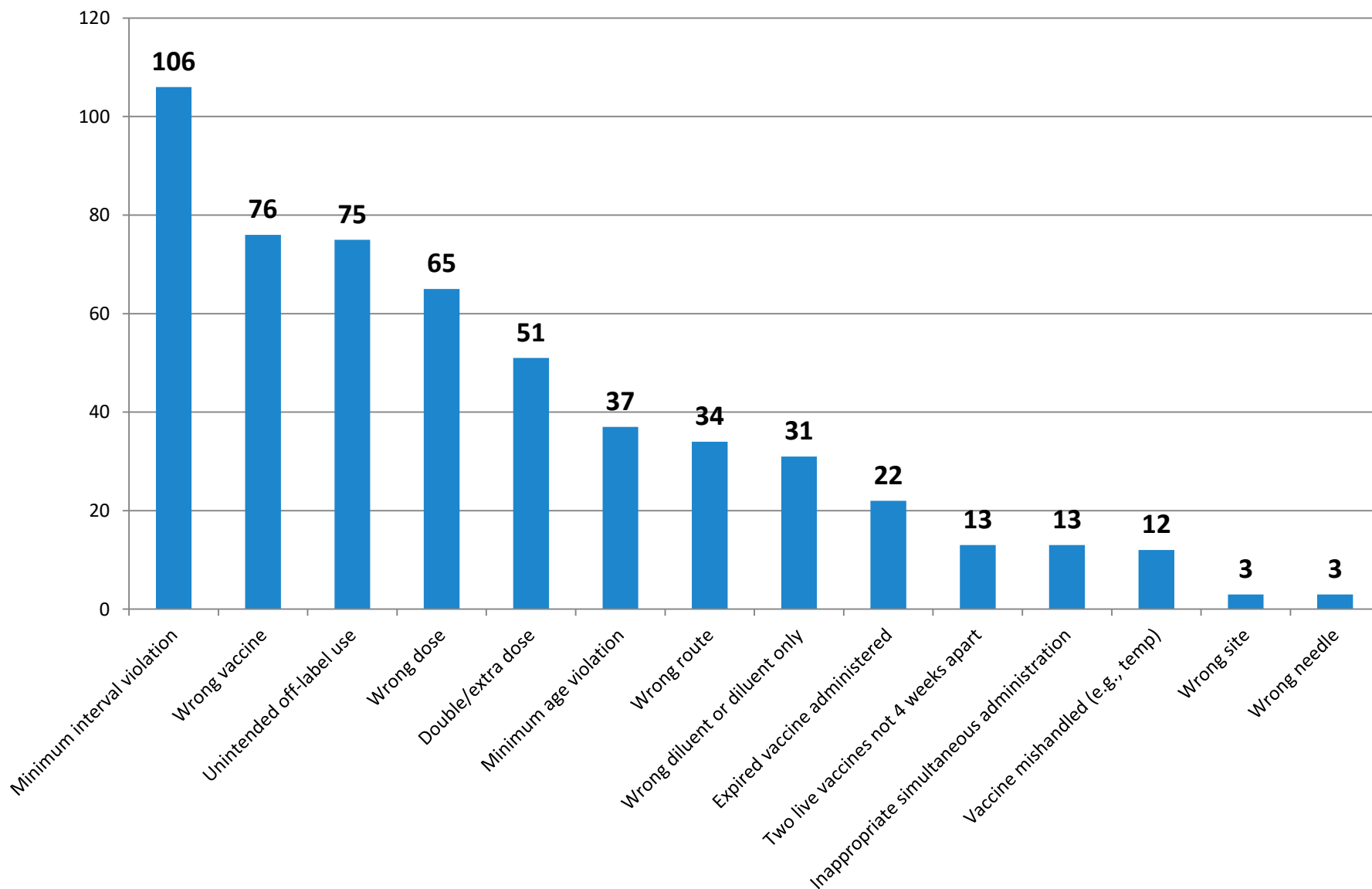
CONSULTANT, IMMUNIZATION ACTION COALITION

Background

- Healthcare professionals and members of the public can contact IAC by writing to admin@immunize.org.
- I answer ~200–300 such emails each month, with some help from other IAC staff and consultants. Also refer people to nipinfo@cdc.gov.
- It appears that more errors are being made (IZ schedule more complex, additional available products, ‘alternative schedules,’ more recommended adult vaccines, etc.) In addition, some types of errors that might have gone undetected in the past are now caught by state immunization information systems.

From January 2015 through June 2016, IAC received questions about approximately **540 medical errors** related to vaccination, including errors in vaccine storage and handling, administration, scheduling, and documentation.

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The result of making such errors can be serious, including harm to the vaccinee from a side effect or vulnerability to disease, inconvenience to the parent/patient and perhaps ill will, unreimbursed cost to the provider, and loss of trust in the provider with possible negative publicity or even legal action. Avoiding such errors benefits everyone.

Examples from healthcare providers

- "What are the risks if a child <6 months receives an influenza vaccine?"
- "Somehow, a patient in my clinic received their 3rd Hepatitis B vaccine 1 month after the second. What should I do?"
- "What are the recommendations for adults who mistakenly received pediatric doses of hepatitis B vaccine instead of the adult doses?"
- "A Tdap was given to a 2-year-old. Is it necessary to repeat the dose or does it count as the 4th DTaP dose?"
- "If a child received the diluent only of the Pentacel does that mean they received DTaP and polio? Will they need to come back for Hib? How soon can this be given?"

Example from parent

“Hi! I was referred to you by a friend because of what happened to us today. I took my twelve month old son in for his well child exam and immunizations and a little while after we left the doctors office I got a call that they had given him the wrong immunizations. They gave him the six month shots and rotovirus oral medicine again instead of the twelve month shots. They said it "won't do any harm" and that we can catch up at his 15 month appt but I really want some non-biased thoughts on this. It's been a few hours now and my baby boy is extra, extra cranky, very sleepy, and not wanting to nurse. I guess I'm just a worried mama and wanting to seek out some more info on the subject of extra vaccines.”

ERROR: Not using a screening checklist for contraindications and precautions to vaccination

Avoiding this error: Use a reliable screening tool consistently to avoid either 1) giving a vaccine to a patient for whom it is contraindicated (a serious, potentially life-threatening situation) or 2) missing opportunities to vaccinate because of a false contraindication (which can also be life-threatening, as it can leave a patient exposed to a vaccine-preventable disease).

Screening Checklist for Contraindications to Vaccines for Adults

PATIENT NAME _____
DATE OF BIRTH _____
month day year

For patients: The following questions will help us determine which vaccines you may be given today. If you answer "yes" to any question, it does not necessarily mean you should not be vaccinated. It just means additional questions must be asked. If a question is not clear, please ask your healthcare provider to explain it.

	yes	no	don't know
1. Are you sick today?	☐	☐	☐
2. Do you have allergies to medications, food, a vaccine component, or latex?	☐	☐	☐
3. Have you ever had a serious reaction after receiving a vaccination?	☐	☐	☐
4. Do you have a long-term health problem with heart disease, lung disease, asthma, kidney disease, metabolic disease (e.g., diabetes), anemia, or other blood disorder?	☐	☐	☐
5. Do you have cancer, leukemia, HIV/AIDS, or any other immune system problem?	☐	☐	☐
6. In the past 3 months, have you taken medications that affect your immune system, such as prednisone, other steroids, or anticancer drugs; drugs for the treatment of rheumatoid arthritis, Crohn's disease, or psoriasis; or have you had radiation treatments?	☐	☐	☐
7. Have you had a seizure or a brain or other nervous system problem?	☐	☐	☐
8. During the past year, have you received a transfusion of blood or blood products, or been given immune (gamma) globulin or an antiviral drug?	☐	☐	☐
9. For women: Are you pregnant or is there a chance you could become pregnant during the next month?	☐	☐	☐
10. Have you received any vaccinations in the past 4 weeks?	☐	☐	☐

FORM COMPLETED BY _____ DATE _____
FORM REVIEWED BY _____ DATE _____

Did you bring your immunization record card with you? yes ☐ no ☐

It is important for you to have a personal record of your vaccinations. If you don't have a personal record, ask your healthcare provider to give you one. Keep this record in a safe place and bring it with you every time you seek medical care. Make sure your health care provider records all your vaccinations on it.



Technical content reviewed by the Centers for Disease Control and Prevention
Saint Paul, Minnesota • 651-647-9009 • www.immunize.org • www.vaccineinformation.org
www.immunize.org/catg.d/p4065.pdf • Item #I4065 (2/16)

Screening Checklist for Contraindications to Vaccines for Children and Teens

PATIENT NAME _____
DATE OF BIRTH _____
month day year

For parents/guardians: The following questions will help us determine which vaccines your child may be given today. If you answer "yes" to any question, it does not necessarily mean your child should not be vaccinated. It just means additional questions must be asked. If a question is not clear, please ask your healthcare provider to explain it.

	yes	no	don't know
1. Is the child sick today?	☐	☐	☐
2. Does the child have allergies to medications, food, a vaccine component, or latex?	☐	☐	☐
3. Has the child had a serious reaction to a vaccine in the past?	☐	☐	☐
4. Has the child had a health problem with lung, heart, kidney or metabolic disease (e.g., diabetes), asthma, or a blood disorder? Is he/she on long-term aspirin therapy?	☐	☐	☐
5. If the child to be vaccinated is 2 through 4 years of age, has a healthcare provider told you that the child had wheezing or asthma in the past 12 months?	☐	☐	☐
6. If your child is a baby, have you ever been told he or she has had intussusception?	☐	☐	☐
7. Has the child, a sibling, or a parent had a seizure; has the child had brain or other nervous system problems?	☐	☐	☐
8. Does the child have cancer, leukemia, HIV/AIDS, or any other immune system problem?	☐	☐	☐
9. In the past 3 months, has the child taken medications that affect the immune system such as prednisone, other steroids, or anticancer drugs; drugs for the treatment of rheumatoid arthritis, Crohn's disease, or psoriasis; or had radiation treatments?	☐	☐	☐
10. In the past year, has the child received a transfusion of blood or blood products, or been given immune (gamma) globulin or an antiviral drug?	☐	☐	☐
11. Is the child/teen pregnant or is there a chance she could become pregnant during the next month?	☐	☐	☐
12. Has the child received vaccinations in the past 4 weeks?	☐	☐	☐

FORM COMPLETED BY _____ DATE _____
FORM REVIEWED BY _____ DATE _____

Did you bring your immunization record card with you? yes ☐ no ☐

It is important to have a personal record of your child's vaccinations. If you don't have one, ask the child's healthcare provider to give you one with all your child's vaccinations on it. Keep it in a safe place and bring it with you every time you seek medical care for your child. Your child will need this document to enter day care or school, for employment, or for international travel.



Technical content reviewed by the Centers for Disease Control and Prevention
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IAC's related handouts: www.immunize.org/handouts/screening-vaccines.asp
Also available in Spanish, Arabic, Chinese, French, Hmong, Korean, Russian, Turkish, & Vietnamese

See also CDC's Vaccine Contraindications and Precautions web page:
www.cdc.gov/vaccines/hcp/admin/contraindications.html

ERROR: Giving a vaccine dose earlier than is recommended by ACIP

Avoiding this error: Know the minimum intervals for all vaccine series. Keep an easy-to-read immunization schedule handy for staff. If you still aren't sure if a dose will be valid, check with your state immunization program *before* giving it. Attempt to locate old vaccination records by contacting previous healthcare providers and reviewing your state registry.

Recommended and Minimum Ages and Intervals Between Doses of Routinely Recommended Vaccines ^{1,2,3,4}				
Vaccine and dose number	Recommended age for this dose	Minimum age for this dose	Recommended interval to next dose	Minimum interval to next dose
Diphtheria-tetanus-acellular pertussis (DTaP)-1 ⁵	2 months	6 weeks	8 weeks	4 weeks
DTaP-2	4 months	10 weeks	8 weeks	4 weeks
DTaP-3	6 months	14 weeks	6-12 months	6 months ⁶
DTaP-4 ⁵	15-18 months	12 months ⁶	3 years	6 months
DTaP-5	4-5 years	4 years	—	—
Haemophilus influenzae type b (Hib)-1 ^{5,7}	2 months	6 weeks	8 weeks	4 weeks
Hib-2	4 months	10 weeks	8 weeks	4 weeks
Hib-3 ⁸	6 months	14 weeks	6-9 months	8 weeks
Hib-4	12-15 months	12 months	—	—
Hepatitis A (HepA)-1 ⁵	12-23 months	12 months	6-18 months	6 months
HepA-2	≥18 months	18 months	—	—
Hepatitis B (HepB)-1 ⁹	Birth	Birth	4 weeks-4 months	4 weeks
HepB-2	1-2 months	4 weeks	8 weeks-17 months	8 weeks
HepB-3 ⁹	6-18 months	24 weeks	—	—
Herpes zoster (HZV) ¹⁰	≥60 years	60 years	—	—
Human papillomavirus (HPV)-1 ¹¹	11-12 years	9 years	8 weeks	4 weeks
HPV-2	11-12 years (+ 3 months)	9 years (+ 4 weeks)	4 months	12 weeks ¹²
HPV-3 ¹²	11-12 years (+ 6 months)	9 years (+ 24 weeks)	—	—
Influenza, inactivated (IIV) ¹³	≥6 months	6 months ¹⁴	4 weeks	4 weeks
Influenza, live attenuated (LAIV) ¹³	2-49 years	2 years	4 weeks	4 weeks
Measles-mumps-rubella (MMR)-1 ¹⁵	12-15 months	12 months	3-5 years	4 weeks
MMR-2 ¹⁵	4-5 years	13 months	—	—
Meningococcal conjugate (MCV)-1 ¹⁶	11-12 years	6 weeks ¹⁷	4-5 years	8 weeks
MCV-2	16 years	11 years (+ 8 weeks)	—	—
Meningococcal polysaccharide (MPSV4)-1 ¹⁸	—	2 years	5 years	5 years
MPSV4-2	—	7 years	—	—
Pneumococcal conjugate (PCV)-1 ¹	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	—	—
Pneumococcal polysaccharide (PPSV)-1	—	2 years	5 years	5 years
PPSV-2 ¹⁸	—	7 years	—	—
Poliovirus, inactivated (IPV)-1 ¹⁹	2 months	6 weeks	8 weeks	4 weeks
IPV-2	4 months	10 weeks	8 weeks-14 months	4 weeks
IPV-3	6-18 months	14 weeks	3-5 years	6 months
IPV-4 ¹⁹	4-5 years	4 years	—	—
Rotavirus (RV)-1 ²⁰	2 months	6 weeks	8 weeks	4 weeks
RV-2	4 months	10 weeks	8 weeks	4 weeks
RV-3 ²¹	6 months	14 weeks	—	—
Tetanus-diphtheria (Td)	11-12 years	7 years	10 years	5 years
Tetanus-diphtheria-acellular pertussis (Tdap) ²²	≥11 years	7 years	—	—
Varicella (Var)-1 ²³	12-15 months	12 months	3-5 years	12 weeks ²⁴
Var-2 ^{23a}	4-5 years	15 months ²⁵	—	—

Centers for Disease Control and Prevention
Epidemiology and Prevention of Vaccine-Preventable Diseases, 7th Edition

June 2004 / rev. May 2006

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

Summary of Recommendations for Child/Teen Immunization (Age birth through 18 years) (Page 1 of 5)

Vaccine name and route	Schedule for routine vaccination and other guidelines (any vaccine can be given with another, unless otherwise noted)	Schedule for catch-up vaccination and related issues	Contraindications and precautions (mild illness is not a contraindication)
Hepatitis B (HepB) <i>Give IM</i>	- Vaccinate all children age 0 through 18 yrs. - Vaccinate all newborns with monovalent vaccine prior to hospital discharge. Give dose #2 at age 1–2m and the final dose at age 6–18m (the last dose in the infant series should not be given earlier than age 24 wks). After the birth dose, the series may be completed using 2 doses of single-antigen vaccine (ages 1–2m, 6–18m) or up to 3 doses of Comvax (ages 2m, 4m, 12–15m) or with 3 doses of Pediarix (ages 2m, 4m, 6m), which may result in giving a total of 4 doses of hepatitis B vaccine. - If mother is HBsAg-positive: Give the newborn HBIG and dose #1 within 12 hrs of birth; complete series by age 6m. - If mother's HBsAg status is unknown: Give the newborn dose #1 within 12 hrs of birth. If low birth weight (less than 2000 grams), also give HBIG within 12hrs. For infants weighing 2000 grams or more whose mother is subsequently found to be HBsAg positive, give the infant HBIG ASAP (no later than age 7d) and follow HepB immunization schedule for infants born to HBsAg-positive mothers.	- Do not restart series, no matter how long since previous dose. 3-dose series can be started at any age. - Minimum intervals between doses: 4 wks between #1 and #2, 8 wks between #2 and #3, and at least 16 wks between #1 and #3. Special Notes on Hepatitis B Vaccine (HepB) Dosing of HepB: Monovalent vaccine brands are interchangeable. For people age 0 through 19 yrs, give 0.5 mL of either Engerix-B or Recombivax HB. Alternative dosing schedule for unvaccinated adolescents age 11 through 15 yrs: Give 2 doses Recombivax HB 1.0 mL (adult formulation) spaced 4–6m apart. (Engerix-B is not licensed for a 2-dose schedule.)	Contraindication Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. Precautions - Moderate or severe acute illness. - For infants who weigh less than 2000 grams, see ACIP recommendations at www.cdc.gov/mmwr/PDF/rr/rr5416.pdf.
DTaP, DT (Diphtheria, tetanus, acellular pertussis) <i>Give IM</i>	- Give to children at ages 2m, 4m, 6m, 15–18m, and 4–6 yrs. - May give dose #1 as early as age 6 wks. - May give #4 as early as age 12m if 6m have elapsed since #3. - Do not give DTaP/DT to children age 7 yrs and older. - If possible, use the same DTaP product for all doses.	- Dose #2 and #3 may be given 4 wks after previous dose. - Dose #4 may be given 6m after #3. - If dose #4 is given before 4th birthday, wait at least 6m for #5 (age 4–6 yrs). - If dose #4 is given after 4th birthday, #5 is not needed.	Contraindications - Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. - For all pertussis-containing vaccines: Encephalopathy not attributable to an identifiable cause, within 7d after DTP/DTaP/Tdap. Precautions - Moderate or severe acute illness.
Td, Tdap (Tetanus, diphtheria, acellular pertussis) <i>Give IM</i>	- For children and teens lacking previous Tdap: Give Tdap routinely at age 11–12 yrs and vaccinate older teens on a catch-up basis; then boost every 10 yrs with Td. - Make special efforts to give Tdap to children and teens who are (1) in contact with infants younger than age 12m and, (2) health care workers with direct patient contact. - Give Tdap to pregnant adolescents during each pregnancy (preferred during 27–36 weeks' gestation), regardless of interval since prior Td or Tdap.	- DTaP and DT should not be used for children age 7 yrs and older; use Td and Tdap instead. - Children as young as age 7 yrs and teens who are unvaccinated or behind schedule should complete a primary Td series (3 doses, with an interval of 1–2m between dose #1 and #2, and an interval of 6–12m between dose #2 and #3); substitute Tdap for any dose in the series, preferably as dose #1. - Tdap should be given regardless of interval since previous Td.	Contraindications - History of anaphylaxis reaction following a prior dose of tetanus or diphtheria toxoid-containing vaccine; defer vaccination until at least 10 yrs have elapsed since the last tetanus toxoid-containing vaccine. - Guillain-Barré syndrome (GBS) within 6 wks after previous dose of tetanus toxoid-containing vaccine. - For DTaP only: Any of these events following a previous dose of DTP/DTaP: 1) temperature of 105°F (40.5°C) or higher within 48 hrs; 2) continuous crying for 3 hrs or more within 48 hrs; 3) collapse or shock-like state within 48 hrs; 4) seizure within 3d. - For all pertussis-containing vaccines: Progressive or unstable neurologic disorder, uncontrolled seizures, or progressive encephalopathy until a treatment regimen has been established and the condition has stabilized.

This document was adapted from the recommendations of the Advisory Committee on Immunization Practices (ACIP). To obtain copies of these recommendations, visit CDC's website at www.cdc.gov/vaccines/hcp/ACIP-rac/index.html or visit the Immunization Action Coalition (IAC) website at www.immunize.org/acip.

This table is revised periodically. Visit IAC's website at www.immunize.org/childrules to make sure you have the most current version.

For the purposes of calculating intervals between doses, 4 weeks = 28 days. Intervals of 4 months or greater are determined by calendar months.

A vaccine series does not need to be restarted, regardless of the time that has elapsed between doses.

IMMUNIZATION ACTION COALITION Saint Paul, Minnesota • 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/p2010.pdf • Item #P2010 (9/13)

ERROR: Administering the wrong vaccine (e.g., DTaP for Tdap, zoster for varicella, PCV for PPSV)

Avoiding this error: Check the vial 3 TIMES! Such errors often involve vaccines whose generic or trade names look or sound alike (Tdap/DTaP, Adacel and Daptacel), or which have similar packaging, so store such vaccines separately and mark them clearly in storage and on the patient's tray. Other times, vaccines are mixed up when treating multiple family members such as siblings. See family members at separate times and/or in separate rooms, and always verify names and birthdates.

Tdap or DTaP

Pertussis is widespread—are your patients protected?

Tdap: Tetanus toxoid, Reduced Diphtheria toxoid, Acellular Pertussis vaccine **For Those Age 7 Years or Older**

ADACEL™ (sanofi pasteur)



Boostrix® (GlaxoSmithKline)



DTaP: Diphtheria and Tetanus toxoid, Acellular Pertussis vaccine **For Those Ages 6 Weeks Through 6 Years**

DTaP only

DAPTACEL™ (sanofi pasteur)



Infanrix® (GlaxoSmithKline)



Combination: DTaP + Others

DTaP + HepB + IPV
Pediarix® (GlaxoSmithKline)
Ages 6 weeks through 6 years



DTaP + IPV + Hib
Pentacel® (sanofi pasteur)
Ages 6 weeks through 4 years



DTaP + IPV
Kinrix® (GlaxoSmithKline)
Ages 4 years through 6 years



Use Tdap or DTaP to stop pertussis. For more info, visit EZIZ.org

California Department of Public Health, Immunization Branch
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MM-508 (P. 01)

Pediatric/Adult Influenza Vaccine 2016-2017

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	Quadrivalent
Healthy Persons 2–49 years old	MedImmune Vaccines, Inc.	FluMist® Quadrivalent	0.2 mL single-dose nasal sprayer	Quadrivalent
ACIP does not recommend FluMist® be used in 2016-17				
36 months & Older	1. GlaxoSmithKline Biologicals	Fluarix® Quadrivalent	0.5 mL single-dose syringe	1. Quadrivalent
	2. GlaxoSmithKline	FluLaval® Quadrivalent	5.0 mL** multi-dose vial	2. Quadrivalent
	3. GlaxoSmithKline	FluLaval® Quadrivalent	0.5 mL single-dose syringe	3. Quadrivalent
	4. Sanofi Pasteur, Inc.	Fluzone® Quadrivalent	0.5 mL single-dose vial	4. Quadrivalent
	5. Sanofi Pasteur, Inc.	Fluzone® Quadrivalent	0.5 mL single-dose syringe	5. Quadrivalent
	6. Sanofi Pasteur, Inc.	Fluzone® Quadrivalent	5.0 mL** multi-dose vial	6. Quadrivalent
4 years & Older	Seqirus	Fluvirin®	5.0 mL** multi-dose vial	Trivalent
	Seqirus	Fluvirin®	0.5 mL single-dose syringe	Trivalent
	Seqirus	Flucelex®	0.5 mL pre-filled syringe	Quadrivalent
5 years & Older (ACIP recommends use for children 9 years and older)	CSL Limited	Afluria®	0.5 mL single-dose syringe	Trivalent
	CSL Limited	Afluria®	5.0 mL** multi-dose vial	Trivalent

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

* As of 7/2016, pending FDA approval for 6 months and older.

** 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).

These vaccines are available through the Vaccines for Children Program in 2016-2017 and can only be used for VFC eligible children through 18 years of age.

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<http://eziz.org/resources/vaccine-admin-job-aids>

Vaccine Storage & Handling Toolkit

June 2016



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

Toolkit: www.cdc.gov/vaccines/hcp/admin/storage/toolkit/storage-handling-toolkit.pdf
CDC storage & handling page: www.cdc.gov/vaccines/hcp/admin/storage/index.html

Haemophilus influenzae type b-containing Vaccines

Hib (ActHIB)

Ages: 6 weeks through 4 years

Use for: Any dose in the series

Route: Intramuscular (IM) injection

Reconstitute Hib powder ONLY with manufacturer-supplied 0.4% sodium chloride diluent

Beyond Use Time: If not used immediately after reconstitution, store at 2°C to 8°C (36°F to 46°F) and discard if not used within 24 hours.

Should be shaken vigorously before injection.

Read the package insert that accompanies the product to check for the presence of natural rubber or latex.

Hib (PedvaxHIB)

Ages: 6 weeks through 4 years

Use for: Any dose in the series

Route: Intramuscular (IM) injection

Vial stopper contains latex

Hib (Hiberix)

Ages: 6 weeks through 4 years

Use for: Any dose in the series

Route: Intramuscular (IM) injection

Reconstitute Hib powder ONLY with manufacturer-supplied 0.9% sodium chloride diluent

Beyond Use Time: If not used immediately after reconstitution, store at 2°C to 8°C (36°F to 46°F) and discard if not used within 24 hours.

Should be shaken vigorously before injection.

Hib-HepB (Comvax)

Ages: 6 weeks through 4 years

Use for: Hib: Any dose in the series

HepB: Any dose in the series

Do NOT use for HepB birth dose

Route: Intramuscular (IM) injection

Vial stopper contains latex

ERROR: Giving the wrong dosage

Avoiding this error: Check the vial 3 TIMES! Store vaccines with pediatric and adult dosages on different shelves and clearly marked "pediatric" or "adult." Verify patient's age and check against the vaccine's age indications in the package insert, the VIS, or a vaccine schedule that includes such information.

Influenza Vaccine Products for the 2016–2017 Influenza Season

Manufacturer	Trade Name (vaccine abbreviation) ¹	How Supplied	Mercury Content (µg Hg/0.5mL)	Age Group	Vaccine Product Billing Code ²	
					CPT	Medicare ³
AstraZeneca	FluMist ⁴ (LAIV4)	0.2 mL (single-use nasal spray)	0	2 through 49 years	90672	90672
GlaxoSmithKline	Fluarix (IIV4)	0.5 mL (single-dose syringe)	0	3 years & older	90686	90686
ID Biomedical Corp. of Quebec, a subsidiary of GlaxoSmithKline	FluLaval (IIV4)	0.5 mL (single-dose syringe)	0	3 years & older	90686	90686
		5.0 mL (multi-dose vial)	<25	3 years & older	90688	90688
Protein Sciences Corp.	Flublok (RIV3)	0.5 mL (single-dose vial)	0	18 years & older	90673	90673
Sanofi Pasteur, Inc.	Fluzone (IIV4)	0.25 mL (single-dose syringe)	0	6 through 35 months	90685	90685
		0.5 mL (single-dose syringe)	0	3 years & older	90686	90686
		0.5 mL (single-dose vial)	0	3 years & older	90686	90686
		5.0 mL (multi-dose vial)	25	6 through 35 months	90687	90687
		5.0 mL (multi-dose vial)	25	3 years & older	90688	90688
	Fluzone High-Dose (IIV3-HD)	0.5 mL (single-dose syringe)	0	65 years & older	90662	90662
	Fluzone Intradermal (IIV4-ID)	0.1 mL (single-dose microinjection system)	0	18 through 64 years	90630	90630
Seqirus (formerly Novartis influenza vaccines and bioCSL)	Afluria (IIV3)	0.5 mL (single-dose syringe)	0	9 years & older ^{4a}	90656	90656
		5.0 mL (multi-dose vial)	24.5		90658	Q2035
	Afluria (IIV4)	0.5 mL (single-dose syringe)	0	18 years & older ^{4b}	90686	90686
		5.0 mL (multi-dose vial)	24.5		90688	90688
	Fluad (aIIV3)	0.5 mL (single-dose syringe)	0	65 years & older	90653	90653
	Fluvirin (IIV3)	0.5 mL (single-dose syringe)	≤1	4 years & older	90656	90656
		5.0 mL (multi-dose vial)	25		90658	Q2037
	Flucelvax (ccIIV4)	0.5 mL (single-dose syringe)	0	4 years & older	90674	90674

FOOTNOTES

1. IIV3 = egg-based and cell culture-based trivalent inactivated influenza vaccine (injectable); where necessary to refer to cell culture-based vaccine, the prefix "cc" is used (e.g., ccIIV3). IIV4 = egg-based quadrivalent inactivated influenza vaccine (injectable); RIV3 = trivalent recombinant hemagglutinin influenza vaccine (injectable); aIIV3 = adjuvanted trivalent inactivated influenza vaccine.
2. Effective for claims with dates of service on or after 1/1/2011, CPT (Current Procedural Terminology) code 90638 is no longer payable for Medicare; rather, HCPCS (Healthcare Common Procedure Coding System) Q codes, as indicated above, should be submitted for payment purposes.
3. An administration code should always be reported in addition to the vaccine product code. Note: Third party payers may

have specific policies and guidelines that might require providing additional information on their claim forms.

4. ACIP recommends not using FluMist during the 2016–17 influenza vaccination season.
5. In 2010, ACIP recommended that Afluria not be used in children younger than age 9 years. If no other age-appropriate IIV is available, Afluria may be considered for a child age 3 through 8 years at high risk for influenza complications, after risks and benefits have been discussed with the parent or guardian. Afluria should not be used in children younger than age 3 years. This recommendation continues for the 2016–2017 influenza season.
6. Afluria is approved by the Food and Drug Administration for intramuscular administration with the PharmaJet Stratis Needle-Free Injection System for persons age 18 through 64 years.

ERROR: Using vaccine outside of its ACIP-recommended age/dose

Avoiding this error: If unsure, check the package insert. For example, DTaP-IPV (Kinrix, Quadracel) is only approved and recommended for the 5th dose of the DTaP and the 4th dose of IPV in children age 4–6 years. MMRV (ProQuad) is approved and recommended for children age 12 months through 12 years. Unless ACIP has made an off-label recommendation, you should use a vaccine as licensed to ensure its efficacy and safety.

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Food and Drug Administration

FDA Product Approval: Vaccine index

Adenovirus	Hepatitis B	Pneumococcal - PCV	Tdap
Anthrax	HPV	Pneumococcal - PPSV	Typhoid
BCG	Influenza	Polio - IPV	Varicella (chickenpox)
Cholera	Japanese encephalitis	Rabies	Yellow fever
DT	Measles	Rotavirus	Zoster (shingles)
DTaP	Meningococcal ACWY	Rubella	
Hib	Meningococcal B	Smallpox	
Hepatitis A	Mumps	Td	

Product Approval - Adenovirus

Adenovirus Product Approval

Adenovirus Package Insert
Barr Labs Inc.

Product Approval - Anthrax

BioThrax Product Approval

BioThrax Package Insert
Emergent BioSolutions

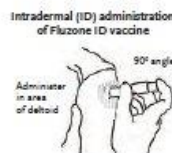
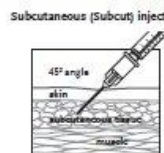
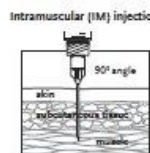
Product Approval - BCG Vaccine (tuberculosis)

ERROR: Administering vaccine by the wrong route

Avoiding this error: Post a reference so providers can easily verify the administration route and site for all vaccines/ages. Highlight or otherwise mark the route information on the package.

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

Vaccine	Dose	Route	Injection Site and Needle Size
Diphtheria, Tetanus, Pertussis (DTaP, DT, Tdap, Td)	0.5 mL	IM	Subcutaneous (Subcut) injection Use a 23–25 gauge needle. Choose the injection site that is appropriate to the person's age and body mass.
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)	Adults (11–17 yrs): 0.5 mL 1–10 mL adult formulation on a 3-dose schedule	IM	
Human papillomavirus (HPV)	0.5 mL	IM	
Influenza, live attenuated (LAIV)	0.2 mL (0.1 mL in each nostril)	Intranasal spray	
Influenza, inactivated (IIV): recombinant (RIV), for ages 18 years and older	6–35 mos: 0.25 mL ≥3 yrs: 0.5 mL	IM	
Influenza (IIV) Fluzone Intradermal, for ages 18 through 64 years	0.1 mL	ID	
Measles, Mumps, Rubella (MMR)	0.5 mL	Subcut	
Meningococcal conjugate (MCV4 (MenACWY))	0.5 mL	IM	
Meningococcal serogroup B (MenB)	0.5 mL	IM	
Meningococcal polysaccharide (MPSV)	0.5 mL	Subcut	
Pneumococcal conjugate (PCV)	0.5 mL	IM	
Pneumococcal polysaccharide (PPSV)	0.5 mL	IM or Subcut	
Polio, inactivated (IPV)	0.5 mL	IM or Subcut	
Rotavirus (RV)	Rotarix: 1.0 mL Rotateq: 2.0 mL	Oral	
Varicella (Var)	0.5 mL	Subcut	
Zoster (Zos)	0.65 mL	Subcut	
Combination Vaccines	0.5 mL	IM	
DTaP-HepB-IPV (Pediaris) DTaP-IPV/Hib (Pentacel) DTaP-IPV (Imovis, Quadacel) Hib-HepB (Comvax) Hib-MenCY (MenHibris) MMRV (ProQuad) HepA-HepB (Twinnix)	≥12 yrs: 0.5 mL ≥18 yrs: 1.0 mL	Subcut IM	



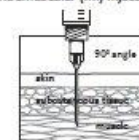
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www.immunize.org/catg.d/p3085.pdf • Item #P3085 (8/16)

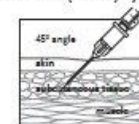
Administering Vaccines to Adults: Dose, Route, Site, and Needle Size

VACCINE	DOSE	ROUTE
Hepatitis A (HepA)	≥18 yrs: 0.5 mL ≥19 yrs: 1.0 mL	IM
Hepatitis B (HepB)	≥19 yrs: 0.5 mL ≥20 yrs: 1.0 mL	IM
HepA-HepB (Twinnix)	≥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)	NAS (Intranasal spray)
Influenza, inactivated (IIV) and recombinant (RIV)	0.5 mL	IM
Influenza (IIV) Fluzone Intradermal, for ages 18 through 64 years	0.1 mL	ID (Intradermal)
Measles, Mumps, Rubella (MMR)	0.5 mL	SubCut
Meningococcal conjugate (MenACWY)	0.5 mL	IM
Meningococcal protein (MenB)	0.5 mL	IM
Meningococcal serogroup B (MenB)	0.5 mL	IM
Meningococcal polysaccharide (MPSV)	0.5 mL	SubCut
Pneumococcal conjugate (PCV13)	0.5 mL	IM
Pneumococcal polysaccharide (PPSV)	0.5 mL	IM or SubCut
Tetanus, Diphtheria (Td) with Pertussis (Tdap)	0.5 mL	IM
Varicella (VAR)	0.5 mL	SubCut
Zoster (HZV)	0.65 mL	SubCut

Intramuscular (IM) injection



Subcutaneous (SubCut) injection



Intradermal (ID) administration of Fluzone ID vaccine



Intranasal (NAS) administration of Flumist (LAIV) vaccine



Injection Site and Needle Size

Subcutaneous (SubCut) injection – Use a 23–25 gauge, 1/2" needle. Inject in fatty tissue over triceps.

Intramuscular (IM) injection – Use a 22–25 gauge needle. Inject in deltoid muscle of arm. Choose the needle length as indicated below:

Gender/Weight	Needle Length
Female or male less than 130 lbs	5/8"–1"
Female or male 130–152 lbs	1"
Female 153–200 lbs	1–1 1/2"
Male 153–260 lbs	1–1 1/2"
Female 200+ lbs	1 1/2"
Male 260+ lbs	1 1/2"

* A 1 1/2" needle can be used for patients 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.

NOTE: Always refer to the package insert included with each biologic for complete vaccine administration information. CDC's Advisory Committee on Immunization Practices (ACIP) recommendations for the particular vaccine should be reviewed as well. Access the ACIP recommendations at www.immunize.org/acip.

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Technical content reviewed by the Centers for Disease Control and Prevention
www.immunize.org/catg.d/p3085.pdf • Item #P3085 (8/15)

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

See also the "Vaccine Administration" chapter from CDC's *Pink Book*:
www.cdc.gov/vaccines/pubs/pinkbook/vac-admin.html

To Report Errors

The Institute for Safe Medication Practices (ISMP) has a website to report vaccine errors—the Vaccine Error Reporting Program (VERP). VERP was created to allow healthcare professionals and patients to report vaccine errors confidentially. By collecting and quantifying information about these errors, ISMP will be better able to advocate for changes in vaccine names, labeling, or other appropriate modifications that could reduce the likelihood of vaccine errors in the future. <http://verp.ismp.org>



**Recommendations For Practitioners To Prevent Vaccine Errors
Part 2: Analysis Of ISMP Vaccine Errors Reporting Program (VERP)**

In March 2015, ISMP published an excellent guide titled
Recommendations For Practitioners To Prevent Vaccine Errors

www.ismp.org/newsletters/acuteecare/showarticle.aspx?id=104

To Report Errors

CDC recommends that healthcare professionals also report vaccine errors to the Vaccine Adverse Events Reporting System (VAERS). If an adverse event occurs following a vaccine administration error, a report should definitely be sent to VAERS. Adverse events should be reported to VAERS regardless of whether a healthcare professional thinks its related to the vaccine or not, as long as it follows administering a dose of vaccine. <https://vaers.hhs.gov/index>

Questions?

- Check out “Ask the Experts” to see if your question has already been answered: www.immunize.org/askexperts
- Email CDC’s experts: nipinfo@cdc.gov
- Contact your vaccine representative or call the manufacturer
- Call your state immunization coordinator (contact information for your state immunization program can be found at www.vaccineinformation.org/state-immunization-programs)
- Email IAC: admin@immunize.org