Vaccine Administration

1. Avoid Common Administration Errors
2. Immunization Site Guides
    a. Infant Immunization Site Guide
    b. Toddler Immunization Site Guide
    c. Child and Adult Immunization Site Guide
3. How to Administer IM and Subcutaneous Vaccine Injections
4. How to Administer Intradermal, Intranasal, and Oral Vaccinations
5. How to Administer Intramuscular, Intradermal, and Intranasal Influenza Vaccines
6. Vaccine with Diluents: How to Use Them
7. Vaccine Adverse Event Reporting System “VAERS” - Table of Reportable Events Following Vaccination
8. VAERS Form
9. Resources for Clinicians Administering Vaccines

tapi The Arizona Partnership for Immunization

WhyImmunize.org

For information on how to avoid or respond to errors in COVID-19 vaccine administration, see *COVID-19 Vaccine Administration Errors and Deviations* at www.cdc.gov/covid-19/downloads/covid19-vaccine-errors-deviations.pdf.

Don't Be Guilty of These **Preventable** Errors in Vaccine Administration!

*Is your healthcare setting making any of these frequently reported errors in administering vaccines? Although some of these errors are much more serious than others, none of them should occur. Be sure those who administer vaccines are not making any of these **preventable** errors in vaccine administration.*

*Note: Information about **reporting** vaccine administration errors is found at the end of this article.*

ERROR: Not using a screening checklist to identify patients' contraindications and precautions to vaccination

How to Avoid This Error: Always use a reliable screening questionnaire to consistently 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 false contraindications (which can also be life-threatening, as they can leave a patient exposed to a vaccine-preventable disease).

Helpful Resources: Use IAC's screening checklists, such *as Screening Checklist for Contraindications to Vaccines for Children and Teens* and *Screening Checklist for Contraindications to Vaccines for Adults* (both reviewed by CDC) available at www.immunize.org/handouts/screening-vaccines.asp. CDC's Vaccine Contraindications and Precautions web page: www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html.

ERROR: Administering the wrong vaccine due to similarities in vaccine names (e.g., DTaP for Tdap, zoster for varicella, PPSV23 for PCV13)

How to Avoid This Error: Check the vial label 3 TIMES! Such errors often involve vaccines whose generic or trade names look or sound alike (e.g., Tdap and DTaP, Adacel and Daptacel), or that have similar packaging, so store such vaccines separately and mark them clearly in your storage unit as well as on the patient's vaccine tray. Other times, vaccines are mixed up when vaccinating multiple family members, such as siblings, on the same visit. Prepare vaccines needed for one family member at a time, and always verify names and birthdates for the patient receiving the vaccines.

What to do after such an error: The parent/patient should be told the wrong vaccine was given. Provide the correct vaccine, if necessary, with correct spacing, if necessary (for more details about specific situations, check *Ask the Experts* [www.immunize.org/ask experts] under the relevant vaccine section, or email CDC nipinfo@cdc.gov for advice). Assess how this error happened to ensure it will not happen again.

Helpful Resource: Institute for Safe Medication Practices' (ISMP) *Recommendations for Practitioners to Prevent Vaccine Errors Part 2: Analysis of ISMP Vaccine Errors Reporting Program*: www.ismp.org/newsletters/acutecare/showarticle.aspx?id=104

ERROR: Using the wrong diluent or administering the diluent only

How to Avoid This Error: Use careful labeling in your vaccine storage unit. Keep vaccines and their diluents together if storage requirements are the same. Check the vial and diluents labels 3 TIMES before reconstituting vaccine. Administering the diluent *only* is most likely to happen with the two vaccines that include antigen in their liquid component, Menveo and Pentacel.

What to do after such an error: Diluent errors could affect the potency of the vaccine antigen administered, or the patient might not get the full benefit of the vaccine if the diluent not given contains antigen. If the wrong diluent is used, the vaccine needs to be repeated (except in the case of mixing up the diluent between MMR, MMRV, varicella, and zoster vaccines which are all made by Merck and use the same sterile water diluent).

If an INACTIVATED vaccine is reconstituted with the wrong diluent and is administered, the dose is invalid and should be repeated ASAP. If a LIVE vaccine is reconstituted with the wrong diluent and is administered, the dose is invalid and if it can't be repeated on the same clinic day, it needs to be repeated no earlier than four weeks after the invalid dose. This spacing is due to the effects of generating a partial immune response that could suppress the live replication of subsequent doses, even of the same live virus vaccine.

Menveo's diluent contains the C, Y, and W-135 serogroups, and the lyophilized vaccine component (i.e., freeze-dried powder) contains serogroup A. If the patient receives only the diluent, he or she is not protected against invasive meningococcal disease caused by *Neisseria meningitidis* serogroup A. Serogroup A disease is very rare in the United States but common in some other countries. If the recipient of the C-Y-W diluent-only dose does not plan to travel outside the U.S., then the dose does not need to be repeated. Otherwise, the dose should be repeated with either correctly reconstituted Menveo or with a dose of Menactra. There is no minimum interval between the incorrect dose and the repeat dose.

With Pentacel, the liquid DTaP-IPV component given alone can count as valid doses of DTaP and IPV vaccines. You cannot mix the leftover Hib component (lyophilized powder) with sterile water. ActHib must ONLY be reconstituted with either the DTaP-IPV solution supplied with Pentacel, or with a specific ActHib saline diluent. You must contact the manufacturer to obtain diluent for the extra ActHib dose.

With Recombinant Zoster Vaccine (RZV, Shingrix), if only the diluent is administered, this dose is invalid and does not count. Administer a correctly reconstituted dose 4 weeks after the invalid dose.

Helpful Resource: *Vaccines with Diluents: How to Use Them* www.immunize.org/catg.d/p3040.pdf

CONTINUED ON THE NEXT PAGE ▶

immunization action coalition
IAC
immunize.org

Saint Paul, Minnesota ▪ 651-647-9009 ▪ www.immunize.org ▪ www.vaccineinformation.org

www.immunize.org/catg.d/p3033.pdf ▪ Item #P3033 (6/21)

ERROR: Administering a vaccine after the expiration date

How to Avoid This Error: If a vaccine is even one day over its expiration date, it should not be used. Rotate stock in your storage unit (which means make sure your vaccine that expires soonest is the closest to the front and easiest to reach in your storage unit), and establish a regular schedule for checking your storage unit for expired vaccine.

What to do after such an error: If a dose of expired vaccine is inadvertently given, it should be repeated. If the expired dose is a live virus vaccine, you must wait at least 4 weeks after the expired dose was given before repeating it. If the error is detected the same day, a repeat dose can be administered that day. The repeat dose of an expired inactivated vaccine can be given on the same day or any other time. If you prefer, you can perform serologic testing to check for immunity for certain vaccinations (e.g., measles, rubella, hepatitis A, and tetanus), although this may be more expensive and may produce negative test results, and if so, revaccination would be indicated.

Helpful Resources: CDC's *Vaccine Storage and Handling Toolkit* (page 18): www.cdc.gov/vaccines/hcp/admin/storage/toolkit/storage-handling-toolkit.pdf

ERROR: Administering vaccine in the wrong site or by the wrong route

How to Avoid This Error: In your vaccine preparation area, post reference materials that show the site and the route for each vaccine for each age group so that those who administer vaccines can easily verify the administration site and route for all vaccines and for all ages. Highlight or otherwise mark the route information on the package.

What to do after such an error: The deltoid muscle is the preferred site for intramuscular (IM) injection for children age 3 years and older and adults, although the anterolateral thigh can be used as a secondary choice. The anterolateral thigh is the site of choice for infants and toddlers un4der age 3 years; the deltoid is a secondary injection site for IM injections with toddlers if the muscle mass is adequate. For deltoid injections, care must be taken to avoid injection too high on the upper arm where injury to the shoulder could result (referred to as Shoulder Injury Related to Vaccine Administration, or SIRVA). Although the gluteus muscle is not a recommended site for vaccination, in general a dose given there can be considered valid. The exceptions to this general rule are hepatitis B, rabies and HPV vaccines, which should not be considered valid if administered in any site other than the deltoid or anterolateral thigh.

Although vaccines should always be given by the route recommended by the manufacturer, if a vaccine is given by the wrong route (subcutaneously (Subcut) instead of IM, or IM instead of Subcut), it doesn't need to be repeated with the following four exceptions: hepatitis B, rabies, HPV, and inactivated influenza vaccine that is labeled for IM administration given by any route other than IM should not be counted as valid and should be repeated.

Helpful Resources: *Administering Vaccines: Dose, Route, Site, and Needle Size:* www.immunize.org/catg.d/p3085.pdf

Administering Vaccines to Adults: Dose, Route, Site, and Needle Size: www.immunize.org/catg.d/p3084.pdf

How to Administer Intramuscular and Subcutaneous Vaccine Injections: www.immunize.org/catg.d/p2020.pdf

How to Administer Intramuscular and Subcutaneous Vaccine Injections to Adults: www.immunize.org/catg.d/p2020a.pdf

How to Administer Intranasal and Oral Vaccinations: www.immunize.org/catg.d/p2021.pdf

ACIP's *General Best Practice Guidelines for Immunization* at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/administration.html

Ask the Experts: www.immunize.org/askexperts/administering-vaccines.asp#errors.

ERROR: Giving a vaccine dose earlier than the recommended age or interval

How to Avoid This Error: Know the minimum intervals for all vaccine series. Keep an easy-to-read immunization schedule handy for staff as well as the CDC table of minimum intervals. 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.

What to do after such an error: A dose administered 5 or more days earlier than the recommended *minimum interval* between doses is not valid and should be repeated. The repeat dose should be spaced after the INVALID dose by the recommended minimum interval.

Doses administered 5 or more days before the *minimum age* should be repeated on or after the patient reaches the minimum age. If the vaccine is a live vaccine, waiting at least 28 days from the invalid dose is recommended.

Helpful Resources: CDC's Recommended and Minimum Ages and Intervals Between Doses of Routinely Recommended Vaccines chart: www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/A/age-interval-table.pdf

IAC's *Summary of Recommendations for Child/Teen Immunization:* www.immunize.org/catg.d/p2010.pdf

IAC's *Summary of Recommendations for Adult Immunization*: www.immunize.org/catg.d/p2011.pdf

Contact information for state immunization program managers: www.immunize.org/coordinators

CONTINUED ON THE NEXT PAGE ▶

ERROR: Giving two doses of live injectable or nasally administered vaccines too close together (leading to potential interference between these vaccines)

How to Avoid This Error: Ask patients if they have received any recent vaccinations ("Have you (or has your child) received any vaccinations in the past 4 weeks?" is a question on IAC's screening checklist for contraindications). Check the person's record in your state registry.

What to do after such an error: If two live injectable or nasally administered virus vaccines are administered less than 4 weeks apart and not on the same day, the vaccine given second should be considered invalid and be repeated. The repeat dose should be administered at least 4 weeks after the INVALID dose.

Note: Oral vaccines (Ty21a typhoid vaccine, rotavirus and cholera) can be administered simultaneously or at any interval before or after other live vaccines (injectable or intranasal) if indicated. One pair that is an exception is TY21a and cholera. Cholera vaccine should be administered before TY21a vaccine, and 8 hours should separate cholera vaccine and the first dose of TY21a.

Helpful Resources: IAC's screening checklists: www.immunize.org/handouts/screening-vaccines.asp

CDC's "Pink Book" chapter on General Recommendations on Immunization: www.cdc.gov/vaccines/pubs/pinkbook/downloads/genrec.pdf

ERROR: Giving the wrong dosage amount for the patient's age (e.g., influenza, hepatitis A, and hepatitis B vaccines)

How to Avoid This Error: Check the vial label 3 TIMES to be certain you are administering the appropriate pediatric or adult product! Store vaccines with pediatric and adult dosages (certain influenza vaccine products, hepatitis A and B) on different shelves and clearly marked "pediatric" or "adult." Verify the patient's age and check against the vaccine's age indications in the package insert, on the VIS, or on a vaccine dosing schedule that includes such information.

What to do after such an error:

- If you gave LESS than a full age-appropriate dose of any vaccine, the dose is invalid. If the error is discovered while the patient is still in the office, you can give another pediatric dose (i.e., the other "half" dose). If the error is discovered after the person has left the office, then the patient should be revaccinated with a full age-appropriate dose as soon as feasible. Exceptions are if a patient sneezes after nasal spray vaccine or an infant regurgitates, spits, or vomits during or after receiving oral rotavirus vaccine.
- If you gave MORE than an age-appropriate dose of a vaccine (adult dose of a vaccine to child or 2 doses of the same vaccine (e.g., mistakenly administering MMRV and varicella at the same visit), count the dose as valid and notify the patient/parent about the error. Using larger than recommended dosages can pose a risk because of excessive local or systemic concentrations of antigens or other vaccine constituents. The patient should receive subsequent doses in the series on schedule (that is, a larger-than-recommended dose does not negate the need for the remaining doses in the series).
- For Shingrix only: if less that a full dose is administered (e.g., needle slip, syringe malfunction) and the error is recognized on the same clinic day, the repeat dose can be administered immediately. If the error is identified after the day the partial dose was given, then wait 4 weeks and administer another full dose.

Helpful Resources: CDC's *Vaccine Storage and Handling Toolkit*: www.cdc.gov/vaccines/hcp/admin/storage/toolkit/storage-handling-toolkit.pdf

IAC's *Hepatitis A and B Vaccines: Be sure your patient gets the correct dose!* www.immunize.org/catg.d/p2081.pdf

IAC's *Influenza Vaccine Products for the [current year] Influenza Season:* www.immunize.org/catg.d/p4072.pdf

ERROR: Giving both pneumococcal vaccines PPSV23 (Pneumovax) and PCV13 (Prevnar 13) on the same day

How to Avoid This Error: Almost all vaccines used in the United States may be given simultaneously (not in the same syringe), but pneumococcal vaccines are an exception. PCV13 and PPSV23 should not be given at the same visit. For adults age 19–64 who are receiving both vaccines due to a high-risk immunosuppressive condition, PCV13 should be given first followed by PPSV23 at least 8 weeks later. If PPSV23 has already been given, wait 8 weeks (for a child) or 1 year (for an adult age 19 years or older) before giving PCV13 to avoid interference between the two vaccines. For adults age 65 and older who are receiving both PCV13 and PPSV23 as part of the routine recommendation, PCV13 should be given first followed by PPSV23 one year later.

- **What to do after such an error:** ACIP has not spelled out what to do when doses of PCV13 and PPSV23 are given non-simultaneously without the recommended minimum interval between them, but CDC subject matter experts have said that in such a case, the dose given second does not need to be repeated. This is an exception to the usual procedure for a minimum interval violation.

Helpful Resources: *Pneumococcal Vaccine Timing*: eziz.org/assets/docs/IMM-1152.pdf

Pneumococcal Vaccination Recommendations for Children and Adults by Age and/or Risk Factor: www.immunize.org/catg.d/p2019.pdf

IAC's *Summary of Recommendations for Child/Teen Immunization*: www.immunize.org/catg.d/p2010.pdf

IAC's *Summary of Recommendations for Adult Immunization*: www.immunize.org/catg.d/p2011.pdf

CONTINUED ON THE NEXT PAGE ▶

ERROR: Administering a vaccine outside of its ACIP-recommended age/dose schedule (e.g., DTaP-IPV, MMRV)

How to Avoid This Error: If you are unsure whether it is acceptable to use the vaccine in a certain situation, 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.

What to do after such an error: Check *Ask the Experts* (www.immunize.org/askexperts) under the specific vaccine section, or email CDC at nipinfo@cdc.gov for advice. In general, as long as the off-label dosage was correct and the minimum age(s) and interval(s) were met, CDC does not recommend that an off-label dose be repeated, but state immunization registries may not accept it as valid, so check.

Helpful Resources: Package inserts: www.immunize.org/fda

State immunization manager contact information: www.immunize.org/coordinators

ERROR: Administering a vaccine using the wrong needle length

How to Avoid This Error: Post a reference guide in your vaccine preparation area so those who administer vaccines can easily verify the correct needle size for the type of injection and age/weight of the patient.

What to do after such an error: The needle length (not the gauge) is critical to delivering vaccine to the appropriate tissue depth. An IM injection given with too short a needle for the person's weight is functionally a Subcut injection. However, ACIP does not recommend repeating IM injections given by the Subcut route except for hepatitis B, HPV, rabies, and influenza vaccines.

Helpful Resources: *Administering Vaccines: Dose, Route, Site, and Needle Size:* www.immunize.org/catg.d/p3085.pdf

Administering Vaccines to Adults: Dose, Route, Site, and Needle Size: www.immunize.org/catg.d/p3084.pdf

REPORT VACCINE ADMINISTRATION ERRORS: If you've made a vaccination error, here are two places you can report it:

1. The Institute for Safe Medication Practices (ISMP) has a website where errors can be reported. The Vaccine Error Reporting Program (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. Report at http://verp.ismp.org.

Helpful Resource: In March 2015, VERP published an excellent guide on avoiding vaccine errors: www.ismp.org/newsletters/acutecare/showarticle.aspx?id=104

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

Educational Resources for Vaccine Administration

ACIP's *General Best Practice Guidelines for Immunization* – *General Best Practice Guidelines for Immunization* updates and replaces ACIP's 2011 *General Recommendations on Immunization*. This website covers a broad range of immunization topics, including detailed information about recommended vaccine administration practices, and is updated regularly.

- www.cdc.gov/vaccines/hcp/acip-recs/general-recs/administration.html

CDC's e-Learn: *Vaccine Administration* – This training addresses knowledge gaps in proper vaccine administration. It highlights common mistakes and is designed to train providers to avoid administration errors by applying the "Rights of Medication Administration" to each encounter when vaccines are administered.

- www2.cdc.gov/vaccines/ed/vaxadmin/va/ce.asp

To Err Is Human; Not To Err Is Better! Vaccination Errors and How to Prevent Them – This slide presentation was developed by the Immunization Action Coalition in response to the questions emailed to the organization by healthcare professionals around the nation.

- www.immunize.org/catg.d/s8020.pdf
- www.immunize.org/resources/res_powerpoint.asp

***Immunization Techniques* DVD** – 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, including injectable, oral, and nasal vaccines.

- Available for purchase at www.immunize.org/dvd.
- Viewable on YouTube at www.youtube.com/watch?v=WsZ6NEijlfI&feature=youtu.be

Questions?

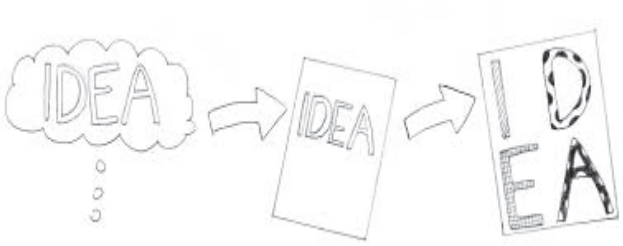
Email CDC's immunization experts: nipinfo@cdc.gov.

Call the vaccine manufacturer. Contact information at www.immunize.org/resources/manufact_vax.asp.

Call your state immunization program manager. Contact information at www.immunize.org/coordinators.

Do you have questions about avoiding vaccine handling and storage errors? Download: *Don't Be Guilty of These Preventable Errors in Vaccine Storage and Handling!* www.immunize.org/catg.d/p3036.pdf

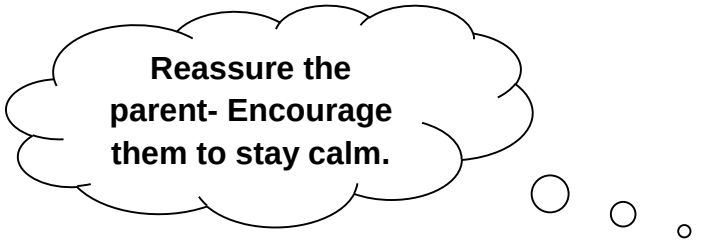
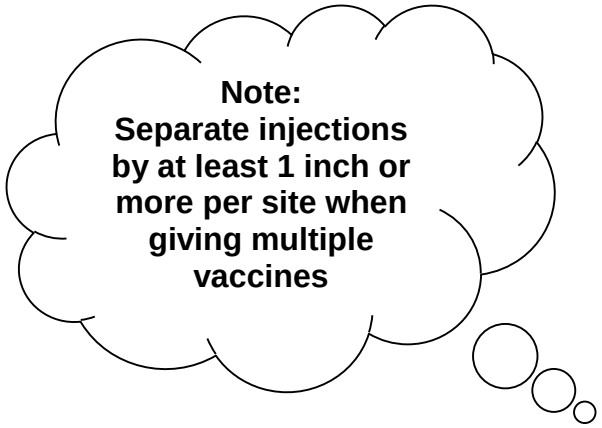
Administration Sites Guides



WhyImmunize.org

IMMUNIZATIONS/SITE: <12 months (INFANT)

IM Site: Vastus Lateralis (thigh) **SUBQ Site: Vastus Lateralis**

VACCINE: LEFT	ROUTE	VACCINE: RIGHT
*Oral vaccine (Rotavirus) is given first *		
**DTaP/DT **Pediarix (DTaP+IPV+HepB) **Pentacel (DTaP+IPV+Hib)	IM	
IPV (Polio)	IM/*SUBQ*	
	IM	**Inactivated Influenza (0.25mL)** (Only for infants 6months and up)
	IM	**Hib** **Comvax (Hib+HepB,** **MenHibrix (meningococcal + Hib)** If receiving >3 IMs, can move Left
	IM	**HEPATITIS B**
	IM	**PCV 13** **(Pneumococcal Conjugate)**

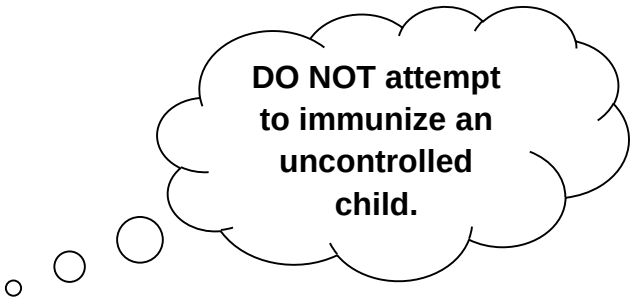
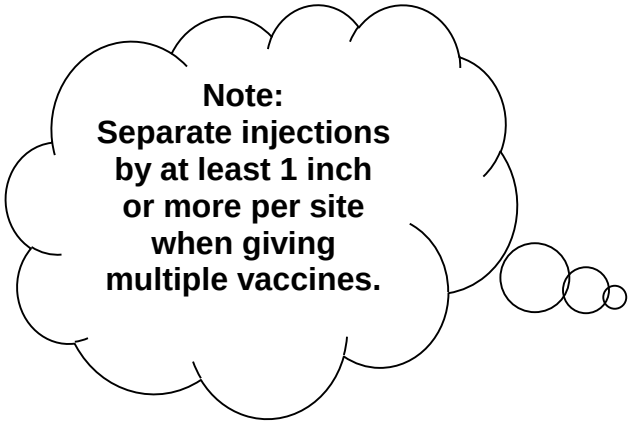
**Tetanus-containing vaccines and PCV-13 are most irritating to tissues and should be in separate limbs.

-Subq injections can be given in the back of the arm if necessary, though the thigh is preferred for this age.

-Instruct parents not to pre medicate for fever prior to vaccination.

IMMUNIZATIONS/SITE: 12-35 Months (Toddlers)

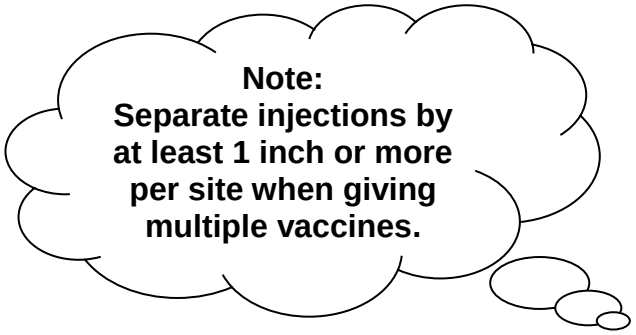
Recommended IM Site: Vastus Lateralis (thigh) SUBQ Site: Back of arm

VACCINE: LEFT	ROUTE	VACCINE: RIGHT
DTaP/DT **Pediarix (DTaP+IPV+HepB)** **Pentacel (DTaP+IPV+Hib)** *Use anterolateral thigh	**IM**	
IPV (Polio)	***SUBQ/IM*** (arm)	
VARICELLA	***SUBQ*** (arm)	
 ***PPSV23 can be given Sub Q or IM**	**IM**	**HEPATITIS A** If receiving >2 IMs in same site, can move Left
	IM	**INACTIVATED INFLUENZA (0.25mL)** (Flu also comes in intranasal for 2yrs+)
	IM	**Hib** **Comvax (Hib+HepB) MenHibrix (mening. +hib)** If receiving >2 IMs in same site, can move Left
	IM	**HEPATITIS B**
	IM	**PCV 13** **(Pneumococcal Conjugate)** *Use anterolateral thigh
	SUBQ (arm)	**MMR**
	SUBQ (arm)	**PROQUAD (MMR+VAR)** (through age 12)

*Tetanus-containing vaccines and PCV-13 are most irritating to tissues and should be in separate limbs- preferably thighs -Multiple vaccines are better handled in the vastus lateralis due to the greater muscle mass, though may use deltoid for single IM if muscle mass is adequate.

IMMUNIZATIONS/SITE: 3yrs+ (Child-Adult)

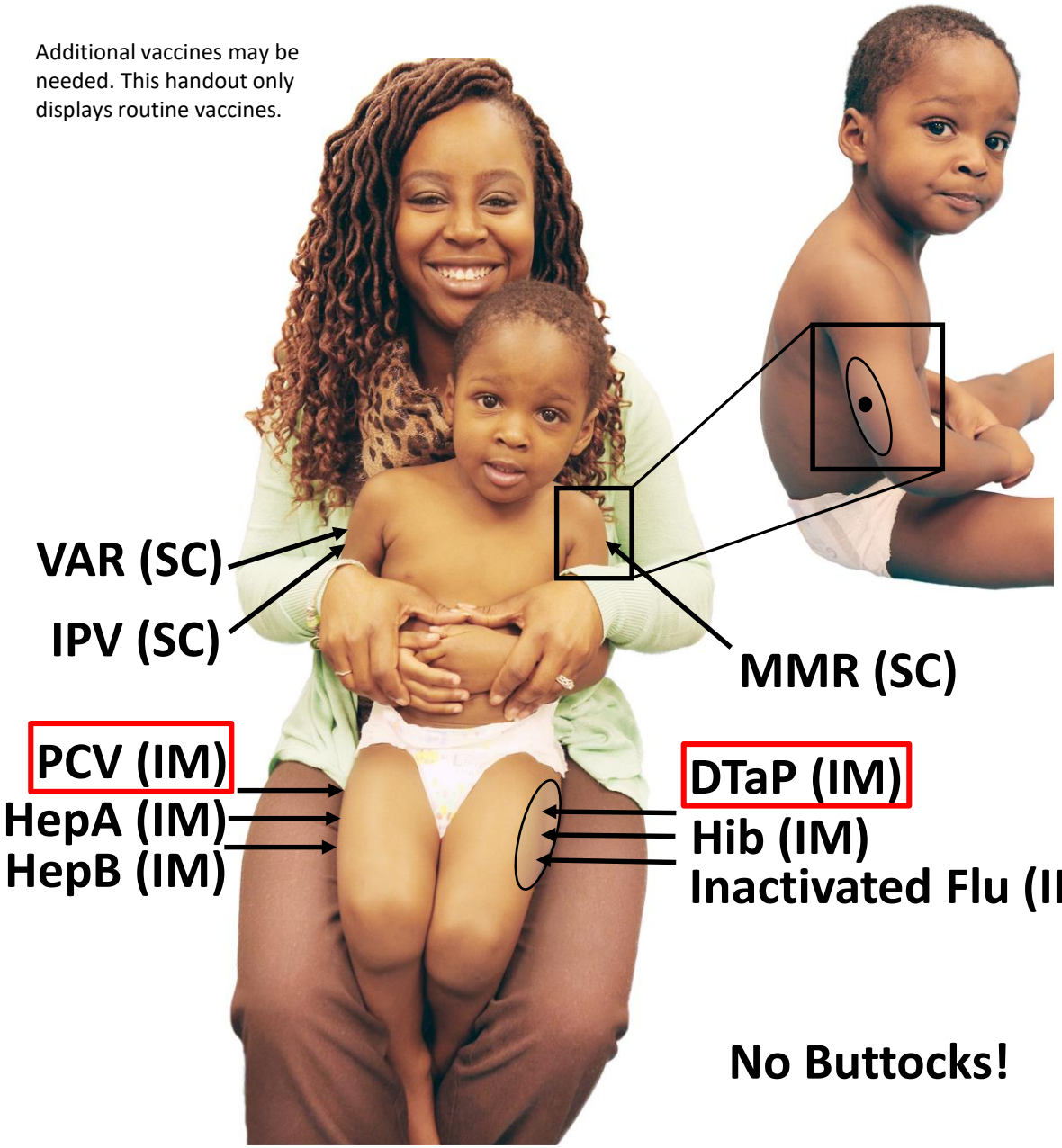
IM Site: Deltoid **SUBQ Site: Back of arm**

VACCINE: LEFT	ROUTE	VACCINE: RIGHT
Tdap/Td (7yrs+ only) **DTaP/DT** (under 7yrs only) **Pediarix (DTaP+HepB+IPV)** (thru 6yrs) **Pentacel (DTaP+IPV+Hib)** (thru 4yrs) **Kinrix (DTaP+IPV)** (4-6yrs)	IM	
IPV (Polio)	*SUBQ*	
VARICELLA	*SUBQ*	
 ***PPSV23 can be given Sub Q or IM**	IM	**HEPATITIS A** **HEPATITIS B** If receiving >2 IMs in one limb, can move to Left
	IM	**MCV4 (Meningococcal) * Give Men B in left
	IM	**Inactivated Influenza (0.5mL)** (Flu also comes in intranasal for 2yrs+)
	IM	**Hib** If receiving >2 IMs in one limb, can move to Left
	IM	**PCV 13 (Pneumococcal Conjugate)** **PPVS23 (Pneumococcal Polysaccharide)**
	IM	**HPV (Human Papillomavirus)
	SUBQ	MMR
	SUBQ	PROQUAD (MMR+VAR) (through age 12)

When giving Tdap, MCV4, and HPV, give most reactive (Tdap and MCV4) in **separate limbs and give HPV **last** (most painful).* If giving MCV4 & Men B give in separate arms. Adolescents are more prone to syncope. Best practice is to have them remain seated x15-20 minutes to ensure safety.

Giving All the Doses 12 Months and Older

Additional vaccines may be needed. This handout only displays routine vaccines.



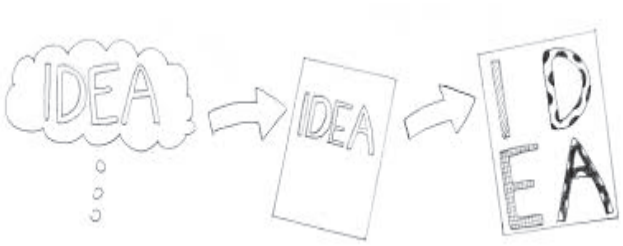
- **IM** injections are given in the **anterolateral thigh** (preferred site for 12 mos.-2 yrs.) using a **1" needle**
  - Separate IM injection sites by a minimum of 1"
  - Deltoid is preferred IM site for 3 yrs. and older
    - Anterolateral thigh is an alternative site if deltoid cannot be used
- **SC** injections are given in the upper outer triceps area or thigh using a **5/8" needle** (see ● to the left for placement in triceps area)
- Using combination vaccines decreases the number of injections
  - IPV **must** be given IM when given as a combination vaccine (e.g., DTaP-IPV/Hib, DTaP-IPV-HepB)
- Give vaccines likely to cause greater local reaction (e.g., DTaP, PCV) into separate limbs
- Give the most painful injections last (e.g., MMR, PCV)

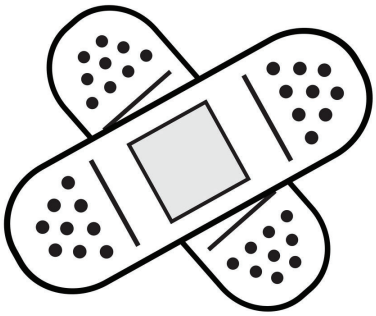
Intramuscular (IM) 90° Angle
Subcutaneous (SC) 45° Angle

For additional vaccine administration information see:
"Administering Vaccines: Dose, Route, Site, and Needle Size"
at www.immunize.org/catg.d/p3085.pdf

ALLIANCE FOR IMMUNIZATION IN MICHIGAN
Revised: June 25, 2019

How to Administer IM, Subcu, Oral





WhyImmunize.org

How to Administer Intramuscular and Intranasal Influenza Vaccines

Intramuscular injection (IM)

Inactivated Influenza Vaccines (IIV), including recombinant hemagglutinin (RIV), cell culture-based vaccine (ccIIV), adjuvanted influenza vaccine (aIIV), and egg culture-based inactivated influenza vaccines.

1 Use a needle long enough to reach deep into the muscle. Infants age 6 through 11 mos: 1"; 1 through 10 yrs: 1–1¼"; and children and adults 11 years and older: 1–1½".

2 With your non-dominant hand, bunch up the muscle.

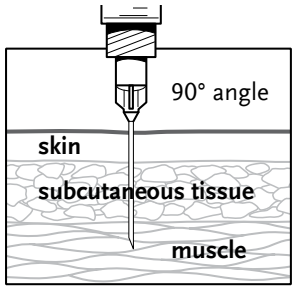
3 With your dominant hand, insert the needle at a 90° angle to the skin with a quick thrust.

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 then 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 needle and syringe in a sharps container.



Intranasal administration (NAS)

Live Attenuated Influenza Vaccine (LAIV)

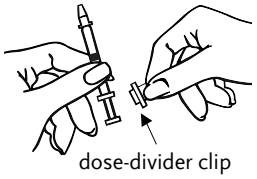
1 FluMist (LAIV) is for intranasal administration only. Do not inject FluMist.

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, 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
IAC
immunize.org

Saint Paul, Minnesota ▪ 651-647-9009 ▪ www.immunize.org ▪ www.vaccineinformation.org

www.immunize.org/catg.d/p2024.pdf ▪ Item #P2024 (9/19)

How to Administer Intramuscular and Subcutaneous Vaccine Injections

Administration by the Intramuscular (IM) Route

Administer these vaccines via IM route

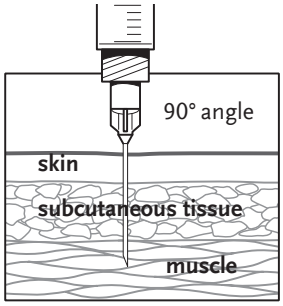
- Diphtheria-tetanus-pertussis (DTaP, Tdap)
- Diphtheria-tetanus (DT, Td)
- *Haemophilus influenzae* type b (Hib)
- Hepatitis A (HepA)
- Hepatitis B (HepB)
- Human papillomavirus (HPV)
- Inactivated influenza (IIV)
- Meningococcal serogroups A,C,W, Y (MenACWY)
- Meningococcal serogroup B (MenB)
- Pneumococcal conjugate (PCV13)
- Zoster, recombinant (RZV)

Administer inactivated polio (IPV) and pneumococcal polysaccharide (PPSV23) vaccines either IM or subcutaneously (Subcut).

PATIENT AGE	INJECTION SITE	NEEDLE SIZE
Newborn (0–28 days)	Anterolateral thigh muscle	5/8"* (22–25 gauge)
Infant (1–12 mos)	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	5/8*–1" (22–25 gauge)
Children (3–10 years)	Deltoid muscle (upper arm)	5/8*–1" (22–25 gauge)
	Alternate site: Anterolateral thigh muscle	1–1¼" (22–25 gauge)
Children and adults (11 years and older)	Deltoid muscle (upper arm)	5/8†–1" (22–25 gauge)
	Alternate site: Anterolateral thigh muscle	1–1½" (22–25 gauge)

* A 5/8" 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 5/8" needle may be used in patients weighing less than 130 lbs (<60 kg) for IM injection in the deltoid muscle only if the skin is stretched flat between the thumb and forefinger and the needle is inserted at a 90° angle to the skin; a 1" needle is sufficient in patients weighing 130–152 lbs (60–70 kg); a 1–1½" needle is recommended in women weighing 153–200 lbs (70–90 kg) and men weighing 153–260 lbs (70–118 kg); a 1½" needle is recommended in women weighing more than 200 lbs (91 kg) or men weighing more than 260 lbs (118 kg).



Needle insertion

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

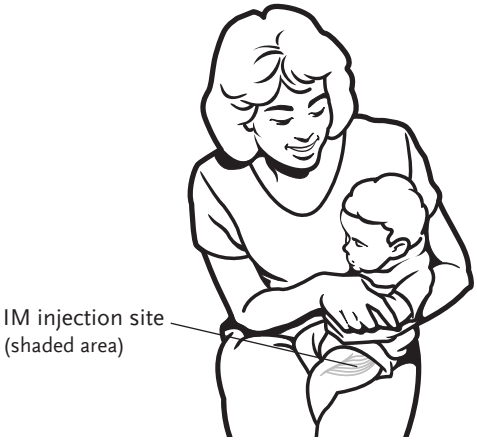
Insert needle at a 90° angle to the skin with a quick thrust.

(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.

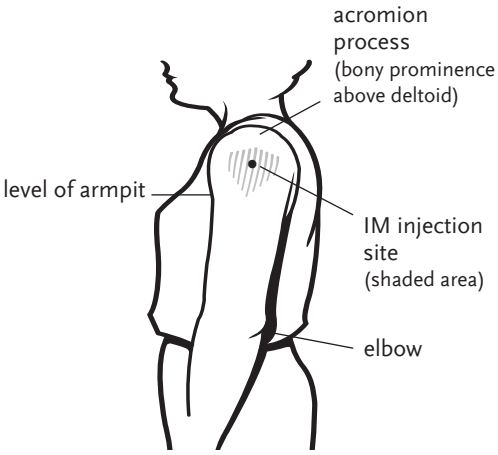
¶ CDC. "General Best Practices Guidelines for Immunization: Best Practices Guidance of the ACIP" at https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/downloads/general-recs.pdf

Intramuscular (IM) injection site for infants and toddlers



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

Intramuscular (IM) injection site for children and adults



Give in the central and thickest portion of the deltoid muscle – above the level of the armpit and approximately 2–3 fingerbreadths (~2") below the acromion process. See the diagram. To avoid causing an injury, do not inject too high (near the acromion process) or too low.

CONTINUED ON THE NEXT PAGE ▶

immunization action coalition
IAC
immunize.org

Saint Paul, Minnesota • 651-647-9009 • www.immunize.org • www.vaccineinformation.org

www.immunize.org/catg.d/p2020.pdf • Item #P2020 (1/18)

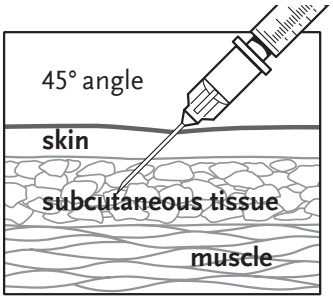
Administration by the Subcutaneous (Subcut) Route

Administer these vaccines via Subcut route

- Measles, mumps, and rubella (MMR)
- Varicella (VAR)
- Zoster, live (ZVL)

Administer inactivated polio (IPV) and pneumococcal polysaccharide (PPSV23) vaccines either IM or Subcut.

PATIENT AGE	INJECTION SITE	NEEDLE SIZE
Birth to 12 months	Fatty tissue overlying the anterolateral thigh muscle	5/8" (23–25 gauge)
12 months and older	Fatty tissue overlying the anterolateral thigh muscle or fatty tissue over triceps	5/8" (23–25 gauge)



Needle insertion

Pinch up on subcutaneous tissue to prevent injection into muscle.

Insert needle at 45° angle to the skin.

(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".

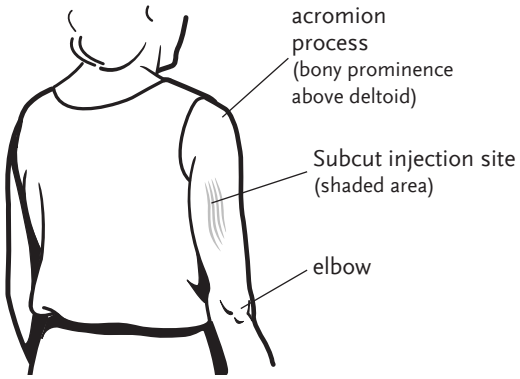
* CDC. "General Best Practices Guidelines for Immunization: Best Practices Guidance of the ACIP" at https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/downloads/

Subcutaneous (Subcut) injection site for infants

Subcut injection site (shaded area)

Insert needle at a 45° angle into fatty tissue of the anterolateral thigh. Make sure you pinch up on subcutaneous tissue to prevent injection into the muscle.

Subcutaneous (Subcut) injection site for children (after the 1st birthday) and adults



Insert needle at a 45° angle into the fatty tissue overlying the triceps muscle. Make sure you pinch up on the subcutaneous tissue to prevent injection into the muscle.

How to Administer 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.

Nasal spray: Influenza vaccine

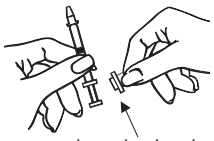
■ *FluMist by MedImmune, Live Attenuated Influenza Vaccine (LAIV)*

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, 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 drops: Rotavirus vaccines

■ *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.

■ *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.

immunization action coalition
IAC
immunize.org

Saint Paul, Minnesota ▪ 651-647-9009 ▪ www.immunize.org ▪ www.vaccineinformation.org

www.immunize.org/catg.d/p2021.pdf ▪ Item #P2021 (10/18)

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, as stated in package insert*	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
Menveo (MenACWY)	GlaxoSmithKline	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})	GlaxoSmithKline	Rabies virus	Sterile water	Immediately†	Refrigerator
Rotarix (RV1)‡	GlaxoSmithKline	RV1	Sterile water, calcium carbonate, and xanthan	24 hrs	Refrigerator or room temp
Shingrix (RZV)	GlaxoSmithKline	RZV	$AS01_B$§ adjuvant suspension	6 hrs	Refrigerator
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 (ZVL)	Merck	LZV	Sterile water	30 min	Refrigerator or room temp

Always refer to package inserts for detailed instructions on reconstituting specific vaccines. In general, follow the steps below.

1 For single-dose vaccine products (exception is Rotarix‡), select a syringe and needle of proper length to be used for both reconstitution and administration of the vaccine. For Rotarix, see the package insert.‡

2 Before reconstituting, check labels on both the lyophilized vaccine vial and the diluent to verify that
- they are the correct two products to mix together,
- the diluent is the correct volume, and
- neither the vaccine nor the diluent has expired.

3 Reconstitute (i.e., mix) vaccine ***just prior to use*** by:
- removing the protective caps and wiping each stopper with an alcohol swab,
- inserting needle of syringe into diluent vial and withdrawing entire contents, and
- injecting diluent into lyophilized vaccine vial and rotating or agitating to thoroughly dissolve the lyophilized powder.

4 Check the appearance of the reconstituted vaccine.
- Reconstituted vaccine may be used if the color and appearance match the description on the package insert.
- If there is discoloration, extraneous particulate matter, obvious lack of resuspension, or the vaccine cannot be thoroughly mixed, mark the vial as "DO NOT USE," return it to proper storage conditions, and contact your state or local health department immunization program or the vaccine manufacturer.

5 If reconstituted vaccine is not used immediately or comes in a multidose vial, be sure to
- clearly mark the vial with the date and time the vaccine was reconstituted,
- maintain the product at 2°–8°C (36°–46°F); do not freeze, and
- use only within the time indicated on chart above.

---

*If the reconstituted vaccine is not used within this time period, it must be discarded.

†For purposes of this guidance, IAC defines "immediately" as within 30 minutes or less.

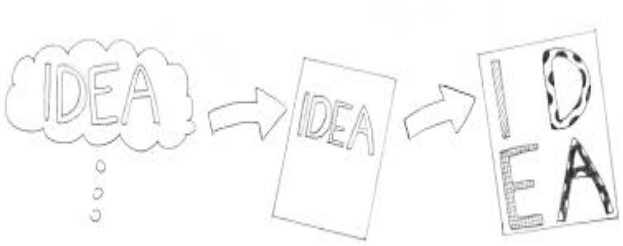
‡Rotarix vaccine is administered by mouth using the applicator that contains the diluent. It is not administered as an injection.

§$AS01_B$ is composed of 3-O-desacyl-4'-monophosphoryl lipid A (MPL) from *Salmonella minnesota* and QS-21, a saponin purified from plant extract *Quillaja saponaria* Molina, combined in a liposomal formulation. The liposomes are composed of dioleoyl phosphatidylcholine (DOPC) and cholesterol in phosphate-buffered saline solution containing disodium phosphate anhydrous, potassium dihydrogen phosphate, sodium chloride, and water for injection.

Immunization Action Coalition Saint Paul, Minnesota ▪ 651-647-9009 ▪ www.immunize.org ▪ www.vaccineinformation.org

www.immunize.org/catg.d/p3040.pdf ▪ Item #P3040 (8/18)

VAERS Reporting



WhyImmunize.org

VAERS Table of Reportable Events Following Vaccination*	
Vaccine/Toxoid	**Event and interval** from vaccination**
Tetanus in any combination; DTaP, DTP, DTP-Hib, DT, Td, TT, Tdap, DTaP-IPV, DTaP-IPV/Hib, DTaP-HepB-IPV	A. Anaphylaxis or anaphylactic shock (7 days) B. Brachial neuritis (28 days) C. Shoulder Injury Related to Vaccine Administration (7 days) D. Vasovagal syncope (7 days) E. Any acute complications or sequelae (including death) of above events (interval - not applicable) F. Events described in manufacturer's package insert as contraindications to additional doses of vaccine (interval - see package insert)
Pertussis in any combination; DTaP, DTP, DTP-Hib, Tdap, DTaP-IPV, DTaP-IPV/Hib, DTaP-HepB-IPV	A. Anaphylaxis or anaphylactic shock (7 days) B. Encephalopathy or encephalitis (7 days) C. Shoulder Injury Related to Vaccine Administration (7 days) D. Vasovagal syncope (7 days) E. Any acute complications or sequelae (including death) of above events (interval - not applicable) F. Events described in manufacturer's package insert as contraindications to additional doses of vaccine (interval - see package insert)
Measles, mumps and rubella in any combination; MMR, MMRV, MM	A. Anaphylaxis or anaphylactic shock (7 days) B. Encephalopathy or encephalitis (15 days) C. Shoulder Injury Related to Vaccine Administration (7 days) D. Vasovagal syncope (7 days) E. Any acute complications or sequelae (including death) of above events (interval - not applicable) F. Events described in manufacturer's package insert as contraindications to additional doses of vaccine (interval - see package insert)
Rubella in any combination; MMR, MMRV	A. Chronic arthritis (42 days) B. Any acute complications or sequelae (including death) of above event (interval - not applicable) C. Events described in manufacturer's package insert as contraindications to additional doses of vaccine (interval - see package insert)
Measles in any combination; MMR, MMRV, MM	A. Thrombocytopenic purpura (7-30 days) B. Vaccine-strain measles viral infection in an immunodeficient recipient o Vaccine-strain virus identified (interval - not applicable) o If strain determination is not done or if laboratory testing is inconclusive (12 months) C. Any acute complications or sequelae (including

VAERS Table of Reportable Events Following Vaccination*	
Vaccine/Toxoid	**Event and interval** from vaccination**
	death) of above events (interval - not applicable) D. Events described in manufacturer's package insert as contraindications to additional doses of vaccine (interval - see package insert)
Oral Polio (OPV)	A. Paralytic polio o in a non-immunodeficient recipient (30 days) o in an immunodeficient recipient (6 months) o in a vaccine-associated community case (interval - not applicable) B. Vaccine-strain polio viral infection o in a non-immunodeficient recipient (30 days) o in an immunodeficient recipient (6 months) o in a vaccine-associated community case (interval - not applicable) C. Any acute complication or sequelae (including death) of above events (interval - not applicable) D. Events described in manufacturer's package insert as contraindications to additional doses of vaccine (interval - see package insert)
Inactivated Polio in any combination-IPV, DTaP-IPV, DTaP-IPV/Hib, DTaP-HepB-IPV	A. Anaphylaxis or anaphylactic shock (7 days) B. Shoulder Injury Related to Vaccine Administration (7 days) C. Vasovagal syncope (7 days) D. Any acute complication or sequelae (including death) of the above event (interval - not applicable) E. Events described in manufacturer's package insert as contraindications to additional doses of vaccine (interval - see package insert)
Hepatitis B in any combination- HepB, HepA-HepB, DTaP-HepB-IPV, Hib-HepB	A. Anaphylaxis or anaphylactic shock (7 days) B. Shoulder Injury Related to Vaccine Administration (7 days) C. Vasovagal syncope (7 days) D. Any acute complications or sequelae (including death) of the above event (interval - not applicable) E. Events described in manufacturer's package insert as contraindications to additional doses of vaccine (interval - see package insert)
Haemophilus influenzae type b in any combination (conjugate)- Hib, Hib-HepB, DTaP-IPV/Hib, Hib-MenCY	A. Shoulder Injury Related to Vaccine Administration (7 days) B. Vasovagal syncope (7 days) C. Any acute complication or sequelae (including death) of above events (interval - not applicable) D. Events described in manufacturer's package insert as contraindications to additional doses of vaccine

VAERS Table of Reportable Events Following Vaccination*	
Vaccine/Toxoid	**Event and interval** from vaccination**
	(interval - see package insert)
Varicella in any combination- VAR, MMRV	A. Anaphylaxis or anaphylactic shock (7 days) B. Disseminated varicella vaccine-strain viral disease. o Vaccine-strain virus identified (time interval unlimited) o If strain determination is not done or if laboratory testing is inconclusive (42 days) C. Varicella vaccine-strain viral reactivation (time interval unlimited) D. Shoulder Injury Related to Vaccine Administration (7 days) E. Vasovagal syncope (7 days) F. Any acute complication or sequelae (including death) of above events (interval - not applicable) G. Events described in manufacturer's package insert as contraindications to additional doses of vaccine (interval - see package insert)
Rotavirus (monovalent or pentavalent) RV1, RV5	A. Intussusception (21 days) B. Any acute complication or sequelae (including death) of above events (interval - not applicable) C. Events described in manufacturer's package insert as contraindications to additional doses of vaccine (interval - see package insert)
Pneumococcal conjugate(7-valent or 13-valent) PCV7, PCV13	A. Shoulder Injury Related to Vaccine Administration (7 days) B. Vasovagal syncope (7 days) C. Any acute complication or sequelae (including death) of above events (interval - not applicable) D. Events described in manufacturer's package insert as contraindications to additional doses of vaccine (interval - see package insert)
Hepatitis A in any combination- HepA, HepA-HepB	A. Shoulder Injury Related to Vaccine Administration (7 days) B. Vasovagal syncope (7 days) C. Any acute complication or sequelae (including death) of above events (interval - not applicable) D. Events described in manufacturer's package insert as contraindications to additional doses of vaccine (interval - see package insert)
Seasonal influenza--trivalent inactivated influenza, quadrivalent inactivated influenza, live attenuated	A. Anaphylaxis or anaphylactic shock (7 days) B. Shoulder Injury Related to Vaccine Administration (7 days) C. Vasovagal syncope (7 days)

VAERS Table of Reportable Events Following Vaccination*	
Vaccine/Toxoid	**Event and interval** from vaccination**
influenza-IIV, IIV3, IIV4, RIV3, ccIIV3, LAIV4	D. Guillain-Barré Syndrome (42 days) E. Any acute complication or sequelae (including death) of above events (interval - not applicable) F. Events described in manufacturer's package insert as contraindications to additional doses of vaccine (interval - see package insert)
Meningococcal - MCV4, MPSV4, Hib-MenCY, MenACWY, MenB	A. Anaphylaxis or anaphylactic shock (7 days) B. Shoulder Injury Related to Vaccine Administration. (7 days) C. Vasovagal syncope (7 days) D. Any acute complication or sequelae (including death) of above events (interval - not applicable) E. Events described in manufacturer's package insert as contraindications to additional doses of vaccine (interval - see package insert)
Human Papillomavirus (Quadrivalent, Bivalent, or 9 valent) - 9vHPV, 4vHPV, 2vHPV	A. Anaphylaxis or anaphylactic shock (7days) B. Shoulder Injury Related to Vaccine Administration (7 days) C. Vasovagal syncope (7 days) D. Any acute complication or sequelae (including death) of above events (interval - not applicable) E. Events described in manufacturer's package insert as contraindications to additional doses of vaccine (interval - see package insert)
Any new vaccine recommended by the Centers for Disease Control and Prevention for routine administration to children	A. Shoulder Injury Related to Vaccine Administration (7 days) B. Vasovagal syncope (7 days) C. Any acute complication or sequelae (including death) of above events (interval - not applicable) D. Events described in manufacturer's package insert as contraindications to additional doses of vaccine (interval - see package insert)

* Effective date: March 21, 2017. The Reportable Events Table (RET) reflects what is reportable by law (42 USC 300aa-25) to the Vaccine Adverse Event Reporting System (VAERS) including conditions found in the manufacturer package insert. In addition, healthcare professionals are encouraged to report any clinically significant or unexpected events (even if not certain the vaccine caused the event) for any vaccine, whether or not it is listed on the RET. Manufacturers are also required by regulation (21CFR 600.80) to report to the VAERS program all adverse events made known to them for any vaccine.

Note that the RET differs from the Vaccine Injury Table (VIT) regarding timeframes of adverse events. Timeframes listed on the RET reflect what is required for reporting, but not what is required for compensation. To view timeframes for compensation, please see the VIT at

VAERS Table of Reportable Events Following Vaccination*	
Vaccine/Toxoid	**Event and interval** from vaccination**
https://www.hrsa.gov/vaccinecompensation/vaccineinjurytable.pdf **Represents the onset interval between vaccination and the adverse event. For a detailed explanation of terms, see the Vaccine Injury Table at **https://www.hrsa.gov/vaccinecompensation/vaccineinjurytable.pdf**	

A list of vaccine abbreviations is located at: **https://www.cdc.gov/vaccines/terms/vacc-abbrev.html**

VAERS Vaccine Adverse Event Reporting System
www.vaers.hhs.gov

Adverse events are possible reactions or problems that occur during or after vaccination. Items **2, 3, 4, 5, 6, 17, 18** and **21** are **ESSENTIAL** and should be completed. Patient identity is kept confidential. Instructions are provided on the last two pages.

INFORMATION ABOUT THE PATIENT WHO RECEIVED THE VACCINE (Use **Continuation Page** if needed)

1. Patient name: (first) _____ (last) _____
Street address: _____
City: _____ State: _____ County: _____
ZIP code: _____ Phone: ( ) _____ Email: _____

2. Date of birth: (mm/dd/yyyy) _____ 3. Sex: ☐ Male ☐ Female ☐ Unknown

4. Date and time of vaccination: (mm/dd/yyyy) _____ Time: hh:mm ☐AM ☐PM

5. Date and time adverse event started: (mm/dd/yyyy) _____ Time: hh:mm ☐AM ☐PM

6. Age at vaccination: ____ Years ____ Months 7. Today's date: (mm/dd/yyyy) _____

8. Pregnant at time of vaccination?: ☐ Yes ☐ No ☐ Unknown
(If yes, describe the event, any pregnancy complications, and estimated due date if known in item 18)

9. Prescriptions, over-the-counter medications, dietary supplements, or herbal remedies being taken at the time of vaccination:

10. Allergies to medications, food, or other products:

11. Other illnesses at the time of vaccination and up to one month prior:

12. Chronic or long-standing health conditions:

INFORMATION ABOUT THE PERSON COMPLETING THIS FORM

13. Form completed by: (name) _____

Relation to patient: ☐ Healthcare professional/staff ☐ Patient (yourself) ☐ Parent/guardian/caregiver ☐ Other: _____

Street address: _____ ☐ Check if same as item 1
City: _____ State: _____ ZIP code: _____
Phone: ( ) _____ Email: _____

14. Best doctor/healthcare professional to contact about the adverse event: Name: _____ Phone: ( ) _____ Ext: _____

INFORMATION ABOUT THE FACILITY WHERE VACCINE WAS GIVEN

15. Facility/clinic name: _____
Fax: ( ) _____
Street address: ☐ Check if same as item 13
_____
_____
City: _____
State: _____ ZIP code: _____
Phone: ( ) _____

16. Type of facility: (Check one)
☐ Doctor's office, urgent care, or hospital
☐ Pharmacy or store
☐ Workplace clinic
☐ Public health clinic
☐ Nursing home or senior living facility
☐ School or student health clinic
☐ Other: _____
☐ Unknown

WHICH VACCINES WERE GIVEN? WHAT HAPPENED TO THE PATIENT?

17. Enter all vaccines given on the date listed in item 4: (Route is HOW vaccine was given, Body site is WHERE vaccine was given) Use **Continuation Page** if needed

Vaccine (type and brand name)	Manufacturer	Lot number	Route	Body site	Dose number in series
select			select	select	select
select			select	select	select
select			select	select	select
select			select	select	select

18. Describe the adverse event(s), treatment, and outcome(s), if any: (symptoms, signs, time course, etc.)
Use **Continuation Page** if needed

19. Medical tests and laboratory results related to the adverse event(s): (include dates)
Use **Continuation Page** if needed

20. Has the patient recovered from the adverse event(s)?: ☐ Yes ☐ No ☐ Unknown

21. Result or outcome of adverse event(s): (Check all that apply)
☐ Doctor or other healthcare professional office/clinic visit
☐ Emergency room/department or urgent care
☐ Hospitalization: Number of days (if known) _____
Hospital name: _____
City: _____ State: _____
☐ Prolongation of existing hospitalization
(vaccine received during existing hospitalization)
☐ Life threatening illness (immediate risk of death from the event)
☐ Disability or permanent damage
☐ Patient died – Date of death: (mm/dd/yyyy) _____
☐ Congenital anomaly or birth defect
☐ None of the above

ADDITIONAL INFORMATION

22. Any other vaccines received within one month prior to the date listed in item 4: Use **Continuation Page** if needed

Vaccine (type and brand name)	Manufacturer	Lot number	Route	Body site	Dose number in series	Date Given
select			select	select	select	
select			select	select	select	

23. Has the patient ever had an adverse event following any previous vaccine?: (If yes, describe adverse event, patient age at vaccination, vaccination dates, vaccine type, and brand name)
☐ Yes _____ ☐ No ☐ Unknown

24. Patient's race: (Check all that apply) ☐ American Indian or Alaska Native ☐ Asian ☐ Black or African American ☐ Native Hawaiian or Other Pacific Islander ☐ White ☐ Unknown ☐ Other: _____

25. Patient's ethnicity: ☐ Hispanic or Latino ☐ Not Hispanic or Latino ☐ Unknown

26. Immuniz. proj. report number: (Health Dept use only) _____

COMPLETE ONLY FOR U.S. MILITARY/DEPARTMENT OF DEFENSE (DoD) RELATED REPORTS

27. Status at vaccination: ☐ Active duty ☐ Reserve ☐ National Guard ☐ Beneficiary ☐ Other: _____

28. Vaccinated at Military/DoD site: ☐ Yes ☐ No

SAVE

17. Enter all vaccines given on the date listed in item 4 (continued):					Dose number in series
Vaccine (type and brand name)	Manufacturer	Lot number	Route	Body site	
select			select	select	select
select			select	select	select
select			select	select	select
select			select	select	select

22. Any other vaccines received within one month prior to the date listed in item 4 (continued):					Dose number in series	Date Given
Vaccine (type and brand name)	Manufacturer	Lot number	Route	Body site		
select			select	select	select	
select			select	select	select	
select			select	select	select	
select			select	select	select	
select			select	select	select	
select			select	select	select	

Use the space below to provide any additional information (indicate item number):

SAVE

RETURN TO PAGE 1

COMPLETING THE VACCINE ADVERSE EVENT REPORTING SYSTEM (VAERS) FORM

GENERAL INSTRUCTIONS

- Submit this form electronically using the Internet. For instructions, visit www.vaers.hhs.gov/uploadfile/.
- If you are unable to submit this form electronically, you may fax it to VAERS at 1-877-721-0366.
- If you need additional help submitting a report you may call the VAERS toll-free information line at 1-800-822-7967, or send an email to info@vaers.org.
- Fill out the VAERS form as completely as possible and use the **Continuation Page** if needed. Use a separate VAERS form for each individual patient.
- If you do not know exact numbers, dates, or times, please provide your best guess. You may leave these spaces blank if you are not comfortable guessing.
- You can get specific information on the vaccine and vaccine lot number by contacting the facility or clinic where the vaccine was administered.
- 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.
- Healthcare professionals should refer to the VAERS Table of Reportable Events at www.vaers.hhs.gov/reportable.html for the list of adverse events that must be reported by law (42 USC 300aa-25).
- Healthcare professionals treating a patient for a suspected vaccine adverse event may need to contact the person who administered the vaccine in order to exchange information and decide how best to complete and submit the VAERS form.

SPECIFIC INSTRUCTIONS

Items 2, 3, 4, 5, 6, 17, 18 and 21 are **ESSENTIAL** and should be completed.

- **Items 4 and 5**: Provide dates and times as specifically as you can and enter as much information as possible (e.g., enter the month and year even if you don't know the day). If you do not know the exact time, but know it was in the morning ("AM") or afternoon or evening ("PM"), please provide that information.
- **Item 6**: If you fill in the form by hand, provide age in years. If a child is less than 1 year old, provide months of age. If a child is more than 1 year old but less than 2 years old, provide year and months (e.g., 1 year and 6 months). If a child is less than 1 month of age when vaccinated (e.g., a birth dose of hepatitis B vaccine) then answer 0 years and 0 months, but be sure to include the patient's date of birth (item 2) and date and time of vaccination (item 4).
- **Item 8:** If the patient who received the vaccine was pregnant at time of vaccination, select "Yes" and describe the event, any pregnancy complications, and estimated due date if known in item 18. Otherwise, select "No" or "Unknown."
- **Item 9:** List any prescriptions, over-the-counter medications, dietary supplements, herbal remedies, or other non-traditional/ alternative medicines being taken by the patient when the vaccine(s) was given.
- **Item 10:** List any allergies the patient has to medications, foods, or other products.
- **Item 11:** List any short-term or acute illnesses the patient had on the date of vaccination AND up to one month prior to this date (e.g., cold, stomach flu, ear infection, etc.). This does **NOT** include the adverse event you are reporting.
- **Item 12:** List any chronic or long-standing health conditions the patient has (e.g., asthma, diabetes, heart disease).
- **Item 13:** List the name of the person who is completing the form. Select the "Check if same as item 1" box if you are the patient or if you live at the same address as the patient. The contact information you provided in item 1 will be automatically entered for you. Otherwise, please provide new contact information.
- **Item 14:** List the doctor or other healthcare professional who is the best person to contact to discuss the clinical details of the adverse event.
- **Item 15:** Select the "Check if same as item 13" box if the person completing the form works at the facility that administered the vaccine(s). The contact information provided in item 13 will be automatically entered for you. Otherwise, provide new contact information.
- **Item 16:** Select the option that best describes the type of facility where the vaccine(s) was given.

RETURN TO PAGE 1

- **Item 17:** Include only vaccines given on the date provided in item 4. The vaccine route options include:
  - Injection/shot (intramuscular, subcutaneous, intradermal, jet injection, and unknown)
  - By mouth/oral
  - In nose/intranasal
  - Other (specify)
  - Unknown

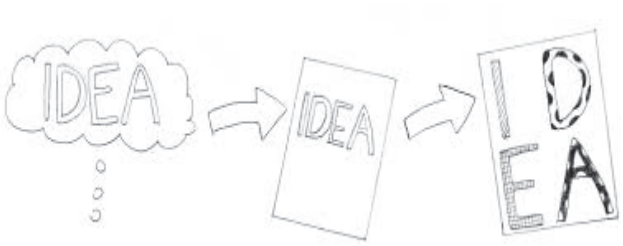
  For body site, the options include:
  - Right arm
  - Left arm
  - Arm (side unknown)
  - Right thigh
  - Left thigh
  - Thigh (side unknown)
  - Nose
  - Mouth
  - Other (specify)
  - Unknown

  For vaccines given as a series (i.e., 2 or more doses of the same vaccine given to complete a series), list the dose number for the vaccine in the last column named "Dose number in series."
- **Item 18:** Describe the adverse event(s), treatment, and outcome(s). Include signs and symptoms, when the symptoms occurred, diagnosis, and treatment. Provide specific information if you can (e.g., if patient had a fever, provide the temperature).
- **Item 19:** List any medical tests and laboratory results related to the adverse event(s). Include abnormal findings as well as normal or negative findings.
- **Item 20:** Select "Yes" if the patient's health is the same as it was prior to the vaccination or "No" if the patient has not returned to the same state of health prior to the vaccination, and provide details in item 18. Select "Unknown" if the patient's present condition is not known.
- **Item 21:** Select the result(s) or outcome(s) for the patient. If the patient did not have any of the outcomes listed, select "None of the above." Prolongation of existing hospitalization means the patient received a vaccine during a hospital stay and an adverse event following vaccination occurred that resulted in the patient spending extra time in the hospital. Life threatening illness means you believe this adverse event could have resulted in the death of the patient.
- **Item 22:** List any other vaccines the patient received within one month prior to the vaccination date listed in item 4.
- **Item 23:** Describe the adverse event(s) following any previous vaccine(s). Include patient age at vaccination, dates of vaccination, vaccine type, and brand name.
- **Item 24:** Check all races that apply.
- **Item 25:** Check the single best answer for ethnicity.
- **Item 26:** For health department use only.
- **Items 27 and 28:** Complete only for U.S. Military or Department of Defense related reports. In addition to active duty service members, Reserve and National Guard members, beneficiaries include: retirees, their families, survivors, certain former spouses, and others who are registered in the Defense Enrollment Eligibility Reporting System (DEERS).

GENERAL INFORMATION

- VAERS (www.vaers.hhs.gov) is a national vaccine safety monitoring system that collects information about adverse events (possible reactions or problems) that occur during or after administration of vaccines licensed in the United States.
- VAERS protects patient identity and keeps patient identifying information confidential.
- The Health Insurance Portability and Accountability Act (HIPAA) Privacy Rule permits reporting of protected health information to public health authorities including the Centers for Disease Control and Prevention (CDC) and U.S. Food and Drug Administration (FDA) (45 CFR § 164.512(b)).
- VAERS accepts all reports without judging the importance of the adverse event or whether a vaccine caused the adverse event.
- Acceptance of a VAERS report by CDC and FDA does not constitute admission that the vaccine or healthcare personnel caused or contributed to the reported event.
- The National Vaccine Injury Compensation Program (VICP) is administered by the Health Resources and Services Administration (HRSA). The VICP is separate from the VAERS program and reporting an event to VAERS does not constitute filing a claim for compensation to the VICP (see www.hrsa.gov/vaccinecompensation/index.html).
- 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.

Resources



WhyImmunize.org

Key Vaccination Resources for Healthcare Professionals

With so many vaccination training materials available, it can be difficult for providers to determine which ones best suit their needs. The key resources listed below provide a strong foundation for building and sustaining vaccination skills. They also offer tools for staying up to date and references to address specific clinical situations.

The key resources shown below are divided into several helpful categories:

1. **Foundational content** with which every vaccinator should be familiar,
2. **Supplemental content** useful after completing foundational training,
3. **Additional tools** to help providers grow in vaccination expertise, and
4. **Major organization websites** offering additional vaccination resources.

Acronym list appears at end of document

1 Foundational content for all vaccinators

RESOURCE, DESCRIPTION, HYPERLINK	SOURCE	CONTENT
ACIP's *General Best Practice Guidelines for Immunization* (revised regularly) Previously known as *General Recommendations*. Components include: Timing and spacing of vaccines, contraindications and precautions, preventing and managing adverse events, vaccine administration, storage and handling, altered immunocompetence, vaccination records, and more. (HTML or PDF, 190+ pages) ▶ www.cdc.gov/vaccines/hcp/acip-recs/general-recs ▶ UPDATES: www.cdc.gov/vaccines/hcp/acip-recs/general-recs/general-recs-errata.html	CDC	Scheduling Storage Screening Technique
U.S. Immunization Schedules (revised annually) U.S. immunization schedules for children/adolescents and adults in various formats, as well as easy-to-read versions for the public. Corresponding app available for iOS or Android. (PDF) ▶ www.cdc.gov/vaccines/schedules/hcp/imz/child-adolescent.html ▶ www.cdc.gov/vaccines/schedules/hcp/imz/adult.html	CDC	Scheduling
CDC's Recommended and Minimum Ages and Intervals Between Vaccine Doses Scroll down to Table 3.1. Easy-to-read table showing ages and intervals. (HTML or PDF) ▶ www.cdc.gov/vaccines/hcp/acip-recs/general-recs/timing.html#antibody	CDC	Scheduling
CDC's Vaccine Information Statements (VISs) and translations into 50 languages IAC's VIS gateway page includes links to each VIS in English, plus translations in up to 50 languages, chart of current VIS dates. (PDF) ▶ www.immunize.org/vis	CDC IAC	Dialogue

CONTINUED ON NEXT PAGE ▶

Immunization Action Coalition (IAC) Handouts: Administering Vaccines

Gateway to practical, user-friendly educational materials for staff: free print-ready documents covering site selection, needle length, skills checklist, and more. (PDF)

IAC | Technique

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

CDC's Vaccine Administration Gateway Page

Offers step-by-step guidance on administering vaccines, reviewing patient histories, documentation, plus self-paced vaccine-administration course (CE credit). (variously PDF or HTML, plus video)

CDC | Technique

▶ www.cdc.gov/vaccines/hcp/admin/admin-protocols.html. Instructional videos appear in the Resource Library section at the bottom of this web page.

Immunization Action Coalition (IAC): Multiple Topics

Gateway pages to dozens of categories of IAC educational materials, including vaccination schedules, handouts for parents, screening checklists, standing orders, and resources on storage and handling, adolescent and adult vaccination, vaccine confidence, and managing fever/pain. (HTML and PDF)

IAC | Scheduling, Storage, Technique, Vaccines, Diseases

▶ www.immunize.org/handouts

CDC's *Vaccine Storage and Handling Toolkit*

Best practices for managing inventory and transport; storing and preparing; monitoring temperature; maintaining storage and temperature-monitoring equipment; preparing for emergency situations; standard operating procedures for routine and emergency management. (PDF, 45+ pages)

CDC | Storage

▶ www.cdc.gov/vaccines/hcp/admin/storage/toolkit/index.html

IAC Express, free email news service (published weekly)

Provides current information you need to know. Stay up to date on product approvals, recommendations, revised VISs and translations, new resources from IAC and other organizations, new publications, conferences, and CE opportunities. Subscribe at www.immunize.org/subscribe. (Emailed and online publication, HTML and PDF)

IAC | News

▶ www.immunize.org/express

Immunize.org

Immunization Action Coalition (IAC) website, featuring a wealth of practical vaccination tools for front-line healthcare providers, including hundreds of pages of user-friendly print materials, VISs, package inserts, photos, vaccine mandate information by state, and much more. (HTML and PDF)

IAC | Vaccines, Diseases, Dialogue, Storage, Techniques

▶ www.immunize.org

Ask the Experts – IAC's experienced clinical experts answer vaccine questions

More than 1,000 practical answers to common questions in dozens of categories, covering vaccine administration, precautions and contraindications, scheduling vaccines, storage and handling, vaccine recommendations, and vaccine safety. (HTML)

IAC | Vaccines, Diseases, Scheduling, Storage, Screening

▶ www.immunize.org/askexperts

CONTINUED ON NEXT PAGE ▶

State, City, Territory, or IHS Immunization Program Contacts

Immunization Program Websites: www.immunize.org/states
Program Coordinators: www.immunize.org/coordinators
Immunization Information Systems (IIS) and vaccination records: www.cdc.gov/vaccines/programs/iis/contacts-locate-records.html

IAC | Advice

CDC contact for non-urgent vaccination questions

▶ nipinfo@cdc.gov

CDC | Advice

2 Important supplemental content, rationale, and applied clinical guidance (valuable after foundational training)

RESOURCE, DESCRIPTION, HYPERLINK	SOURCE	CONTENT
ACIP Recommendations gateway page Links to dozens of current ACIP recommendations, sortable by vaccine or date, as well as archived recommendations. (HTML and PDF) ▶ www.cdc.gov/vaccines/hcp/acip-recs/index.html ▶ www.immunize.org/acip	CDC IAC	Vaccines Diseases Screening
IAC's Clinic Tools, Helpful Resources for Your Immunization Practice Seven categories covering administering vaccines, adult vaccination, documentation, scheduling, screening for contraindications, storage and handling, vaccine recommendations, and more. (PDF) ▶ www.immunize.org/clinic	IAC	Technique Scheduling Storage Screening Vaccines
Immunization Techniques: Best Practices with Infants, Children, and Adults (2010) California Department of Public Health training on skills for vaccine administration. Covers injectable, oral, and nasal vaccines; selecting, preparing, and administering vaccines; patient comfort, staff safety and training; demonstrations. (DVD) ▶ www.youtube.com/watch?v=WsZ6NEijlfI&feature=youtu.be ▶ www.immunize.org/dvd ($17 for one, volume discounts available)	EZIZ IAC	Technique
CHOP VEC's Vaccine- and Vaccine Safety-Related Q&A Sheets for Parents Links to dozens of Q&A sheets about vaccines and vaccine safety (e.g., vaccine ingredients, autism, "too many" vaccines). Available in English and Spanish. (PDF) ▶ www.chop.edu/centers-programs/vaccine-education-center/resources/vaccine-and-vaccine-safety-related-qa-sheets	CHOP VEC	Dialogue
CDC's *You Call the Shots* web-based training course Dozens of modules that discuss diseases and vaccine recommendations. Each module provides self-test questions, resource materials, glossary, and CE credit. (Online course – slide-based, interactive, no audio) ▶ www.cdc.gov/vaccines/ed/youcalltheshots.html	CDC	Vaccines Diseases Technique Storage

CONTINUED ON NEXT PAGE ▶

CDC's Vaccines and Immunizations for Healthcare Professionals home page

Gateway to clinical resources, administration tools, training, patient education, and more. (variously PDF or HTML, plus videos and slides)

▶ www.cdc.gov/vaccines/hcp/index.html

CDC — Vaccines, Diseases, Dialogue, Screening

CDC's *Epidemiology and Prevention of Vaccine-Preventable Diseases* – "The Pink Book"

Info on each routine vaccine and diseases they prevent; chapters on vaccination principles, general recommendations, safety, storage and handling, and administration. (Book: HTML or PDF, 500+ pages, dozens of chapters, free online; or $45 for soft-bound edition. Webinar series available online in 15 segments)

▶ www.cdc.gov/vaccines/pubs/pinkbook/index.html
▶ www.cdc.gov/vaccines/ed/webinar-epv/index.html

CDC — Vaccines, Diseases, Technique, Scheduling, Storage

IAC's *Vaccinating Adults: A Step-By-Step Guide* (October 2017)

Downloadable guidebook on adult immunization, providing how-to information to help providers enhance or implement adult immunization services in any clinical setting. (Book: PDF, 140+ pages)

▶ www.immunize.org/guide

IAC — Workflow, Screening, Storage, Technique

3 References and additional ways to grow in vaccine expertise

RESOURCE, DESCRIPTION, HYPERLINK	SOURCE	CONTENT

Package Inserts (i.e., prescribing information) for each FDA-licensed vaccine

Links to each FDA-licensed vaccine's current prescribing information, either at manufacturer's website or FDA website. (PDF, dozens of product groups)

▶ www.immunize.org/packageinserts

IAC — Reference

CDC Immunization Education and Training Offerings

Various archived webcasts and other self-paced learning modules, some with CE credit. (variously PDF or HTML, plus video and slides)

▶ www.cdc.gov/vaccines/ed/index.html

CDC — Training

Provider Resources for Vaccine Conversations with Parents

Materials to help assess parents' needs, identify the role they want to play in making decisions for their child's health, and then communicate in ways that meet their needs. (variously PDF or HTML)

▶ www.cdc.gov/vaccines/hcp/conversations/index.html

CDC, AAP, AAFP — Dialogue

EZIZ's Job Aids for Vaccine Storage and Handling from California VFC program

Dozens of products, info on vaccine management, refrigerator and freezer setup, monitoring temperatures, transporting vaccines, and inventory. (PDF)

▶ eziz.org/resources/storage-handling-job-aids

EZIZ — Storage

CONTINUED ON NEXT PAGE ▶

EZIZ's Job Aids for Vaccine Administration from California VFC program

Dozens of products, many helpful 1-page charts on preparing vaccines, avoiding mix-ups, and more. (PDF)

EZIZ | Technique

▶ eziz.org/resources/vaccine-admin-job-aids

The Vaccine Handbook: A Practical Guide for Clinicians – "The Purple Book" by Gary S. Marshall, MD)

Comprehensive reference book on vaccines and vaccination, including discussion of how to address concerns of parents and patients. (PDF, Print copy at pcibooks.com/books/view/49 [$39.95])

Private | Diseases, Dialogue, Scheduling, Screening

▶ App at Apple App Store (free), registration required

CHOP VEC's *Vaccine Update for Healthcare Professionals* newsletter (monthly)

Monthly newsletter featuring articles, roundup of news and journal articles, "Technically Speaking" column from IAC, and information about new resources. (HTML)

CHOP VEC | News

▶ www.chop.edu/centers-programs/vaccine-update/newsletter

4 Organization websites for further guidance and resources

AAFP
www.aafp.org/patient-care/public-health/immunizations.html

AAP
www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/immunizations/Pages/Immunizations-home.aspx

ACOG
www.acog.org/programs/immunization-for-women

ACP
www.acponline.org/clinical-information/clinical-resources-products/adult-immunization

AIM
www.immunizationmanagers.org

APhA
www.pharmacist.com/immunization-center

DoD Continuous Quality Immunization Improvement Process
www.health.mil/Military-Health-Topics/Health-Readiness/Immunization-Healthcare

National Network of Immunization Coalitions
www.immunizationcoalitions.org

NAIIS, The Summit
www.izsummitpartners.org

NFID
www.nfid.org/immunization

VYF
www.vaccinateyourfamily.org

ACRONYMS

AAFP American Academy of Family Physicians
AAP American Academy of Pediatrics
ACIP Advisory Committee on Immunization Practices
ACOG American College of Obstetricians and Gynecologists
ACP American College of Physicians
AIM Association of Immunization Managers
APhA American Pharmacists Association
CDC Centers for Disease Control and Prevention
CE Continuing education
CHOP VEC Children's Hospital of Philadelphia Vaccine Education Center
DoD Department of Defense
EZIZ EZ immunization services, California Department of Public Health (CDPH) Immunization Branch
IAC Immunization Action Coalition
IHS Indian Health Service
NAIIS National Adult and Influenza Immunization Summit
NFID National Foundation for Infectious Diseases
VYF Vaccinate Your Family