



Georgia Department of Public Health

Vaccine Administration Technique



We Protect Lives.



Disclosure Statements

- Neither the planners of this session nor I have any conflicts of interest or financial relationship with pharmaceutical companies, biomedical device manufacturers, or corporations whose products and services are related to the vaccines we discuss.
- There is no commercial support being received for this event.
- The mention of specific brands of vaccines in this presentation is for the purpose of providing education and does not constitute endorsement.
- The GA Immunization Program utilizes ACIP recommendations as the basis for this presentation and for our guidelines, policies, and recommendations.
- For certain vaccines this may represent a slight departure from or off-label use of the vaccine package insert guidelines.

Objectives

- Discuss staff training needs and strategies for communication
- List positioning, comforting and pain control techniques
- Review infection control guidelines
- Discuss vaccine preparation, administration routes, sites, and needle sizes
- Explain vaccine administration special situations
- Review documentation requirements
- Discuss avoiding vaccine administration errors and managing adverse events

Why Do We Immunize?



We Immunize To Prevent These



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The Impact of Vaccines

Disease	Average Annual Reported Cases Pre-vaccine*	Cases in U.S. 2014**	% Reduction In U.S. 2013
Smallpox	48,164	Eradicated worldwide in 1980	
Diphtheria	175,885	1	99.9%
Measles	503,282	667	99.8%
Mumps	152,209	1,223	99.6%
Pertussis	147,271	32,971	77.6%
Polio (paralytic)	16,316	0	100%
Rubella	47,745	6	99.9%
Congenital Rubella Syndrome	823	1	99.8%
Tetanus	1,314	25	98.0%
H. Influenzae Type b Age<5 years	20,000	40	99.8%

*MMWR 48(12);243-248 April 2, 1999

** MMWR 64(36);1019-1033 September 18, 2015

Vaccine Administration Technique Training

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A red decorative bar at the bottom of the slide, starting with a curved shape on the left and ending with a straight line on the right.

Staff Training and Education

All personnel who will administer vaccines should receive competency-based training and education on vaccine administration before providing vaccines to patients. Providers need to orient new staff to vaccines used in their office and validate staff's knowledge and skills about vaccine administration with a skills checklist.

You can obtain templates for "Skills Checklist for Immunization" at

- www.eziz.org/assets/docs/IMM-694.pdf.
- <http://www.immunize.org/handouts/administering-vaccines.asp>

Providers should remember to include temporary personnel who may be filling in on days when the facility is short staffed or helping during peak times such as flu season.

Communication

- Discuss vaccines indicated on day of visit
- Use Vaccine Information Statements (VIS)
- Encourage questions
- Address concerns
- Sign consent form (consent for services)
- Inform of next immunization due date
- Displaying a positive attitude through facial expressions, body language, and comment
- Using a soft and calm tone of voice
- Making eye contact, even with small children
- Explaining why vaccines are needed (e.g., “this medicine will protect you from getting sick” or “this shot is a shield to protect your body against infection)
- Being honest and explaining what to expect (e.g., do not say that the injection will not hurt).

Positioning & Comforting Techniques

- Comfort
- Safety
- Age
- Activity level
- Site of administration
- IM: Position limb to allow relaxation of muscle injected
 - Deltoid: flex arm
 - Anterolateral thigh: some degree of internal rotation
- Infants and Young Children:
 - Hold securely in parent's lap
- Older Children:
 - Sit on parent's lap or edge of exam table and hug parent's chest
- Adolescents and adults should be seated for immunizations

ACIP recommends observing client for 15 minutes after immunization (s) while seated or lying down.

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Pain Control

- Physical Techniques
- Psychological Techniques
- Pharmacologic Techniques

*Antipyretics - An age-appropriate dose of a non-aspirin-containing pain reliever may be considered to decrease discomfort and fever if it should occur **after** vaccination. ACIP does **not** recommend the prophylactic use of analgesics before or at the time of vaccination.

Infection Control

- Handwashing
 - Critical to prevent the spread of illness and disease
 - Gloves
 - OSHA regulations do not require gloves to be worn when administering vaccines unless the person administering the vaccine is likely to come into contact with potentially infectious body fluids or has open lesions on the hands
 - Equipment Disposal
 - Used needles should not be recapped, cut or detached from the syringes before disposal
 - Filled sharps containers should be disposed of properly; never dispose of sharps containers or empty vaccine vials at an outreach site.
- DHR Rule 290-5-60,"Sharps Injury Prevention"

Vaccine Preparation

- Syringe/Needle Selection
- Inspecting Vaccine
- Reconstitution
- Filling Syringes



Diluent + Lyophilized Powder = Reconstituted Vaccine

Injections

Routes, Site and Needle Size Based upon:

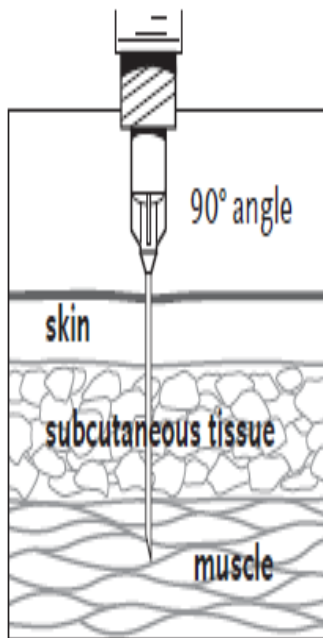
- Age
- Volume of material
- Viscosity of material
- Size of muscle
- Recommended depth

Importance of Administering Vaccines Correctly

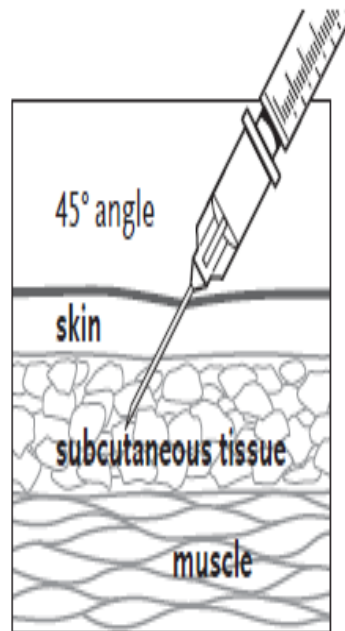
- Ensure Optimal Vaccine Efficacy
- Decreased Localized and Systemic Reactions
- Decreased Pain

Routes of Administration

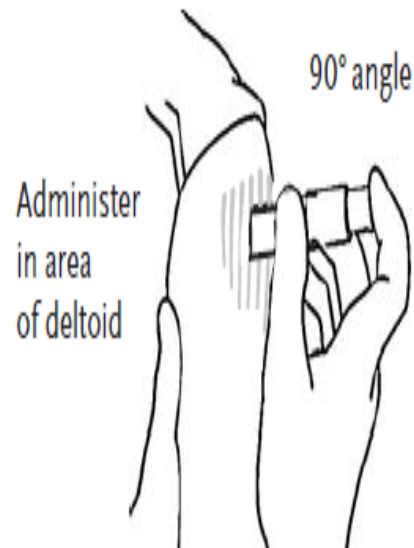
Intramuscular (IM) injection



Subcutaneous (SC) injection



Intradermal (ID) administration
of Fluzone ID vaccine



Intranasal (IN) administration
of Flumist (LAIV) vaccine



Oral (PO) Route

- Administer prior to injections
- Administer slowly
- Careful not to initiate gag reflex
- Never administer or squirt directly into the throat



Intranasal (IN) Route

- LAIV, FluMist
- Seated upright position with head tilted back
- Breathe normally
- Tip of sprayer inserted slightly in naris
- Do Not repeat if patient coughs, sneezes, or expels dose



SC Injections

Subcutaneous (SC) Injections

Administer these vaccines via SC route
MMR, varicella, meningococcal polysaccharide (MPSV4), and zoster (shingles). Administer polio (IPV) and pneumococcal polysaccharide vaccine (PPSV23) either SC or IM.

Injection site

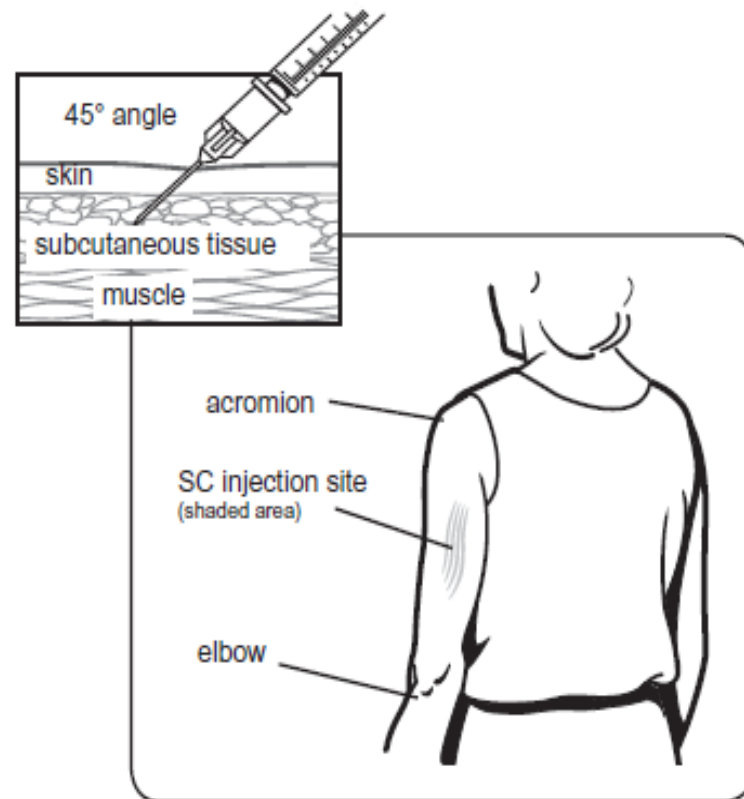
Give in fatty tissue over the triceps (see the diagram).

Needle size

23–25 gauge, 5/8" needle

Needle Insertion

- Pinch up on the tissue to prevent injection into the muscle. Insert the needle at a 45° angle to the skin.
- Separate two injections given in the same area of fatty tissue by a minimum of 1".



Vaccines Administered SC



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IM Injections

Intramuscular (IM) Injections

Administer these vaccines via IM route

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

Injection site

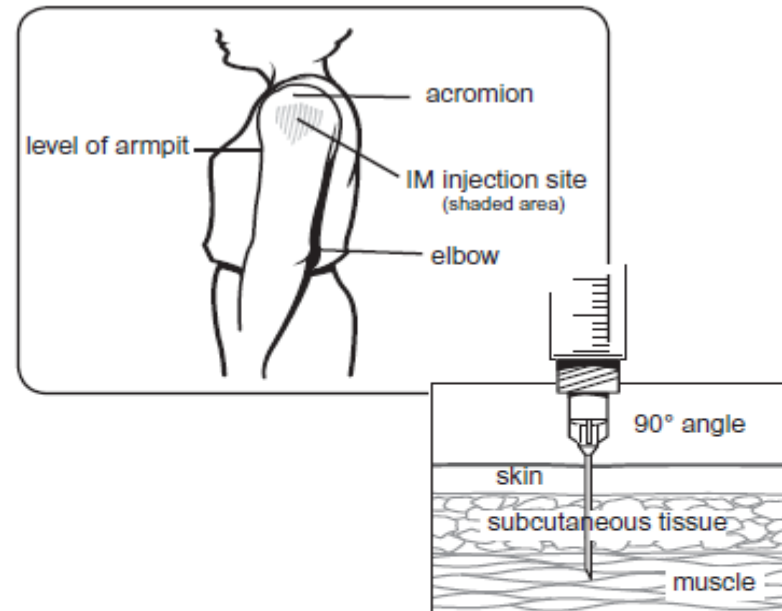
Give in the central and thickest portion of the deltoid—above the level of the armpit and below the acromion (see the diagram).

Needle size

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

Needle Insertion

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



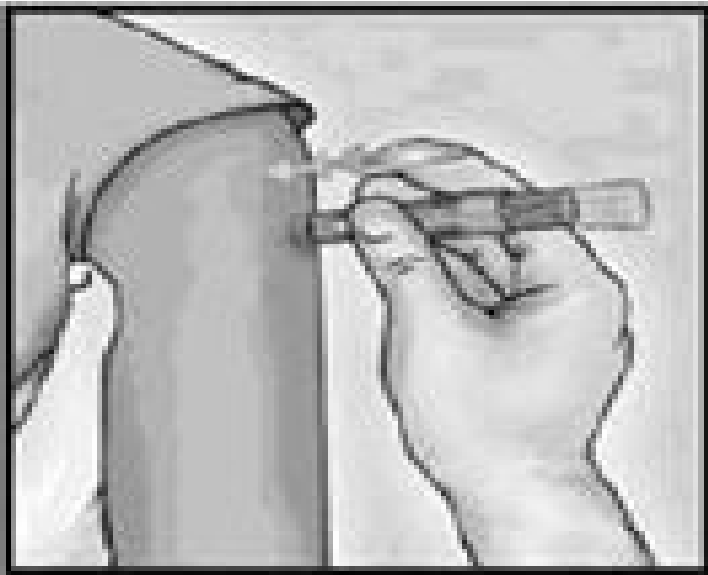
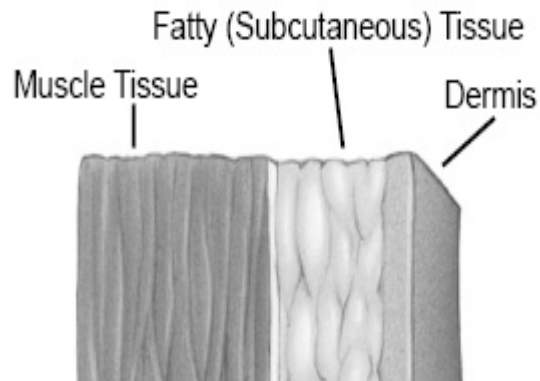
Note: A 5/8" needle is sufficient in adults weighing less than 130 lbs (<60 kg) for IM injection in the deltoid muscle only if the subcutaneous tissue is not bunched and the injection is made at a 90-degree angle; a 1" needle is sufficient in adults weighing 130–152 lbs (60–70 kg); a 1–1½" needle is recommended in women weighing 152–200 lbs (70–90 kg) and men weighing 152–260 lbs (70–118 kg); a 1½" needle is recommended in women weighing more than 200 lbs (90 kg) or men weighing more than 260 lbs (more than 118 kg).

Vaccines Administered IM



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Intradermal (ID) Route



- Fluzone licensed for use in persons 18 through 64 years

- Deltoid region of upper arm used

- Patient seated with arm bent at elbow and hand on hip to ensure proper administration

- Not administered into the volar aspect of the forearm or by the intradermal technique used to administer a tuberculin skin test

Special Situations

- Multiple Vaccinations
- Persons with Bleeding Disorders
- Nonstandard Administration
- Managing Acute Vaccine Reactions

Multiple Vaccines

- When multiple vaccines are administered, separate sites should ordinarily be used if possible.
- When necessary, two vaccines may be given in the same limb at a single visit.
- The thigh is the preferred site for infants and smaller children for two simultaneous IM injections because of its greater muscle mass.
- The distance for separating the two injections is arbitrary but should be sufficient (e.g., 1 to 2 in. apart) so that local reactions are unlikely to develop.
- Multiple vaccines should not be mixed in a single syringe unless specifically licensed and labeled for administering in one syringe.

Bleeding Disorders

Individuals with a bleeding disorder or who are receiving anticoagulant therapy may develop hematomas in IM injection sites. When any intramuscularly administered vaccine is indicated for a patient with a bleeding disorder, the vaccine should be administered intramuscularly if a physician familiar with the patient's bleeding risk determines that the vaccine can be administered by this route with reasonable safety.

Non-Standard Administration

- CDC discourages deviating from the recommended route, site, dosage, or number of doses for any vaccine. Deviation can result in reduced protection and increase the risk of an exaggerated local reaction. For certain vaccines, the ACIP recommends revaccination if a nonstandard route or site is used.
- Larger than recommended dosages can be hazardous because of excessive local or systemic concentrations of antigens or other vaccine constituents deposited into the tissue.

*Pre-Drawing Vaccines



CDC recommends that providers draw up vaccines only at the time of administration. **Do Not** pre-draw doses before they are needed.

Managing Acute Vaccine Reactions

- Thorough screening for contraindications and precautions
- Procedures in place for managing reaction
- Be familiar with the signs & symptoms of anaphylaxis
- Know staff role in the event of an emergency
- CPR certified
- Emergency cart & equipment available

Always Document...

- Accept only written documentation of prior immunizations
- After vaccine administration, document:
 - ✓ Publication date of VIS & date VIS given
 - ✓ Date, site, route, antigen(s), manufacturer, lot #
 - ✓ Person administering vaccine, practice name and address
 - ✓ Vaccine refusals with a signed "Refusal to Vaccinate Form"
 - ✓ GA law does not require signed consent for immunizations

CHICKENPOX VACCINE

WHAT YOU NEED TO KNOW

1 Why get vaccinated?

Chickenpox (also called varicella) is a common childhood disease. It is usually mild, but it can be serious, especially in young infants and adults.

- The chickenpox virus can be spread from person to person through the air, or by contact with fluid from chickenpox blisters.
- It causes a rash, itching, fever, and tiredness.
- It can lead to severe skin infections, scars, pneumonia, brain damage, or death.
- A person who has had chickenpox can get a painful rash called shingles years later.
- About 12,000 people are hospitalized for chickenpox each year in the United States.
- About 100 people die each year in the United States as a result of chickenpox.

People who do not get the vaccine until 15 years of age or older should get 2 doses, 4-8 weeks apart.

Ask your doctor or nurse for details.

Chickenpox vaccine may be given at the same time as other vaccines.

3 Some people should not get chickenpox vaccine or should wait

- People should not get chickenpox vaccine if they have ever had a life-threatening allergic reaction to gelatin, the antibiotic neomycin, or (for receiving a second dose) a previous dose of chickenpox vaccine.
- People who are moderately or severely ill at the time the shot is scheduled should usually wait until they recover before getting chickenpox vaccine.

MENINGOCOCCAL VACCINE

WHAT YOU NEED TO KNOW

1 What is meningococcal disease?

Meningococcal disease is a serious illness, caused by a bacteria. It is the leading cause of bacterial meningitis in children 2-18 years of age in the United States. Meningitis is an infection of the brain and spinal cord lining.

2 Who should get meningococcal vaccine and why?

Meningococcal vaccine is not routinely recommended for most people. People who should get the vaccine include:

- U.S. MILITARY PERSONNEL
- People who travel to or live in countries with outbreaks of meningococcal disease.
- A person traveling to or living in a part of the world where meningococcal disease is common, such as West Africa.
- A person who has a damaged spleen, or whose spleen has been removed.
- A person who has inherited complement component deficiency (an immune system disorder).

Anyone who gets meningococcal disease, that it is most common in kids at a level that increases of some to be national.

The vaccine should only be given if it is needed.

Refusal to Vaccinate

Child's Name _____ Child's ID# _____

Parent's/Guardian's Name(s) _____

My child's health care provider, _____, has advised me that my child (named above) should receive the following vaccines:

Recommended	Declined	
<input type="checkbox"/>	Hepatitis B vaccine	<input type="checkbox"/>
<input type="checkbox"/>	Diphtheria, Tetanus, acellular Pertussis (DTaP) vaccine	<input type="checkbox"/>
<input type="checkbox"/>	Diphtheria Tetanus (DT or dT) vaccine	<input type="checkbox"/>
<input type="checkbox"/>	<i>Haemophilus influenzae</i> type B (Hib) vaccine	<input type="checkbox"/>
<input type="checkbox"/>	Pneumococcal conjugate vaccine	<input type="checkbox"/>
<input type="checkbox"/>	Polio vaccine (IPV)	<input type="checkbox"/>
<input type="checkbox"/>	Measles, mumps, rubella (MMR) vaccine	<input type="checkbox"/>
<input type="checkbox"/>	Varicella (chickenpox) vaccine	<input type="checkbox"/>

The 7 Rights of Vaccine Administration

- ✓ Right **Patient**
- ✓ Right **Vaccine or Diluent**
- ✓ Right **Time***
- ✓ Right **Dosage**
- ✓ Right **Route, Needle Length, Technique**
- ✓ Right **Site** for route indicated
- ✓ Right **Documentation**



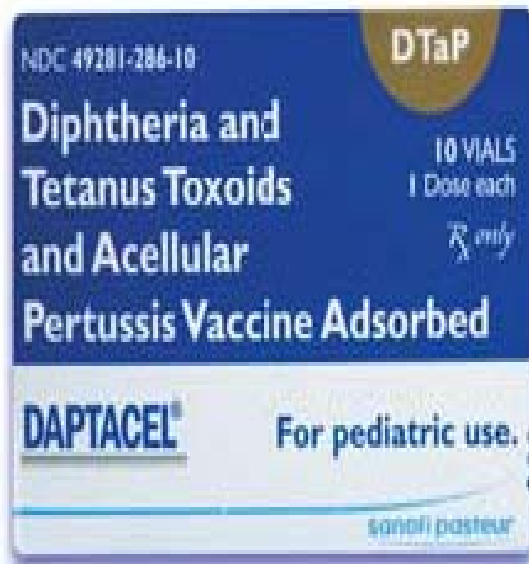
*** Correct age, appropriate interval, and administer before vaccine or diluent expires**

Avoiding Vaccine Errors

- When possible, involve staff in selection of vaccine products
- Keep current reference materials on each vaccine
- Rotate vaccines
- Consider the potential for product mix-up
- Triple Check Your work

Avoiding Vaccine Errors

DTaP



Tdap



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Test Your Knowledge!

Four month old Lucas was given Tdap instead of DTaP.

What should be done?

Test Your Knowledge!

Four month old Lucas was given Tdap instead of DTaP.

What should be done?

If Tdap was inadvertently given to a child under age 7 years, it should not be counted as either the first, second, or third dose of DTaP. The dose should be repeated with DTaP. Continue vaccinating on schedule. If the dose of Tdap was administered for the fourth or fifth DTaP dose, the Tdap dose can be counted as valid. **Please remind your staff to always check the vaccine vial at least 3 times before administering any vaccine.**

Test Your Knowledge!

Lillian, a 50 year old grandmother, was given DTaP instead of Tdap.

Does she need to receive one dose of Tdap?

Test Your Knowledge!

Lillian, a 50 year old grandmother, was given DTaP instead of Tdap.

Does she need to receive one dose of Tdap?

Lillian received the appropriate amount of tetanus toxoid and MORE diphtheria toxoid and pertussis antigen than is recommended. Count the dose as Tdap. The patient does not need a repeat dose of Tdap.

Take measures to prevent this error in the future.

Check Expiration Dates



Vaccine Expiration Date:
1/15/08
Note: Use through January 15, 2008. Do NOT use on or after January 16, 2008.



Vaccine Expiration Date:
1/08
Note: Use through January 31, 2008. Do NOT use on or after February 1, 2008.

Test Your Knowledge!

Five-year-old Tonia received her second MMR a week ago.

How long should she wait before receiving live attenuated influenza vaccine (LAIV)?

Test Your Knowledge!

Five-year-old Tonia received her second MMR a week ago.

How long should she wait before receiving live attenuated influenza vaccine (LAIV)?

LAIV can be administered simultaneously with another live vaccine (for example, MMR, varicella), but if not given at the same time, ACIP recommends waiting four weeks before administering the second live vaccine.

Vaccine Injury Compensation Program (VICP)

VICP is a no-fault alternative to the traditional tort system for resolving vaccine injury claims. It was established as part of the National Childhood Vaccine Injury Act of 1986, after a rash of lawsuits against vaccine manufacturers and healthcare providers threatened to cause vaccine shortages and reduce vaccination rates.

Who can file a claim?

- Claim must be filed by individual, parent or guardian, legal representative, non-United States citizen
- Must show that injury is on “Vaccine Injury Table”

In addition, to be eligible to file a claim, the effects of the person’s injury must have:

- Lasted for more than 6 months after vaccine was given
- Resulted in hospital stay **and** surgery
- Resulted in death

VAERS

<http://vaers.hhs.gov/>

The screenshot shows the VAERS website homepage. At the top, there is a navigation bar with links for Home, Contact Us, Help, and en Español. Below this is a search bar and a main navigation menu with categories like Report an Adverse Event, About VAERS, VAERS Data, Vaccine Resources, Information for Healthcare Professionals, Information for U.S. States and Territories, and Information for Vaccine Manufacturers. The main content area is divided into several sections: a descriptive text about the VAERS system, a central purple box with a checklist for reporting a reaction and a photo of a man, and a green box with featured resources including a seasonal flu update and government agencies. The footer contains video thumbnails.

VAERS Vaccine Adverse Event Reporting System

Home | Contact Us | Help | en Español

Search web site:

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

The Vaccine Adverse Event Reporting System (VAERS) is a national vaccine safety surveillance program co-sponsored by the Centers for Disease Control and Prevention (CDC) and the Food and Drug Administration (FDA). VAERS is a post-marketing safety surveillance program, collecting information about adverse events (possible side effects) that occur after the administration of vaccines licensed for use in the United States.

VAERS provides a nationwide mechanism by which adverse events following immunization may be reported, analyzed, and made available to the public. VAERS also provides a vehicle for disseminating vaccine safety-related information to parents and guardians, health care providers, vaccine manufacturers, state vaccine programs, and other constituencies. [more...](#)

Have you or your child had a reaction following vaccination?

1. Contact your health care provider
2. [Report the reaction](#)
3. [Submit Follow-Up Information](#)
4. Visit the [National Vaccine Injury Compensation](#) (if appropriate)

Important note: CDC and FDA do not provide individual medical treatment, advice, or diagnosis. If you need individual medical or health care advice, consult a qualified health care provider.

¿Ha tenido usted o su hijo una reacción adversa después de recibir una vacuna?

1. Contacte a su proveedor de salud
2. [Reporte una reacción adversa](#)
3. Visite el [Programa Nacional de Compensación por Daños Derivados de Vacunas](#) (si es necesario)

VAERS Data last updated: 12/15/2014

Featured Resources

Seasonal Flu Update

- [Summary of 2014-2015 Influenza Vaccine Information](#)

Government Agencies

- [Immunization Safety Office](#)
- [National Center for Immunization and Respiratory Diseases](#)
- [National Vaccine Injury Compensation Program](#)
- [National Vaccine Program](#)

VIDEO: An Overview | VIDEO: Searching the

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Are **YOU** up to date?

Healthcare Personnel (HCP) Need These Immunizations

- Annual influenza vaccine
- Tdap or Td
- Hepatitis B (exposure risk) *Check immunity*

Validate immune status of:

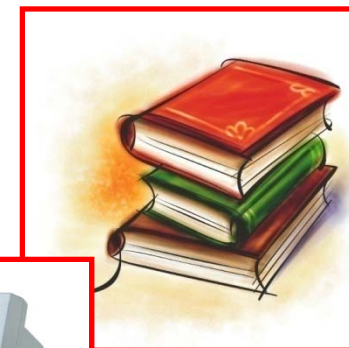
- Varicella
- Measles, Mumps & Rubella(MMR)



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Resources

- Local health department
- District Immunization Coordinator
- GA Immunization Program Office
 - On call Help line: 404-657-3158
 - GRITS Help Line:1-866-483-2958
 - VFC Help Line:1-800-848-3868
 - Website <http://dph.georgia.gov/immunization-section>
 - Your local Immunization Program Consultant (IPC)
- GA Chapter of the AAP
- GA Academy of Family Physicians



Internet Resources

Georgia Department of Public Health

- <http://dph.georgia.gov/immunization-section>

CDC Immunization information

- <http://www.cdc.gov/vaccines/>

CDC Flu information

- <http://www.cdc.gov/flu/>

Immunization Action Coalition

- www.immunize.org

