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# Overarching Framework of CDC Influenza Messaging

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## [Take 3 Messages](#Take_3)

* CDC recommends a three-step approach to fighting the flu: vaccination, everyday preventive actions, and use of antiviral drugs if your doctor prescribes them.
	1. Take time to get a flu vaccine.
		+ CDC recommends a yearly flu vaccine as the first and most important step in protecting against flu.
		+ While there are many different flu viruses, the flu vaccine protects against the viruses that research suggests will circulate the most this season.
		+ Everyone 6 months of age and older should get a 2013-2014 flu vaccine, ideally by October. However, as long as flu viruses are circulating, vaccination should continue throughout the flu season, even in January or later.
		+ Vaccination of people at high risk of developing serious influenza-related complications is especially important to decrease their risk of severe flu illness.
		+ People at high risk of serious flu complications include young children, pregnant women, people with certain chronic health conditions like asthma, diabetes, or heart and lung disease, and people 65 years and older.
		+ The full list of high risk conditions is available on the CDC website at <http://www.cdc.gov/flu/about/disease/high_risk.htm>.
		+ Vaccination also is especially important for health care workers, and others who live with or care for people at high risk for serious flu-related complications to keep from spreading the flu to them.
		+ Children younger than 6 months are at high risk of serious flu illness, but are too young to get a flu vaccine. If you live with or care for an infant younger than 6 months of age, you should get a flu vaccine.

**See** [**Vaccine section**](#Vaccine) **for more key messages related to influenza vaccination.**

* 1. Take everyday preventive actions to stop the spread of germs that can cause respiratory illness like the flu. While these actions are helpful, remember that vaccination is the most important step in preventing the flu.
		+ Cover your nose and mouth with a tissue when you cough or sneeze. After using a tissue, throw it in the trash and wash your hands.
		+ Try to avoid close contact with sick people.
		+ If you are sick with flu-like illness, CDC recommends that you stay home for at least 24 hours after your fever is gone except to get medical care or for other necessities. (Your fever should be gone without the use of a fever-reducing medicine.)
		+ While sick, limit contact with others as much as possible to keep from infecting them.
		+ Avoid touching your eyes, nose or mouth because germs spread this way.
		+ Wash your hands often with soap and water. If soap and water are not available, use an alcohol-based hand rub.
		+ For more information, see <http://www.cdc.gov/flu/protect/habits/>
	2. Take flu antiviral drugs if your doctor prescribes them.
* If you get the flu, antiviral drugs can treat your illness.
	+ - Antiviral drugs are prescription medicines (pills, liquid or an inhaled powder) and are not available over-the-counter.
		- Antiviral drugs are different from antibiotics. Antiviral drugs fight viruses (like flu viruses) in your body. Antibiotics fight bacterial infections.
		- Not everyone who has flu symptoms needs antiviral drugs. Your doctor will decide whether antiviral drugs are right for you.
		- Antiviral drugs can make illness from flu milder and shorten the time you are sick.
* There also are data showing that antiviral drugs may prevent serious flu complications. For those with flu who also have a high risk medical condition, treatment with an antiviral drug can mean the difference between having a milder illness versus a very serious illness that could result in a hospital stay.
* Antiviral drugs are not a substitute for getting a flu vaccine. The flu vaccine is the best way modern medicine currently has to protect against this serious disease.
	+ - If you get the flu, the earlier you begin taking antivirals, the better. They work best if started within two days of symptoms first appearing, but there is data to suggest they can still be beneficial even up to 5 days after getting sick. This would be especially important for a high-risk person that is very sick.
		- For more information about antiviral drugs, visit <http://www.cdc.gov/flu/antivirals/index.htm>
* For more information about the flu or the flu vaccine, call 1-800-CDC-INFO, visit [www.cdc.gov/flu](http://www.cdc.gov/flu), or [m.cdc.gov/flu](http://m.cdc.gov/flu) on your mobile phone or PDA, or sign up for CDC flu texts at <http://www.cdc.gov/mobile/textmessaging/>.

# Statements for General Audiences

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## [Disease](#_Disease)

1. Influenza (the flu) can be a serious disease that can lead to hospitalization and sometimes even death. Anyone can get sick from the flu.
2. While the flu can make anyone sick, certain people are at greater risk for serious complications from the flu. These people include:
	1. adults 65 years of age and older
	2. children younger than 5, but especially younger than 2 years old
	3. people with chronic lung disease (such as asthma and chronic obstructive pulmonary disease), diabetes (type 1 and 2), heart disease, neurologic conditions, and certain other long-term medical conditions, even if these are well managed
	4. people who are morbidly obese (body mass index of 40 or greater)
	5. pregnant women and women within the first two weeks after delivery (2 weeks post-partum)
		* 1. other groups of people at increased risk of flu complications are listed at http://www.cdc.gov/flu/about/disease/high\_risk.htm
3. Much of the U.S. population is at increased risk from serious flu complications, either because of their age or because they have a medical condition like asthma, diabetes (type 1 and 2), heart conditions, or because they are pregnant.
	1. For example, more than 30 percent of people 50 through 64 years of age have one or more chronic medical conditions that put them at increased risk of serious complications from flu.
	2. For example, all children younger than 5 years (and especially children younger than 2 years), and all adults 65 years and older, are at increased risk of serious flu-related complications.
4. Symptoms of influenza can include fever, cough, sore throat, runny or stuffy nose, body aches, headache, chills and fatigue. Some people may also have vomiting and diarrhea.
5. People may also be infected with influenza and have no symptoms at all, or have only respiratory symptoms without a fever.
6. Flu viruses are constantly changing. Each flu season, different flu viruses can spread, and they can affect people differently based on differences in their immune systems. Even healthy children and adults can get very sick from the flu.
7. In the United States, thousands of healthy adults and children see a doctor or are hospitalized from flu complications each year. Flu vaccination can help protect you and your family from the flu and its complications.
8. Flu seasons are unpredictable. The severity of influenza seasons can differ substantially from year to year. Over a period of 30 years, between 1976 and 2006, estimates of yearly flu-associated deaths in the United States range from a low of about 3,000 to a high of about 49,000 people during the most severe season.
	* + - 1. Each year in the United States on average: An estimated 5-20 percent of the population can be infected with the flu, and more than 200,000 people may be hospitalized during a flu season.
				2. The 2009 H1N1 pandemic is an example, from recent years, of how unpredictable the flu can be. For more information about the 2009 H1N1 pandemic, see <http://www.cdc.gov/h1n1flu/>.
9. Since 2004-2005, flu-related deaths in children reported to CDC during regular influenza seasons have ranged from 35 deaths (during 2011-2012) to over 150 deaths (during 2012-2013). However, during the 2009 H1N1 influenza pandemic, (April 15, 2009 to October 2, 2010), 348 pediatric deaths were reported to CDC.
	1. More information about pediatric deaths since the 2004-2005 flu season is available in the [interactive pediatric death web application](http://gis.cdc.gov/GRASP/Fluview/PedFluDeath.html) at <http://gis.cdc.gov/GRASP/Fluview/PedFluDeath.html>.
10. To date, most flu-related pediatric deaths have occurred in children who were not vaccinated against flu.
11. An average of over 200,000 people in the United States are hospitalized each year from flu and its related complications. Older adults, specifically those 65 years of age and older, typically account for about 60% of these flu-related hospitalizations each year and about 90% of flu-related deaths. (Thompson et al JAMA 2004, Dao et al JID 2010; 202(6):881–888)
12. The 2012-2013 season began early, was moderately severe and lasted longer than average compared with previous seasons (see “[2012-2013 Flu Season Drawing to a Close](http://www.cdc.gov/flu/spotlights/2012-2013-flu-season-wrapup.htm)” for more information). The 2012-13 season was a reminder of the unpredictability of influenza.
13. It is not possible to predict how mild or severe the 2013-2014 season will be.

## [V](#_Vaccine)[accine](#_Vaccine)

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1. The first and most important step in protecting against the flu is to get a flu vaccine each season.
	1. Everyone 6 months of age and older is recommended to get the 2013-2014 flu vaccine, with rare exceptions.
2. You should get your flu vaccine soon after it becomes available, ideally by October. However, as long as flu viruses are circulating, vaccination should continue throughout the flu season, even in January or later.
3. It’s best to get vaccinated before the flu starts to spread in your community. It is not possible to know exactly when the flu season will start each year. While seasonal influenza outbreaks can happen as early as October, most of the time influenza activity peaks in January or later. Since it takes about two weeks after vaccination for antibodies to develop in the body that protect against influenza virus infection, it is best that people get vaccinated so they are protected before influenza begins spreading in their community.
4. CDC recommends an annual flu vaccine as the first and best way to protect against influenza. There are two reasons for getting a flu vaccine every year:
	* 1. The first reason is that because flu viruses are constantly changing, flu vaccines may be updated from one season to the next to protect against the viruses research indicates will be most common during the upcoming flu season.
		2. The second reason that annual vaccination is recommended is that a person’s immune protection from the vaccine declines over time. Annual vaccination is needed for optimal protection.
5. Flu vaccination prevented an estimated 13.6 million flu cases, 5.8 million medical visits and nearly 113,000 flu-related hospitalizations in the United States over a 6-year period (2005-2011), according to a study by CDC experts.
6. The composition of the flu vaccine is reviewed each year. If needed, the vaccine is updated to protect against the flu viruses that research indicates will be the most common during the upcoming season. Even in years when the composition does not change, new flu vaccine is manufactured every season.
7. A flu vaccine reduces your risk of illness, hospitalization, or even death.
8. When you get your flu vaccine, your body starts to make antibodies that help protect you from the flu. It takes about two weeks after vaccination for the immune system to fully respond and for these antibodies to provide protection.
9. Protect your family from the flu by getting yourself and your family members vaccinated.
10. Getting a yearly flu vaccine is especially important for people at high risk of serious flu-related health complications and their close contacts.
	1. People at high risk of serious flu complications include:
		* young children (those younger than 5 years of age, particularly those younger than 2 years of age),
		* adults age 65 years and older,
		* people with weakened immune systems,
		* pregnant women,
		* persons aged 18 years or younger who are receiving long-term aspirin therapy,
		* American Indian/Alaska Natives,
		* people who are morbidly obese (Body Mass Index of 40 or greater),
		* people with chronic medical conditions like asthma, diabetes (type 1 and type 2), neurologic conditions, and heart and lung disease.
	2. For more information about people at high risk of serious flu-related complications visit: <http://www.cdc.gov/flu/about/disease/high_risk.htm>.
11. Flu vaccines are offered in many locations, including: doctor’s offices, clinics, health departments, retail stores, pharmacies, health centers, as well as by many employers and schools.
12. Even if you don’t have a regular doctor or nurse, you can get a flu vaccine somewhere else, like a health department, pharmacy, urgent care clinic, or maybe your school, college health center or work.
13. Find a flu vaccination clinic near you with the vaccine finder at <http://vaccine.healthmap.org/>.
14. Flu vaccines cannot cause influenza infection or illness.
	1. The flu vaccine cannot give you the flu. The most common side effects from a flu shot are a sore arm and maybe a low fever or achiness. The nasal spray flu vaccine might cause congestion, runny nose, sore throat, or cough. If you do experience them at all, these side effects are mild and short-lived.
15. The flu vaccine is used to prevent flu illness, not to treat it.
16. A flu vaccine protects against influenza viruses. It will not protect against other respiratory viruses that may cause symptoms that are similar to those seen with flu infection.
17. Some people should talk with a doctor before getting an influenza vaccine, including:
	1. People who have had an allergic reaction to flu vaccines in past
	2. People who have ever had Guillain-Barré Syndrome (a severe paralytic illness, also called GBS)
	3. People with an allergy to chicken eggs.
	* Studies have shown that flu vaccine can be safely received in people with a history of mild reactions to egg with some additional safety measures.
		+ People with mild reactions to eggs — specifically, those who have only experienced hives — should receive the influenza vaccine with some additional safety measures, such as observing patient for a short time following vaccination.
	* People who have certain severe reactions to eggs should either (1) receive a vaccine that does not use eggs in the manufacturing process or (2) be referred to a health care professional with expertise in the management of allergic conditions for further risk assessment before being vaccinated.
	* For the 2013-2014 flu season, there is a flu vaccine option (Flublok®) for persons 18 through 49 years of age that does not use the influenza virus or chicken eggs in its manufacturing process. This vaccine is egg-free.
	* A summary of recommendations for vaccination of persons with egg allergy can be found at: <http://www.cdc.gov/flu/professionals/acip/2013-summary-recommendations.htm#egg-allergy>.
18. People who are moderately or severely ill, with or without fever, should generally wait until they recover to get vaccinated.
19. Medicare covers both flu and pneumonia vaccines with no co-pay or deductible. Children eligible for Medicaid and Children’s Health Insurance Program (CHIP) are eligible for flu vaccines and all other vaccines recommended by the Advisory Committee on Immunization Practices (ACIP).
20. In addition to flu vaccine, other vaccines are recommended for adults to prevent serious diseases such as shingles, pneumonia caused by pneumococcal bacteria, hepatitis, meningitis and whooping cough.
21. Unfortunately, few adults are aware that they need other vaccines, leaving themselves and their loved ones unnecessarily vulnerable to serious diseases.
22. Adults should talk with their doctors to learn which other vaccines are recommended for them and take steps to stay up-to-date to ensure that they have the best protection.
23. Visit CDC’s website on adult vaccination: <http://www.cdc.gov/vaccines/adults>.
24. Take the CDC quiz to find out which vaccines might be right for you: <http://www.cdc.gov/vaccines/adultquiz>.
25. Starting in October, more Americans, even those with preexisting conditions, will qualify for health insurance coverage that fits their budget and needs. It includes many free screenings, vaccinations, and counseling. Visit [www.HealthCare.gov](https://www.healthcare.gov/) or call 1-800-318-2596 to learn more.
26. For more information about the seriousness of influenza and the benefits of influenza vaccination, talk to your doctor or nurse, visit [www.cdc.gov/flu](http://www.cdc.gov/flu), or call CDC at 1-800-CDC-INFO.

2013-2014 Vaccine Options and Availability

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1. There are several flu vaccine options available for the 2013-2014 flu season.
2. Traditional flu vaccines made to protect against three different flu viruses (called “trivalent” vaccines) will be available this season. In addition, this season, flu vaccines made to protect against four different flu viruses (called “quadrivalent” vaccines) also will be available.
	1. The trivalent flu vaccine will protect against two influenza A viruses and an influenza B virus. The following trivalent flu vaccines will be available:
* [standard dose trivalent shots](http://www.cdc.gov/flu/about/qa/flushot.htm) that are manufactured using virus grown in eggs. These are approved for people ages 6 months and older. There are different brands of this type of vaccine, and each is approved for different ages. However, there is a brand that is approved for children as young as 6 months old and up. <http://www.cdc.gov/flu/about/qa/flushot.htm>
* A standard dose [trivalent shot containing virus grown in cell culture](http://www.cdc.gov/flu/protect/vaccine/cell-based.htm), which is approved for people 18 and older.

<http://www.cdc.gov/flu/protect/vaccine/cell-based.htm>

* a standard dose [trivalent shot that is egg-free](http://www.cdc.gov/flu/protect/vaccine/qa_flublok-vaccine.htm), approved for people 18 through 49 years of age.

<http://www.cdc.gov/flu/protect/vaccine/qa_flublok-vaccine.htm>

* a [high-dose trivalent shot](http://www.cdc.gov/flu/protect/vaccine/qa_fluzone.htm), approved for people 65 and older.

<http://www.cdc.gov/flu/protect/vaccine/qa_fluzone.htm>

* a standard dose [intradermal trivalent shot](http://www.cdc.gov/flu/protect/vaccine/qa_intradermal-vaccine.htm), which is injected into the skin instead of the muscle and uses a much smaller needle than the regular flu shot, approved for people 18 through 64 years of age.

<http://www.cdc.gov/flu/protect/vaccine/qa_intradermal-vaccine.htm>

* 1. The quadrivalent flu vaccine will protect against two influenza A viruses and two influenza B viruses. The following quadrivalent flu vaccines will be available:
* a standard dose quadrivalent shot
* a [standard dose quadrivalent flu vaccine, given as a nasal spray](http://www.cdc.gov/flu/about/qa/nasalspray.htm), approved for healthy\* people 2 through 49 years of age

<http://www.cdc.gov/flu/about/qa/nasalspray.htm>

(\*”Healthy” indicates persons who do not have an underlying medical condition that predisposes them to influenza complications.)

1. CDC does not recommend one flu vaccine over the other. The important thing is to get a flu vaccine every year.
2. Manufacturers estimate 135-139 million doses of influenza vaccine will be produced for the U.S. market this season. During 2012-2013, 134.9 million doses of flu vaccine were distributed in the United States.
	* Of the overall influenza vaccine supply projected for the 2013-2014 season, manufacturers estimate that 30-32 million doses will be available as quadrivalent flu vaccines.
		+ Of the total quadrivalent influenza vaccine supply, approximately 13-15 million doses of the nasal spray influenza vaccine (LAIV) will be available.
3. Manufacturers began shipping flu vaccines for the 2013-2014 season in late July. Distribution will continue through the fall.
4. While some vaccine became available late July and August, the vaccine supply is usually most abundant in September and October and thereafter. (For information about the recommended timing of influenza vaccination, see section “[Timing of Vaccination](#Timing).”)
5. Some points to keep in mind:
6. All nasal spray flu vaccine will be quadrivalent vaccine.
7. Some quadrivalent flu shots will be available, but most flu shots will still be trivalent vaccines this season.
8. Don’t delay getting a flu vaccine if you want a quadrivalent vaccine and it isn’t available. Most of the flu vaccine offered this year will be trivalent. The important thing is to get vaccinated against influenza.
9. Every flu vaccine is formulated to offer important protection from flu.
10. The 2012‐2013 flu season began early, and so it provides a good example of the unpredictable nature of flu season. You can do your part to protect yourself and those around you by getting your vaccine before flu starts spreading in your community.
11. More quadrivalent vaccine is expected to be available during future seasons. Quadrivalent flu vaccines may eventually replace trivalent vaccines.
12. Flu vaccines can be given in two ways, as a shot or nasal spray.
13. The [flu shot](http://www.cdc.gov/flu/about/qa/flushot.htm) is an inactivated vaccine that is made with killed influenza virus
	* The age indications for the different flu shots vary, but all may be given to people with chronic medical conditions.
14. The [nasal spray](http://www.cdc.gov/flu/about/qa/nasalspray.htm) flu vaccine is made with live, weakened influenza viruses
	* The nasal spray vaccine is approved for use in most healthy\* people 2 through 49 years of age who are not pregnant. (\* Healthy indicates persons who do not have an underlying medical condition that predisposes them to influenza complications.)
	* See <http://www.cdc.gov/flu/about/qa/nasalspray.htm> for a complete list of those who can and cannot receive the nasal spray flu vaccine.
	* All nasal spray flu vaccine for the 2013-2014 season will be made to protect against four flu viruses (quadrivalent flu vaccine).
15. Those who care for or are in contact with persons who have severely impaired immune function (i.e., immune function is impaired to a level that requires a protective environment) should receive the flu shot rather than the nasal spray vaccine.
16. There is no preferential recommendation between any formulations of flu vaccine, including between trivalent or quadrivalent vaccine or between injection (the flu shot) or nasal spray vaccine. CDC recommends everyone 6 months of age and older get a yearly flu vaccine. However, clinicians should note the recommended age groups, possible contraindications and precautions for each vaccine.
17. For the complete list of flu vaccines approved for use during the 2013-2014 season, visit: <http://www.cdc.gov/flu/professionals/acip/2013-summary-recommendations.htm#table1>.

2013-2014 Vaccine Formulation

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1. Each year, experts must select which influenza viruses the flu vaccine should protect against many months in advance of the influenza season in order for vaccine to be produced and delivered on time.
2. Because influenza (flu) viruses are constantly changing and the composition of the flu vaccine must be determined so far in advance, selecting the right influenza viruses for the flu vaccine to protect against is a challenging task.
3. In 2012, the Food and Drug Administration approved flu vaccines that protect against four viruses (called quadrivalent vaccines) for use in the United States, These vaccines will be available as both a nasal spray and a shot during the 2013-2014 flu season.
4. Trivalent and quadrivalent flu vaccines will be available during the 2013-2014 season.
	1. Trivalent flu vaccines will protect against three flu viruses: an influenza A (H1N1) virus, an influenza A (H3N2) virus and an influenza B virus.
	2. Quadrivalent flu vaccines will protect against four flu viruses: an influenza A (H1N1) virus, an influenza A (H3N2) virus and two influenza B viruses (from Yamagata and Victoria lineages).
5. Quadrivalent vaccines are intended to provide broader protection against influenza B viruses by adding another B virus to the vaccine.
6. The specific viruses were recommended by the U.S. Food and Drug Administration’s Vaccines and Related Biological Products Advisory Committee (VRBPAC) in February 27, 2013.
7. International surveillance indicated that these viruses would be the ones most likely to cause illness in the United States during the 2013-2014 season.
8. For more information about the composition of this year’s flu vaccine, go to <http://www.cdc.gov/flu/professionals/acip/vaxcomposition.htm>
9. For more information on how viruses for the seasonal vaccine are selected, go to <http://www.cdc.gov/flu/about/qa/vaccine-selection.htm>.

# Statements for Parents

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1. Flu can be a serious disease for children of all ages and can lead to hospitalization or, in rare cases, even death.
	1. [Alternative] Flu can be a serious disease for children of all ages, causing them to miss school, activities, or even be hospitalized.
2. Vaccination is especially important for certain people who are high risk of serious complications from flu or who are in close contact with people at high risk, including the following groups:
3. Children younger than 5 years of age, and especially those younger than 2 years of age
4. Children of any age with a long-term health condition like asthma, diabetes or disorders of the brain or nervous system. These children are at higher risk of serious flu complications (like pneumonia). For the complete list of those at high risk, visit <http://www.cdc.gov/flu/about/disease/high_risk.htm>.
5. Adults who meet any of the following criteria:
* Are close contacts of, or live with, children younger than 5 years old.
* Are out-of-home caregivers (nannies, daycare providers, etc.) of children younger than 5 years old.
* Live with or have other close contact with children of any age with a chronic health problem (asthma, diabetes, etc.).
* Are health care workers
1. Every year in the United States, otherwise healthy children are hospitalized or die from flu complications.
2. In the United States, each year an average of 20,000 children younger than 5 years old are hospitalized because of flu complications.
3. Children younger than 5 years old and especially those younger than 2 years old, are at higher risk of serious flu complications, including hospitalization and death, compared to older children.
4. The risk of serious flu complications requiring hospitalization is highest among children younger than 6 months of age, but they are too young to be vaccinated. The best way to protect them is to make sure people around them are vaccinated, and for their mother to get vaccinated during her pregnancy.
5. Children were significantly impacted by the 2009 H1N1 virus. This virus is expected to continue circulating during the 2013-2014 flu season, along with other influenza viruses.
6. During the 2012-2013 influenza season, more than 150 flu-related pediatric deaths were reported.
	1. During the 2011-2012 season, 35 influenza-associated pediatric deaths were reported to CDC, representing the lowest number of pediatric deaths recorded since this kind of record-keeping began.
	2. During the 2009-2010 flu season (April 15, 2009-September 30, 2010), 348 influenza-associated pediatric deaths were reported to CDC as a result of the 2009 H1N1 pandemic.
	3. Among children 6 months and older, about 80-90% of flu-related pediatric deaths occur in children who have not received a flu vaccine.
	4. More information about pediatric deaths since the 2004-2005 flu season is available in the [interactive pediatric death web application](http://gis.cdc.gov/GRASP/Fluview/PedFluDeath.html) at <http://gis.cdc.gov/GRASP/Fluview/PedFluDeath.html>.
7. Vaccination is the first and most important step in protecting your family against the flu.
8. Children 6 months and older are recommended to get a yearly flu vaccine.
9. Getting vaccinated during pregnancy can protect the mother and the baby for up to 6 months after birth.
10. Vaccination is especially important for children with asthma, diabetes (type 1 and 2), or certain other long-term medical conditions because they are at increased risk for serious complications from flu if they get sick.
	1. The flu can make some medical conditions worse. For example, children with asthma (even if it’s mild or controlled by medication) are more likely to develop serious complications from the flu (like pneumonia) and/or a worsening of their chronic condition (for example, asthma attacks) compared to children without asthma.
	2. Children with asthma (even if the asthma is mild or controlled by medication) are more likely to be hospitalized for flu-related complications than children who don’t have asthma.
	3. If you live with or care for a child who is at high risk of serious complications from flu, it is particularly important for you and your children over six months old to get vaccinated.
	4. If your child is at high risk of serious flu complications and gets sick with the flu, your doctor may recommend treatment with influenza antiviral drugs. (See [Antiviral Drugs messages](#Antiviral_drugs))
	5. For the full list of age factors and medical conditions that put someone at high risk, see <http://www.cdc.gov/flu/about/disease/high_risk.htm>.
11. Be sure to let the doctor know if your child has a severe allergy to eggs or has any medical conditions like asthma, other heart or lung conditions, neurologic conditions, or other medical problems. (See [Egg Allergy messages](#egg_allergy))
12. Be sure to let the doctor know if your child has ever experienced a reaction to the flu vaccine.
13. Children also should be current on other vaccines, including those that can help prevent pneumonia, like pneumococcal and Hib vaccines.
14. Talk to your child’s doctor or nurse about getting a flu vaccine.
15. CDC also recommends that parents and children take everyday preventive actions to stop the spread of germs. (See [everyday preventive actions messages](#Everyday_prevention))
16. The Flu Guide for Parents (<http://www.cdc.gov/flu/freeresources/print-family.htm>) provides detailed information for parents on the seriousness of flu illness in children, how to protect them, and how to care for children with flu illness.

Vaccine Doses for Children Aged 6 Months through 8 Years

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1. Some children 6 months through 8 years of age require two doses of flu vaccine. Children in this age group who are getting vaccinated for the first time will need two doses of flu vaccine, spaced at least 28 days apart. Some children who have received flu vaccine previously also will need two doses. Your child’s health care provider can tell you if your child needs two doses.

The current recommendation is that if a child 6 months through 8 years of age is known to have received at least two seasonal flu vaccines during any prior season, and at least one dose of a flu vaccine containing the 2009 H1N1 antigen—whether the 2010-2011, 2011-2012, or 2012-2013 seasonal vaccine or the monovalent 2009(H1N1) vaccine—then the child needs only one dose for 2013-2014. If vaccination status is unknown for children in this age group, they should be given two doses of seasonal flu vaccine.

1. The 2009 H1N1 virus continues to circulate. The seasonal flu vaccine wasn’t formulated to protect against the 2009 H1N1 virus until the 2010-2011 flu season. This means that children who did not get the monovalent 2009 H1N1 vaccine in 2009-2010, or a seasonal flu vaccine in 2010-2011 or later, will not be fully protected from the 2009 H1N1 virus until they receive two doses of the 2013-2014 flu vaccine.
2. Children 6 months through 8 years of age who require two doses of flu vaccine do not need to receive matching flu vaccines; live or inactivated vaccine can be used for either dose.
3. Everyone 9 years of age and older needs only one dose of 2013-2014 flu vaccine.
4. To view a chart (algorithm) that shows influenza vaccine dosing recommendations for children aged 6 months through 8 years, visit <http://www.cdc.gov/flu/professionals/acip/2013-summary-recommendations.htm#figure1>.

# Statements for Pregnant Women

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1. Getting a flu shot protects pregnant women from the flu. Studies also have shown that getting a flu shot while you are pregnant can decrease your baby’s risk of getting the flu for up to 6 months after birth.
	1. Pregnant women are more likely to become severely ill with the flu than women who are not pregnant.
	2. Pregnant women with the flu have a greater chance for serious problems for their unborn baby, including premature labor and delivery.
	3. Getting a flu shot is the best way to protect you from the flu and prevent possible flu-associated pregnancy complications.
	4. When pregnant women get flu shots, they and their babies (after birth) get the flu less often.
2. If you have additional questions, talk to your doctor about flu vaccination during pregnancy.
3. Pregnant women are at high risk of serious flu complications. If you get sick with the flu, call your doctor right away. He or she may recommend treatment with influenza antiviral drugs. ([See Antiviral Drugs messages](#Antiviral_drugs)).
4. Babies younger than 6 months of age are too young to get a flu vaccine. To protect a baby who is younger than 6 months from getting the flu, their mother should get a flu shot during her pregnancy. An additional way to protect the baby is for all of the baby’s caregivers and close contacts (including parents, brothers and sisters, grandparents and babysitters) to get vaccinated against the flu.

# Statements for Young Adults (19-24 years of age)

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1. Everyone, including adults between 19 and 24 years of age, is recommended to receive the seasonal flu vaccine, even if vaccinated the year before.
2. Getting sick with the flu can result in missed school, work, and extra-curricular activities.
3. Adults between the ages of 19 and 24 were hit particularly hard by the 2009 H1N1 virus. This virus is expected to continue circulating during the 2013-2014 flu season, along with other influenza viruses.
4. Vaccination is particularly important for adults 19 through 24 years of age with certain long-term medical conditions because they are at high risk of serious illness if they get the flu. This group includes, for example, people with asthma (even if mild or controlled) and diabetes (types 1 and 2).
5. By getting a flu vaccine, adults 19 through 24 years of age help prevent spreading flu to friends and family who are at high risk for flu complications such as grandparents, younger siblings, and people with certain medical conditions like asthma or diabetes.
6. CDC recommends adults 19-24 years of age also follow everyday preventive actions to help stop the spread of germs. (See [everyday preventive actions messages](#Everyday_prevention).)
7. For the full list of age factors and medical conditions that put someone at high risk, see <http://www.cdc.gov/flu/about/disease/high_risk.htm>.
8. If you are at high risk of serious flu complications and get sick with the flu, your doctor may recommend treatment with antiviral drugs. ([See Antiviral Drugs messages](#Antiviral_drugs))

# Statements for Adults 65 years and older

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1. Human immune defenses become weaker with age, which places some people 65 and older at greater risk of influenza-related complications.
2. While annual vaccination is recommended for all people 6 months and older, vaccination is especially important for those 65 and older because people in this age group are at high risk of getting seriously ill from the flu.
3. On average, nearly 90 percent of flu-related deaths occur among people 65 years and older; however, this pattern can change depending on what viruses are circulating. Vaccination is the best protection against the flu and flu-related complications.
4. Protection provided by flu vaccination can vary depending on a number of factors. (<http://www.cdc.gov/flu/about/qa/vaccineeffect.htm>.)
5. Some studies have indicated that immunity may last for shorter periods of time in some people (for example, in people with weaker immune systems, which may include those aged 65 years and older); other studies have indicated that antibody levels (which are an indicator of immune protection) last through one flu season.
6. Consistent with CDC and ACIP’s general recommendation, people with weakened immune systems and people 65 years of age and older should ideally be vaccinated by October. Given the variability of existing study results and the uncertainty and unpredictability of when flu activity will begin in a given community, CDC and ACIP do not recommend delaying vaccination for people in these groups.
7. As long as flu viruses are circulating, vaccination should continue throughout the flu season,even in January or later.
8. Pneumonia can be a serious complication of flu infection.

Pneumococcal vaccine can be given at any time during the year and may be given at the same time as influenza vaccine.

During this flu season, work with your health care provider to determine when you can get your pneumococcal and flu vaccines. Adults who cannot remember if they’ve ever had pneumococcal vaccine should still be vaccinated.

* + Medicare covers both flu and pneumonia vaccines with no co-pay or deductible.
1. People 65 years and older have a vaccine option available to them designed specifically for people in this age group. This “high dose” flu vaccine (Fluzone® High-Dose) contains more antigen (the part of the vaccine that helps your body build up protection against flu viruses) than regular flu shots, and it is intended to promote a better immune response in this age group. (Note: CDC and the Advisory Committee on Immunization Practices (ACIP) have not expressed a preference for this vaccine over the regular flu shot for people 65 years of age and older).
2. Data from clinical trials comparing trivalent Fluzone® vaccines, high dose and standard dose, among people aged 65 years or older indicate that a stronger immune response (i.e. higher antibody levels) occurs after vaccination with Fluzone® High-Dose. Whether or not the improved immune response leads to greater protection against influenza disease after vaccination is not yet known. Results from a study designed to determine the effectiveness of Fluzone® High-Dose in preventing illness from influenza compared to Fluzone® are expected to be released by the 2014-15 season.
3. The higher dose vaccine may result in more of the mild side effects that can occur with standard-strength seasonal shots. Mild side effects can include pain, redness or swelling at the injection site, headache, muscle ache and fever
4. Talk to your doctor or nurse about the best option for you.
5. People 65 years of age and older should not get the nasal spray flu vaccine or the intradermal flu shot.
6. If you get sick with the flu, your doctor may recommend treatment with antiviral drugs. (See [Antiviral Drugs](#Antiviral_drugs) messages)

**Statements for Adults with Certain Medical Conditions**

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General

1. Diabetes, asthma, and heart disease (even if well managed) are among the most common long-term medical conditions that place people at higher risk for serious flu complications.
2. It is particularly important that all adults with chronic medical conditions like asthma, diabetes (types 1 and 2), and heart disease, receive a flu vaccine every year.
	1. Stay in control of your health – Protect yourself by getting your flu vaccine.
3. Pneumococcal infection can be a complication of flu infection. Pneumococcal disease can lead to pneumonia, meningitis and blood infections. Flu and pneumococcal vaccines remain the best ways to prevent these infections.
4. In addition to a flu vaccine, people with medical conditions like asthma, diabetes, and heart disease should also get the pneumococcal polysaccharide vaccine (PPSV).
	1. The vaccine also is for adults 18 and older who smoke or have certain conditions like heart, lung, liver, or kidney disease, diabetes, asthma, or a suppressed immune system.
	2. PPSV can be given at the same time as the seasonal flu vaccine.
	3. Ask your doctor about the importance of getting your flu and pneumococcal shots.
5. People with diabetes, asthma, and heart disease (even if well managed) are at high risk of serious flu complications and can get very sick from the flu. Antiviral drugs may be prescribed as treatment. (See [Antiviral Drugs](#Antiviral_drugs) messages)
6. For the full list of medical conditions that put you at a higher risk for serious flu complications, see <http://www.cdc.gov/flu/about/disease/high_risk.htm>.

## Diabetes

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1. While CDC wants EVERYONE 6 months and older to get vaccinated against the flu, it’s really important to get a flu shot if you have diabetes.
2. Even if your diabetes is well managed, you can get the flu and have serious complications, so it’s important that you know the signs and symptoms of flu and make a plan with your doctor about what to do in case you get sick.
3. If you have diabetes, getting the flu can make you very sick – even if your diabetes is well managed.
	1. For example, flu illness can cause blood glucose (sugar) levels to fluctuate, making it harder to manage diabetes.
	2. Flu illness can cause blood glucose levels to rise because of infection, inflammation, release of stress hormones (like cortisol).
	3. It is also possible for blood glucose levels to decrease, for example, when people experience a decreased appetite or nausea from flu illness.
4. People with diabetes sometimes have a harder time fighting infections.
5. A study showed that people with diabetes were more than 2 times more likely to be hospitalized with a flu-related illness. (Everyone with diabetes, including both type 1 and type 2 diabetes, should be protected from flu with an annual flu shot.
6. People with diabetes should ask their family and friends to get a flu vaccine which can also help reduce their chances of getting sick from flu illness.
7. If you have diabetes, you should get the flu shot. The nasal spray flu vaccine is *not recommended* for people with diabetes.
8. If you have diabetes, you have a greater risk of developing pneumonia by itself or after the flu, so if you have not previously received a pneumococcal vaccination, you should also get a pneumococcal vaccination. Pneumococcal vaccines are safe and effective for people with diabetes and you cannot get pneumonia from the pneumococcal vaccine. A pneumococcal vaccination, if not previously received, along with a yearly flu shot, is a key part of managing your diabetes. For more information on the adult immunization schedule, visit: <http://www.cdc.gov/vaccines/schedules/hcp/adult.html>
9. If you have flu-like symptoms, call a doctor, nurse, or clinic right away – even if you have had a flu shot. A doctor or clinic can prescribe medicine to treat the flu and reduce your chance of serious illness. It’s important to start taking this medicine as soon as possible. The medicine works best if you take it in the first 48 hours after your symptoms start. Visit: <http://www.cdc.gov/flu/antivirals/index.htm> and <http://www.cdc.gov/flu/about/disease/symptoms.htm>.
10. Make a plan with your doctor about what to do in case you get sick (know your sick day rules). For additional information about “Sick Day Rules” for people with diabetes, see <http://www.cdc.gov/h1n1flu/diabetes/diabetes_factsheet.htm#e>
11. Take everyday steps to protect your health. Visit: <http://www.cdc.gov/flu/protect/habits/index.htm>

## For more information about flu and Diabetes, visit: <http://www.cdc.gov/flu/diabetes/index.htm>

## Asthma

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1. Flu is more serious for people with asthma, even when asthma is mild or the symptoms are well managed.
2. People with asthma are more likely to have breathing problems if they get the flu.
3. The flu can also trigger asthma attacks or cause pneumonia and other acute respiratory diseases. Adults and children with asthma are more likely to develop pneumonia after getting sick with the flu.
4. Asthma is the most common medical condition among children hospitalized with the flu.
5. People with asthma should get the flu shot, not the nasal spray vaccine.
6. People with asthma should also ask their family and friends to get a flu vaccine, which can help further reduce their chances of getting the flu.

Heart Disease

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1. People with heart disease or who have had a stroke are at increased risk for developing serious complications from the flu and should get a flu shot every year.
2. Among adults hospitalized with the flu during the 2012-13 influenza season, heart disease was the most common chronic condition; 45% of adults hospitalized with the flu during the 2012-13 flu season had heart disease.
3. Studies show flu infection can worsen heart disease.
4. Studies of flu vaccination of patients with existing heart disease show that flu vaccination decreased the risk of acute coronary syndrome and heart disease-related deaths.
5. Flu vaccination can prevent worsening of heart disease, including heart attacks.
6. People with heart disease or who have had a stroke should get the flu shot, not the nasal spray vaccine.
7. Despite the known increased risk of severe flu related complications in patients with heart disease and recommendations for vaccination, many patients are still not getting vaccinated.
8. The percentage of patients 18-64 with heart disease that got the flu vaccine was 48% in 2011-12 and ranged from 39%-42% during 2007 through the 2010-11 influenza seasons.

## Morbid Obesity

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1. People who are morbidly obese are now included in the Advisory Committee on Immunization Practices (ACIP) list of people for whom influenza vaccination is especially important because of their high-risk status.
2. Among Americans 20 years and older, 6.3% are morbidly obese (with a body mass index, or BMI, of 40 or greater).
3. During the 2009 H1N1 pandemic, morbid obesity (having a body mass index of 40 or greater) was shown to be an independent risk factor for serious complications related to 2009 H1N1 infection requiring hospitalization. Since the same H1N1 virus is expected to circulate during the 2013-2014 flu season, people who are morbidly obese are strongly encouraged to get a flu vaccine.
	1. The H1N1 outbreak disproportionally affected obese individuals. This was demonstrated in studies worldwide (U.S., Canada, Australia and New Zealand, China, France, and Spain).
	2. Morbidly obese patients during the H1N1 flu outbreak were shown in various studies to be more likely to experience hospitalization, longer ICU stays and death.
4. People who are morbidly obese often suffer from other medical conditions that put them at high risk of flu complications, such as pneumonia and death.
	1. It is possible that some people who are morbidly obese could have unrecognized chronic medical conditions.
5. Getting a flu vaccine is the most important action a person can take to prevent the flu and its complications. Because people who are morbidly obese are at higher risk of flu complications, it is especially important that they get vaccinated every year to protect against the flu.
6. For more information about those at high risk for flu-related complications and to learn more about body mass index, visit <http://www.cdc.gov/flu/about/disease/high_risk.htm>

# Statements for African Americans and Hispanics

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Vaccine Protection

1. CDC recommends African Americans and Hispanics get vaccinated against the flu. (See the [Vaccine](#Vaccine) section for CDC’s vaccine related messages)
2. This year, HHS, CDC, and state and local public health officials are continuing to work with leaders in African American and Hispanic communities on flu protection.
3. Flu vaccines are the best protection for everyone, regardless of their race/ethnicity, age and health status, against the threat of flu.
4. CDC has prepared general messages for how all people, including African Americans and Hispanics, can protect themselves and their loved ones from the flu. Please see the section titled [Take 3](#Take_3), [Vaccine](#Vaccine) and [Everyday Preventive Actions](#Everyday_prevention) for these messages.

# Statements for American Indians and Alaska Natives

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1. During the 2009 H1N1 pandemic, indigenous populations from Australia, Canada, New Zealand, and the United States, including American Indians and Alaska Natives, experienced a 3 to 8 times higher rate of hospitalization and death associated with infection with the 2009 H1N1 flu virus.
	1. A study of 12 states, including Alaska, showed that the death rate from 2009 H1N1 flu in American Indian and Alaska Natives was four times higher compared to the death rate from 2009 H1N1 flu in all other racial/ethnic populations combined. <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5848a1.htm>
2. According to Alaska health officials, American Indians and Alaska Natives make up 16 percent of the state’s population, but they represented almost 30 percent of all of the state’s hospitalized flu cases occurring early in the 2009-2010 flu season.
3. While health officials were not able to find a specific reason why American Indians and Alaska Natives were disproportionately affected by the 2009 H1N1 virus during the 2009 influenza pandemic, studies by doctors in Alaska who serve the community suggest that household crowding, a lack of sanitary services such as running water in remote villages, and limited access to timely medical care for persons living in remote areas, may play a part in increasing both risk of infection by, and serious complications of, viral and bacterial pathogens including influenza.

Vaccine Protection

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1. American Indians and Alaska Natives are included in the list of people at high risk for complications from the flu and for whom vaccination is especially important.
2. American Indians and Alaska Natives can protect themselves by getting flu and pneumococcal vaccines. These vaccines are available at your local healthcare facility (even if you don’t have a regular doctor or nurse); mobile and community-based immunization clinics held in many locations; and at pharmacies and grocery stores where available. Check with your Community Health Representative (CHR) or Community Health Aide (CHA) for more information.
3. The flu vaccine can help protect American Indians and Alaska Natives, including children, adults, and elders against the flu.
4. The flu can cause severe illness that may require hospital care, even in healthy adults and children. A flu vaccine reduces your risk of illness, hospitalization, or even death and can prevent you from spreading the virus to your loved ones. By reducing the risk of severe illness, a flu vaccine can offer life-saving protection, especially in communities that do not have a hospital with an emergency department or Intensive Care Unit (ICU).
5. CDC has prepared general messages for how all people, including American Indians and Alaska Natives, can protect themselves and their loves ones from the flu. (Please see the sections titled [Take 3](#Take_3), [Vaccine](#Vaccine) and [Everyday Preventive Actions](#Everyday_prevention) for these messages).

# Statements on the Importance of Health Care Professional/Health Care Worker Recommendation and Vaccination

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1. Patients may view you as a primary or preferred source of care. This provides you the opportunity to assess your patients’ vaccination status and possibly even to administer the appropriate vaccines.
2. Recommend a flu vaccine to all of your patients. Make plans to vaccinate your patients, staff, and yourself.
3. As trusted health care professionals, research shows that your recommendation for yearly flu vaccination and taking action to get yourself vaccinated is vital.
4. Ideally, all providers including specialists and primary care providers, should recommend *and* offer flu vaccines to their patients.
5. Even if you do not stock flu vaccines in your office, assessing your patients’ vaccination needs and making a strong recommendation to get vaccinated is critical. Providers who don’t administer flu vaccines can refer patients back to their primary care provider or to a pharmacist or local health department to receive the needed vaccines. You and your patient can visit the HealthMap Vaccine Finder (<http://vaccine.healthmap.org/>) to find locations in your area offering the recommended vaccines.
6. Order free prescription-style tear-pads that will allow you to give a customized flu shot reminder to patients at high-risk for complications from the flu. Order this product at <http://wwwn.cdc.gov/pubs/ncird.aspx#Flu>.
7. Take every opportunity to help educate your patients about the importance of flu vaccination this and every year.
8. Flu can spread rapidly in health care settings. Vaccination is the first and most important step physicians, health care workers, and vulnerable patients can take to protect against the flu.
9. Even if you're healthy, you can get sick and spread the flu. Get vaccinated to help protect yourself from influenza and to keep from spreading it to your family, co-workers, and patients. Studies conducted in health care settings show when a large number of health care workers get vaccinated, vulnerable patients are protected.
10. Health care workers should routinely offer seasonal influenza vaccination to everyone aged 6 months and older, ideally by October, and continuing throughout the flu season, which can last as late as May.
11. CDC encourages medical practices, health departments, pharmacists, and other immunization providers to use flu vaccination as an opportunity to remind adult patients about other recommended vaccines.
12. Please see the [vaccine](#Vaccine) section for CDC-approved messages to communicate to patients related to influenza vaccination.
13. For the latest information on flu vaccine supply, including projections and doses distributed, visit <http://www.cdc.gov/flu/professionals/vaccination/vaccinesupply.htm>.
14. Key information for public health and health care professionals regarding vaccination, infection control, prevention, treatment, and diagnosis of seasonal influenza is available at <http://www.cdc.gov/flu/professionals>.
15. Free print resources can be ordered from <http://wwwn.cdc.gov/pubs/ncird.aspx#Flu> or downloaded from <http://www.cdc.gov/flu/freeresources/print>.
16. Visit: <http://www.cdc.gov/flu/professionals/acip/> to view the 2013-14 ACIP Influenza Vaccine Recommendations.
17. Health care workers should take everyday preventive actions to prevent the spread of germs and suggest the same to their patients. (See [everyday preventive actions messages](#Everyday_prevention)).
18. As part of the Affordable Care Act, many insurance plans, including all plans in the Health Insurance Marketplace, will provide many free preventive services, including flu vaccinations. For information about the Health Insurance Marketplace, visit [www.HealthCare.gov](https://www.healthcare.gov/) and tell your patients.

**Vaccine Safety**

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General

1. Flu vaccines have been used in the United States for more than 50 years.
2. Hundreds of millions of people have safely received seasonal flu vaccines.
3. Each year, CDC works closely with the U.S. Food and Drug Administration (FDA), and other partners to ensure the highest safety standards for flu vaccines. CDC also works closely with the FDA to ensure systems are in place to promptly detect unexpected or unusual patterns of adverse events following vaccination.
4. The safety of influenza vaccines is closely monitored with long-established systems that have demonstrated their usefulness in detecting vaccine safety problems. See [http://www.cdc.gov/vaccines/vac-gen/safety](http://www.cdc.gov/vaccines/vac-gen/safety/).
5. Data from clinical trials indicate that seasonal flu vaccines made to protect against four flu viruses have a similar safety profile as seasonal flu vaccines made to protect against three flu viruses, with similar—mostly mild—side effects.
6. The flu shot cannot give you the flu. Flu vaccines that are administered with a needle are currently made in two ways: the vaccine is made either with a) flu vaccine viruses that have been ‘inactivated’ and are therefore not infectious, or b) with no flu vaccine viruses at all (which is the case for recombinant influenza vaccine). The most common side effects from the influenza shot are soreness, redness, tenderness or swelling where the shot was given. Low-grade fever, headache and muscle aches also may occur.
7. The nasal spray vaccine cannot give you influenza. The viruses contained in the nasal spray flu vaccine are attenuated (i.e., weakened), which means they cannot cause flu illness. These weakened viruses are also cold-adapted, meaning they are designed to only cause mild infection at the cooler temperatures found within the nose. These viruses cannot infect the lungs or other areas of the body where warmer temperatures exist. The nasal spray is well tolerated and the most commonly reported side effects are mild and include runny nose, nasal congestion and cough.
8. Life-threatening allergic reactions from vaccines are very rare and effective medical treatment is available. If they do occur, it is usually within a few minutes to a few hours after the vaccination.

Thimerosal

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1. Thimerosal is a preservative that protects multi-dose vial vaccines against contamination. Influenza vaccines are available with and without thimerosal. Both options are safe for protecting you and your family from influenza. If you have questions, discuss them with your doctor or nurse.
2. There is a large body of scientific evidence on the safety of thimerosal. Data from many studies show that the low doses of thimerosal contained in vaccines are safe for adults and children.

Guillain-Barré Syndrome (GBS)

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1. GBS is a rare disorder in which a person’s own immune system damages the nerves, causing muscle weakness and sometimes paralysis.
2. Anyone can develop GBS; however, it is more common among older adults. The occurrence of GBS increases with age, and people older than 50 years are at greatest risk for developing GBS.
3. Each year, about 3,000 to 6,000 people in the United States develop GBS whether or not they received a vaccination. This would mean that about 60-120 cases of GBS are expected to occur each week regardless of whether those people received a vaccine or not.
4. While it is not fully known what causes GBS, it is known that about two-thirds of the people who get GBS do so several days or weeks after they have been sick with diarrhea or a lung or upper respiratory illness. An infection with the bacteria [Campylobacter jejuni](http://www.cdc.gov/ncidod/dbmd/diseaseinfo/campylobacter_g.htm), which can cause diarrhea, is one of the most common illnesses associated with GBS.
5. In 1976, an influenza vaccine made from a specific swine influenza virus was associated with GBS, but since then, seasonal influenza vaccines have not been clearly linked to GBS.
6. During the 1976 swine influenza vaccination campaign, the additional risk of getting GBS was one additional case of GBS for every 100,000 persons vaccinated.
7. Since 1976, scientists have looked for an increased risk of GBS following seasonal influenza vaccination. In most studies, no increased risk of GBS has been found. Some studies have estimated a possible risk of approximately 1-2 additional GBS cases for every 1 million persons vaccinated.
8. Studies assessing the risk of GBS following monovalent inactivated 2009 H1N1 influenza vaccine indicate a small increased risk for GBS following vaccination, on the order of 1-2 additional cases for every 1 million persons vaccinated.
9. Influenza infection and illness also can, in rare cases, lead to GBS.
10. The benefits of influenza vaccination continue to outweigh the possible risk of GBS.
11. People who have experienced GBS should consult with their doctor about getting a flu vaccine.

Febrile Seizures

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1. In the [2010-2011](http://www.cdc.gov/vaccinesafety/Concerns/FebrileSeizures-archived.html) and 2011-2012 seasons CDC monitoring detected an increased risk for [febrile seizures](http://wwwdev.cdc.gov/vaccinesafety/concerns/febrileseizures.html) in young children in the U.S. following inactivated influenza vaccine. During the [2012-2013 influenza season](http://www.cdc.gov/vaccinesafety/concerns/febrileseizures.html), no increased risk was detected. The reason for the difference from the previous two influenza seasons is not known. However, the composition of flu vaccines changed between the 2011-2012 and the 2012-2013 seasons. Flu vaccine [composition often changes year-to-year](http://www.cdc.gov/flu/about/season/vaccine-selection.htm), and CDC and FDA will continue to closely monitor the safety of influenza vaccines each season.
2. No changes in the use of trivalent influenza vaccine (TIV) or PCV13 are recommended for the 2013-14 influenza season. As stated previously, ACIP does not recommend the U.S.-licensed CSL Biotherapies' TIV, Afluria, for children younger than 9 years old.

Egg Allergy and Influenza Vaccination

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1. Serious allergic reactions can be caused by various components of influenza vaccine. Fortunately, the risk of such reactions is low.
2. A severe allergic reaction to influenza vaccine (e.g., anaphylaxis or a reaction involving angioedema, similar to hives but swelling is under the skin instead of on the skin surface; respiratory distress; lightheadedness; or recurrent vomiting; or a reaction which required emergency medical care or epinephrine), no matter what vaccine component may have caused the reaction, is a contraindication to future receipt of the vaccine.
3. Because most influenza vaccines are produced by inoculating influenza virus into eggs, the finished vaccine contains a trace amount of egg protein. This trace amount of egg protein could cause a reaction in susceptible people. However, several recent studies have documented safe receipt of the flu shot in people with egg allergy, particularly those with a history of less severe reactions to egg. Persons with mild reactions to egg —specifically, those who have only experienced hives should receive the influenza vaccine with some additional safety measures.
4. Flublok® is a newly licensed seasonal influenza vaccine that does not use eggs at all in its production. Flublok® also does not use the influenza virus in its production and contains no egg proteins, antibiotics, or preservatives.
5. Persons who have severe reactions to egg (i.e., those listed above) should be referred to a health care professional with expertise in the management of allergic conditions for further risk assessment before being vaccinated.

Recommendations for vaccination of persons with egg allergy can be found at: <http://www.cdc.gov/flu/professionals/acip/2013-summary-recommendations.htm#egg-allergy>

1. All personnel and facilities providing vaccinations should have proce­dures in place for anaphylaxis management. Providers should be familiar with the office emergency plan.
2. Some people who report allergy to eggs may not be egg-allergic. Those who are able to eat lightly cooked eggs (e.g., scrambled eggs) without reaction are unlikely to be allergic.
3. Egg allergic persons may tolerate eggs in baked products (e.g., bread and cake). Tolerance to such egg-containing foods does not exclude the possibility of egg allergy. Egg allergy may be confirmed by a consistent medical history of adverse reactions to eggs and egg-containing foods, in addition to a skin or blood test.

Flu Vaccine Safety and Pregnancy

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1. Millions of pregnant women have safely received flu shots for many years.
	1. The flu shot has not been shown to cause harm to pregnant women and/or their babies. The evidence that the flu shot is safe in pregnant women is continuing to grow.
	2. In a review of reports submitted to the [Vaccine Adverse Events Reporting S](http://vaers.hhs.gov/esub/index)ystem (VAERS) of pregnant women who received seasonal influenza and/or 2009 H1N1 influenza vaccines, no unusual patterns of pregnancy complications or fetal outcomes following receipt of flu vaccines were observed.
2. Pregnant women should receive the flu shot to protect both the mother and baby.
3. The flu shot can be given at any time during your pregnancy.
4. Women who have just delivered (postpartum) are also at risk for the flu and should be vaccinated, if they have not yet received a flu vaccine.
5. The nasal spray vaccine is not licensed for use in pregnant women, but postpartum women can receive the flu shot or the nasal spray vaccine. Pregnant and postpartum women do not need to avoid contact with persons recently vaccinated with the nasal spray vaccine. (Also see [Statements for Pregnant Women](#Statements_Pregnant_Women).)
6. The flu shot is safe for women who plan to breastfeed, and the vaccine (either the shot or the nasal spray) can be given to mothers who are breastfeeding.

**Vaccine Coverage**

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Final vaccine coverage estimates for the 2012-2013 season will be available at the end of September 2013. Other vaccine coverage estimates can be found at <http://www.cdc.gov/flu/fluvaxview/index.htm>.

**Vaccine Effectiveness**

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1. Flu vaccines protect against infection and illness caused by influenza viruses.
2. Flu vaccines will NOT protect against infection and illness caused by other viruses that can also cause influenza-like symptoms.
3. There are many other viruses besides influenza that can result in influenza-like illness (ILI) that spread during the flu season.
4. Researchers try to tell how well a vaccine works in order to continually assess and confirm the value of flu vaccines as a public health intervention.
5. Study results about how well a flu vaccine works can vary based on study design, outcome(s) measured, population studied and the season in which the vaccine was studied. These differences can make it difficult to compare one study’s results with another’s.
6. While determining how well a flu vaccine works is challenging, in general, recent studies have supported the conclusion that flu vaccination benefits public health, especially when the viruses in the vaccine and circulating viruses are well matched. (See “Current Efforts to Study How Well Influenza Vaccines Work.”)
7. Recent studies by CDC and other experts show that flu vaccine can reduce the risk of having to go to the doctor for flu by about 60% among the overall population when the vaccine viruses are like the ones spreading in the community.
8. A [study](http://cid.oxfordjournals.org/content/early/2013/02/27/cid.cit124.full.pdf?keytype=ref&ijkey=Xp84ym72BYicJiV) showed that flu vaccination reduced the risk of flu-related hospitalization by 72% among adults of all ages and by 77% in people 50 and older during the 2011-2012 flu season.([Talbot HK, Zhu Y, Chen Q, et al. Effectiveness of influenza vaccine for preventing laboratory-confirmed influenza hospitalizations in adults, 2011-2012 influenza season. Clin Infect Dis. 2013; doi: 10.1093/cid/cit124.](http://cid.oxfordjournals.org/content/early/2013/02/27/cid.cit124.full.pdf?keytype=ref&ijkey=Xp84ym72BYicJiV))
9. How well the flu vaccine works (or its ability to prevent influenza illness) can range widely from season to season and also can vary depending on who is being vaccinated.
10. Two factors play an important role in determining the likelihood that influenza vaccine will protect a person from influenza illness: 1) characteristics of the person being vaccinated (such as their age and health), and 2) the similarity or "match" between the influenza viruses in the vaccine and those spreading in the community.
11. In general, the flu vaccine works best among young healthy adults and older children. Lesser effects of flu vaccine are often found in studies of young children (e.g., those younger than 2 years of age) and older adults.
12. Older people, who may have weaker immune systems, often have a lower protective immune response following flu vaccination compared to the immune response of younger, healthier persons following flu vaccination. This can result in lower levels of vaccine effectiveness in these people.
13. The other factor affecting how well the flu vaccine works is the “match” between the influenza viruses contained in the vaccine and those spreading in the community. The closer the match, the better the flu vaccine is likely to be in preventing flu illness. If the viruses in the vaccine are very different from circulating influenza viruses, vaccine effects can be lower.
14. During years when the viruses in the flu vaccine and circulating influenza viruses are not well matched, it’s possible that no benefit from flu vaccination may be observed.
15. During years when the viruses in the flu vaccine and circulating influenza viruses are very well matched, it’s possible to measure substantial benefits from flu vaccination in terms of preventing flu illness.
16. However, even during years when the vaccine match is very good, the benefits of flu vaccination will vary across the population, depending on host factors like the health and age of the person being vaccinated and even potentially which flu vaccine was used. The substantial burden of flu-associated illness and death in the United States combined with the overall evidence from a variety of studies showing that flu vaccines do offer protection against flu illness support the current U.S. flu vaccination recommendations.
17. It’s important to note, however, that how well flu vaccines work to protect against flu illness will continue to vary each year, depending especially on the match between influenza viruses used to make vaccine and the influenza viruses that are spreading and causing illness in the community, and the characteristics of the person being vaccinated.

Ways to Measure How Well Flu Vaccines Work -- Study Methods

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1. How well a flu vaccine works can be measured through different kinds of studies.
2. “Randomized studies,” in which people are randomly assigned to receive either vaccine or placebo (e.g., saline solution), and then followed to see how many in each group get influenza, are the “gold standard” (best method) for determining how well a vaccine works. The measurement of vaccine effect from a randomized (placebo-controlled) study is referred to as “efficacy”.
3. “Observational studies” are studies in which subjects who choose to be vaccinated are compared with those who chose not to be vaccinated. This means that vaccination of study subjects is not randomized. The measurement of vaccine effect from an observational study is referred to as “effectiveness”.
4. Randomized studies are difficult to conduct and particularly undesirable in high-risk groups, where withholding vaccine from people recommended for vaccination would place them at risk for infection, illness and possibly serious complications.
5. For that reason, most recent studies to measure how well flu vaccine works have been observational studies.
6. Many observational studies use a case-control design, in which cases of influenza illness are compared with a group of people (control group) who did not get influenza.
7. One aspect of the design of observational studies that can influence results is the choice of the “control” (comparison) group. The control group can include people who did not have influenza, or who have no record of seeking care for influenza symptoms. In some studies, the control group may consist of people who had respiratory symptoms for which they sought medical care, but who tested negative for influenza.
8. Members of the control group who don’t have influenza should ideally be similar to study subjects with influenza. If they are not similar, the study may show a falsely high or low result for how well the vaccine worked. Generally speaking, cases should come from the same population as controls.
9. In addition, it can be difficult to directly compare results between studies that used different comparison groups. Even if both studies were well-conducted, one would expect the results to be different because the choice of the comparison group in non-randomized studies can influence the estimate of the vaccine’s effect.
10. Other factors that can affect results are the numbers of cases (people who developed flu illness) in the study and the number of people eligible for, or enrolled in a study (again, smaller numbers can make results less reliable).
11. Therefore, when assessing how well a vaccine works, it is important to consider estimates derived from multiple studies, using different study designs.
12. Studies also can assess how well a vaccine works at preventing different outcomes.

For example, the outcomes can be more broad, like measuring influenza-like illness\* (which includes illness caused by other viruses in addition to flu viruses), or they can be more specific to flu, like measuring laboratory-confirmed influenza virus infection. *\*Influenza-like illness (ILI) is defined as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat.*

1. The use of laboratory-confirmed influenza cases is likely to yield more accurate estimates than studies that use non-specific case definitions (such as influenza-like illness).
2. Generally, the lowest estimates of flu vaccine effectiveness are found in studies using non-influenza specific, non-laboratory-confirmed outcomes, such as studies using all deaths or all respiratory illnesses or all respiratory-related hospitalizations.
3. A study by Bridges et al (JAMA 2000) conducted among healthy adults illustrates how the outcome measured can impact estimates of how well a vaccine works. The results from this study showed that the inactivated influenza vaccine was 86% efficacious against laboratory-confirmed influenza, but only 10% efficacious against all respiratory illnesses in the same population and year.
4. Scientists continue to work on better ways to design, conduct and evaluate non-randomized (i.e., observational) studies to assess how well flu vaccines work.
	1. CDC has been working with researchers at universities and hospitals since the 2003-2004 influenza season to estimate how well influenza vaccine works through observational studies using laboratory-confirmed influenza as the outcome.
	2. These studies currently use [RT-PCR](http://www.cdc.gov/flu/professionals/diagnosis/rapidclin.htm#table) (reverse transcription polymerase chain reaction) confirmed medically attended influenza virus infections as a specific outcome.
	3. CDC’s studies are conducted in five sites across the United States to gather more representative data.
	4. To assess how well the vaccine works across different age groups, CDC’s studies of vaccine effectiveness include all people aged 6 months and older recommended for an annual influenza vaccination.
	5. Similar studies are being done in Australia, Canada and Europe.

Timing of vaccination against flu

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1. CDC recommends that people should begin getting vaccinated soon after vaccine becomes available, ideally by October, to ensure that as many people as possible are protected before flu season begins. However, as long as flu viruses are circulating, vaccination should continue to be offered throughout the flu season**,** even in January or later.
2. It takes about two weeks after vaccination for the immune system to fully respond with antibodies that develop in the body and provide protection against influenza virus infection.
3. The timing of flu outbreaks is unpredictable. They have occurred as early as October and can continue through May, or even later. Sometimes more than one influenza virus type or subtype will cause outbreaks in a community in a single season. As long as flu activity is ongoing, it’s not too late to get vaccinated, even in January or later.
4. The 2012-2013 season began early, was moderately severe and lasted longer than average compared with previous seasons (see “[2012-2013 Flu Season Draws to a Close](http://www.cdc.gov/flu/spotlights/2012-2013-flu-season-wrapup.htm)” for more information).

Background on Waning Immunity

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* 1. Multiple studies conducted over different seasons and across vaccine types and influenza virus subtypes have shown that the body’s immunity to influenza viruses (acquired either through natural infection or vaccination) declines over time. This decline in protective antibody has the potential to leave some people more vulnerable to infection, illness and possibly serious complications from the same influenza viruses a year after being vaccinated. Getting vaccinated each year provides the best protection against influenza throughout flu season.