Influenza Immunization

During Pregnancy

2015
November 1, 2015

Dear Colleague:

Influenza (flu) season is here and the time is now for all individuals 6 months and older to be vaccinated, including pregnant women. **Pregnant women are at an increased risk of serious illness and hospitalization from complications of influenza and thus should receive an inactivated influenza vaccine during any trimester.** The American College of Obstetricians and Gynecologists (ACOG) recommends that all individuals 6 months and older receive a flu shot every year. As the trusted health care providers of women, we are in a critical position to recommend and offer influenza vaccines to our patients.

Study after study demonstrates that our recommendation is the most effective way to increase influenza immunization rates among adults and, in particular, pregnant women. I urge you to strongly recommend the flu shot to all of your pregnant and nonpregnant patients throughout the flu season until May 2016. If your patient does not accept your recommendation initially, continue to offer her the flu shot on subsequent office visits. If your practice does not administer the flu shot in your office, have a referral plan and be sure to follow up with your patients for documentation of their vaccines. It is important to remember that live, attenuated influenza vaccine is contraindicated for pregnant women. See ACOG’s Committee Opinion on Influenza Vaccination During Pregnancy in this tool kit or on ACOG’s Immunization for Women web site at www.immunizationforwomen.org for specific details.

This tool kit includes materials to help you and your staff communicate with pregnant women about the importance of receiving a flu shot. If your patient has questions about receiving the flu shot, please give her a copy of the Frequently Asked Questions for Pregnant Women Concerning Influenza (Flu) Vaccination and Frequently Asked Questions for Patients Concerning Vaccine Safety tear pads. If a pregnant patient calls describing influenza-like illness, use the laminated Assessment and Treatment Algorithm to determine the best course of action. Health care provider FAQs are also included for you and your staff.

Set an example for your patients by getting yourself and all of your office staff vaccinated. Educate your practice team about the importance of flu vaccination during pregnancy. For up-to-date information on influenza, please encourage your staff and patients to visit ACOG’s immunization web site, Immunization for Women, www.immunizationforwomen.org.

We hope the enclosed materials are helpful to you, your practice team, and your patients. If you have additional questions or would like additional materials, please contact us at 202-863-2489.

Sincerely,

Christopher M. Zahn, MD  
Vice President, Practice Activities

Laura E. Riley  
Chair, ACOG Immunization Expert Work Group

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Influenza Vaccination During Pregnancy

ABSTRACT: Influenza vaccination is an essential element of prepregnancy, prenatal, and postpartum care because influenza can result in serious illness, including a higher chance of progressing to pneumonia, when it occurs during the antepartum or postpartum period. In addition to hospitalization, pregnant women with influenza are at increased risk of intensive care unit admission and adverse perinatal and neonatal outcomes. The Centers for Disease Control and Prevention’s Advisory Committee on Immunization Practices and the American College of Obstetricians and Gynecologists recommend that all adults receive an annual influenza vaccine and that women who are or will be pregnant during influenza season receive an inactivated influenza vaccine as soon as it is available. In the United States, the influenza season typically occurs from October to May. Ideally, an influenza vaccination should be given before the end of October, but vaccination throughout the influenza season is encouraged to ensure protection during the period of circulation. Any of the licensed, recommended, age-appropriate, inactivated influenza vaccines can be given safely during any trimester. Therefore, it is critically important that obstetrician–gynecologists and other obstetric care providers recommend and advocate for the influenza vaccine. Obstetrician–gynecologists are encouraged to stock and administer the influenza vaccine to their pregnant patients in their offices, and should get the influenza vaccine themselves every season. If the influenza vaccine cannot be offered in a practice, obstetrician–gynecologists and obstetric care providers should refer patients to another health care provider, pharmacy, or community vaccination center. This updated Committee Opinion includes more recent data on the safety and efficacy of influenza vaccination during pregnancy and recommendations for treatment and postexposure chemoprophylaxis.

Recommendations

The American College of Obstetricians and Gynecologists (ACOG) makes the following recommendations:

- The Centers for Disease Control and Prevention’s (CDC) Advisory Committee on Immunization Practices and ACOG recommend that all adults receive an annual influenza vaccine and that women who are or will be pregnant during influenza (flu) season receive an inactivated influenza vaccine as soon as it is available. Any of the licensed, recommended, age-appropriate, inactivated influenza vaccines can be given safely during any trimester.

- Maternal influenza immunization is an essential component of prenatal care for women and their newborns. Obstetrician–gynecologists and other health care providers should counsel pregnant women about the safety and benefits of influenza immunization for themselves and their fetuses and advocate for the benefits of passive immunity from maternal immunization for their newborns.

- Obstetrician–gynecologists are encouraged to stock and administer the influenza vaccine to their pregnant patients in their offices, and should get the influenza vaccine themselves every season.

- If the influenza vaccine cannot be offered in a practice, obstetrician–gynecologists and obstetric care providers should refer patients to another health care provider, pharmacy, or community vaccination center.

- Obstetrician–gynecologists should strongly encourage their office staff to be vaccinated against influenza every season.

- Individuals with a history of egg allergy who have experienced only hives after exposure to egg can
receive any licensed and recommended influenza vaccine that is otherwise appropriate for their age and health status.

• In the case of allergic symptoms more serious than hives, the vaccine should be administered in an inpatient or outpatient medical setting (including, but not necessarily limited to hospitals, clinics, health departments, and physician offices).

• Patients with flu-like illness should be treated with antiviral medications presumptively regardless of vaccination status. Health care providers should not rely on test results to initiate treatment and should treat patients presumptively based on clinical evaluation.

• Because of the high potential for morbidity, the CDC and ACOG recommend that postexposure antiviral chemoprophylaxis (75 mg of oseltamivir once daily for 10 days) be considered for pregnant women and women who are up to 2 weeks postpartum (including pregnancy loss) who have had close contact with someone likely to have been infected with influenza. If oseltamivir is unavailable, zanamivir can be substituted, two inhalations once daily for 10 days.

Introduction

Published data continue to demonstrate the need for influenza vaccination during pregnancy as well as the importance of recommending and providing vaccination in the office (1–4). During the 2016–2017 influenza season, 53.6% of women reported receiving the influenza vaccine before or during pregnancy (5). Although these numbers reflect significant progress, much room remains for improvement to meet the U.S. Health and Human Services’ Healthy People 2020 goal of vaccinating 80% of pregnant women against influenza (6). The American College of Obstetricians and Gynecologists’ Immunization and Emerging Infections Expert Work Group and the Committee on Obstetric Practice recommend that all women who are pregnant during influenza season receive an inactivated influenza vaccine in accordance with recommendations from the CDC’s Advisory Committee on Immunization Practices (5). This updated Committee Opinion includes more recent data on the safety and efficacy of influenza vaccination during pregnancy and recommendations for treatment and postexposure chemoprophylaxis.

Background

Influenza vaccination is an essential element of prepregnancy, prenatal, and postpartum care because influenza can result in serious illness, including a higher chance of progressing to pneumonia, when it occurs during the antepartum or postpartum period. For example, a retrospective cohort study in Nova Scotia found that women hospitalized for respiratory illness during pregnancy (especially during the third trimester) were more likely to have an increased number of medical visits or an increased length of stay when compared with the number of visits the year before their pregnancy (7). In this study, the association between pregnancy status and hospital admission was particularly striking for women with comorbidities (7). However, it is important to note that many studies, including the aforementioned study, were not able to confirm the influenza diagnosis with laboratory results, and more studies using confirmatory laboratory results are needed in pregnant women. In addition to hospitalization, pregnant women with influenza are at an increased risk of intensive care unit admission and adverse perinatal and neonatal outcomes (8–10). Finally, morbidity and mortality among pregnant women increases during influenza pandemics, including the 2009 H1N1 influenza pandemic (10–18). Taken together, these data emphasize the importance of influenza vaccination as a vital intervention that all obstetrician–gynecologists and other obstetric care providers should recommend and administer.

In the United States, the influenza season typically occurs from October to May. The CDC’s Advisory Committee on Immunization Practices and ACOG recommend that all adults receive an annual influenza vaccine and that women who are or will be pregnant during influenza season receive an inactivated influenza vaccine as soon as it is available. Ideally, an influenza vaccination should be given by the end of October, but vaccination throughout the influenza season is encouraged to ensure protection during the period of circulation. The inactivated influenza vaccine can be given to all pregnant women during any trimester (5). Because influenza vaccines are recommended annually for all adults, pregnant women should be vaccinated even if they received an influenza vaccine during a previous pregnancy. Vaccination in the postpartum period is an alternative only when vaccination during pregnancy cannot be completed.

Safety

Numerous studies, including clinical trials and observational studies, and data from safety reporting systems have demonstrated consistently the safety of influenza vaccination during pregnancy (19–23). To date, only one small retrospective case–control study has suggested a possible association between receipt of an influenza vaccine containing A/H1N1pdm early in the first trimester and spontaneous abortion in women who also received an influenza vaccine containing A/H1N1pdm in the previous influenza season (24). This association has not been observed during other seasons or other versions of the influenza vaccine. Because of the lack of evidence of biological plausibility, several notable flaws in this study, and the preponderance of other data showing no association, the recommendation for influenza vaccine given in any trimester has not changed (24, 25). Although some researchers have raised concerns that thimerosal, a mercury-containing preservative used in multidose vials of the influenza vaccine, may be unsafe, there is no
scientific evidence that thimerosal-containing vaccines cause health or developmental problems in children born to women who received vaccines with thimerosal during pregnancy (26–28). Therefore, although thimerosal-free formulations of the influenza vaccine are available, the CDC’s Advisory Committee on Immunization Practices does not indicate a preference for thimerosal-containing or thimerosal-free vaccines for any group, including pregnant women (19).

Individuals with a history of egg allergy who have experienced only hives after exposure to egg can receive any licensed and recommended influenza vaccine that is otherwise appropriate for their age and health status. A recent study found the rate of anaphylaxis after all vaccines to be 1.31 per one million vaccine doses given (29). Individuals who report having had reactions to egg involving symptoms other than hives (such as angioedema, respiratory distress, lightheadedness, or recurrent emesis) or those who have required epinephrine or another emergency medical intervention, also may receive any licensed and recommended influenza vaccine. However, in the case of allergic symptoms more serious than hives, the vaccine should be administered in an inpatient or outpatient medical setting (including, but not necessarily limited to hospitals, clinics, health departments, and physician offices).

Vaccine administration should be supervised by a health care provider who is able to recognize and manage severe allergic conditions. A previous severe allergic reaction to influenza vaccine, not to eggs, regardless of the component suspected of being responsible for the reaction, is the only current contraindication to future receipt of the influenza vaccine (5).

Currently, pregnant women should receive any licensed, recommended, age-appropriate, inactivated influenza vaccine during any trimester (5). If the timing of the tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) vaccine and the influenza vaccine align, it is safe and effective to administer both vaccines during the same visit. It is also safe for breastfeeding women to receive the influenza vaccine if they did not receive it during pregnancy.

**Efficacy and Benefits**

The efficacy of seasonal influenza vaccination in pregnant women is similar to its efficacy among the general adult population (30). Although the effectiveness of the influenza vaccine can be lower than that of other adult vaccines, vaccination still offers significant protection against influenza. It can mitigate the severity of the effect of influenza when infection does occur and is the primary preventive intervention for pregnant women. A study during the 2012–2013 influenza season demonstrated that pregnant women who were vaccinated had significantly fewer hospitalizations than those who were not (31).

Influenza vaccination during pregnancy also can benefit the newborns of women who received the vaccine. Four large-scale, randomized controlled trials and numerous observational studies have demonstrated neonatal protection from maternal influenza vaccination (32–35). Studies also have demonstrated a reduction in hospitalization related to influenza infection among infants born to women who received the vaccine during pregnancy (36, 37). Therefore, because the influenza vaccine is not effective in infants younger than 6 months, passive immunization of fetuses through transplacentally transmitted antibodies is currently the best prevention strategy for newborns (32). Thus, maternal influenza immunization is an essential component of prenatal care for women and their newborns. Obstetrician–gynecologists and other health care providers should counsel pregnant women about the benefits of influenza immunization for themselves and their fetuses and advocate for the benefits of passive immunity from maternal immunization for their newborns.

**Treatment and Postexposure Chemoprophylaxis in Pregnant Women**

Pregnant women are at high risk of serious complications of influenza infection such as intensive care unit admission, preterm delivery, and maternal death. Patients with flu-like illness should be treated with antiviral medications presumptively regardless of vaccination status. Treatment with oseltamivir (75 mg twice daily for 5 days) is preferred; however, if oseltamivir is unavailable, zanamivir (two inhalations [10 mg] twice daily for 5 days) may be substituted. Health care providers should not rely on test results to initiate treatment and should treat patients presumptively based on clinical evaluation (38).

Because of the high potential for morbidity, the CDC and ACOG recommend that postexposure antiviral chemoprophylaxis (75 mg of oseltamivir once daily for 10 days) be considered for pregnant women and women who are up to 2 weeks postpartum (including pregnancy loss) who have had close contact with someone likely to have been infected with influenza. If oseltamivir is unavailable, zanamivir can be substituted, two inhalations once daily for 10 days. All women who are pregnant or are in the first 2 weeks postpartum should be counseled to call for evaluation immediately if the early signs and symptoms of influenza infection (eg, a fever greater than 100°F coupled with shortness of breath, syncope, or chest pain) develop (38). For more information about treatment and dosage see ACOG and the Society for Maternal–Fetal Medicine’s Seasonal Influenza Assessment and Treatment of Pregnant Women with Influenza-like Illness algorithm at www.acog.org/More-Info/FluVaccine.

**The Obstetrician–Gynecologist’s Role**

Discussion with patients regarding the effects of influenza and the potential benefits of vaccination during pregnancy is particularly important because a lack of knowledge about the benefits of the influenza vaccine has

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**Committee Opinion Influenza Vaccination During Pregnancy**

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been shown to be a barrier to vaccine acceptance (39–41). Educational tools with simple chart prompts increase the frequency of discussion between physicians and pregnant women regarding influenza vaccination (42). Moreover, studies consistently suggest that when recommendations for influenza vaccination during pregnancy come directly from a woman’s obstetrician–gynecologist or other obstetric care provider and the vaccine is available in the physician’s office, the odds of vaccine acceptance and receipt are 5-fold to 50-fold higher (1, 2). Therefore, it is critically important that all obstetrician–gynecologists and other obstetric care providers recommend and advocate for the influenza vaccine. Obstetrician–gynecologists are encouraged to stock and administer the influenza vaccine to their pregnant patients in their offices, and should get the influenza vaccine themselves every season. Depending on the size of a practice and services provided, there may not be the means to stock and offer the influenza vaccine in the office. If the influenza vaccine cannot be offered in a practice, obstetrician–gynecologists and obstetric care providers should refer patients to another health care provider, pharmacy, or community vaccination center.

If a patient receives the influenza vaccine outside of the obstetrician–gynecologist’s office, it is important for the site that provided the vaccination to provide proper vaccine documentation if the site does not work directly with a centralized vaccine registration program, so that the patient’s immunization record can be updated appropriately. These combined efforts send a powerful message to pregnant women that vaccination is very important for their protection and for their newborns.

**Conclusion**

Pregnant women are particularly vulnerable to influenza infection and its resulting morbidities; therefore, influenza vaccination is an integral element of prepregnancy, prenatal, and postpartum care. It is imperative that obstetrician–gynecologists, other health care providers, health care organizations, and public health officials continue efforts to improve the rate of influenza vaccination among pregnant women. Doing so will benefit women and their newborns.

**For More Information**

The American College of Obstetricians and Gynecologists has identified additional resources on topics related to this document that may be helpful for obstetrician–gynecologists, other health care providers, and patients. You may view these resources at: [www.acog.org/More-Info/FluVaccine](http://www.acog.org/More-Info/FluVaccine).

These resources are for information only and are not meant to be comprehensive. Referral to these resources does not imply the American College of Obstetricians and Gynecologists’ endorsement of the organization, the organization’s website, or the content of the resource. The resources may change without notice.

**References**


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Frequently Asked Questions Concerning Seasonal Influenza for Obstetrician–Gynecologists

Should pregnant women be immunized against seasonal influenza?
Yes. Influenza vaccination is an essential element of prenatal care because influenza can lead to serious illness, including a higher chance of developing pneumonia, when it occurs either in the antepartum or postpartum period. The Centers for Disease Control and Prevention’s Advisory Committee on Immunization Practices and the American College of Obstetricians and Gynecologists recommend that all adults receive an annual influenza vaccine and that all women who are or will be pregnant during influenza season receive any licensed, recommended, age-appropriate, inactivated influenza vaccine during any trimester, as soon as it is available. Multiple studies indicate that during pregnancy, women are at increased risk of serious medical complications from influenza. In addition, because the influenza vaccine is not effective in infants younger than six months, passive immunization of fetuses through transplacentally transmitted antibodies is currently the best prevention strategy for newborns. Vaccination in the postpartum period is an alternative only when vaccination during pregnancy cannot be completed. It is safe for breastfeeding women to receive the flu vaccine.

Is it safe for pregnant women to be immunized against seasonal influenza?
Yes. Numerous studies, including clinical trials and observational studies, and data from safety reporting systems have consistently demonstrated the safety of influenza vaccination during pregnancy. In fact, data show that newborns of women who received the flu vaccine while pregnant have much lower rates of influenza than newborns whose mothers were not vaccinated during pregnancy. To date, only one small retrospective case–control study has suggested a possible association between receipt of an influenza vaccine containing A/H1N1pdm early in the first trimester and spontaneous abortion in women who also received an influenza vaccine containing A/H1N1pdm in the previous influenza season (1). This has not been observed in other seasons. Pregnant women should be counseled that because of the lack of evidence of biological plausibility, several notable flaws in this study, and the preponderance of other data showing no association of influenza vaccination and miscarriage, the recommendation for flu vaccine given in any trimester has not changed. The influenza vaccine is made the same way each year with the only difference being the use of different strains of influenza virus.

When should pregnant women be immunized?
All women who are or will be pregnant during influenza season should receive an inactivated influenza vaccine as soon as it is available. Ideally, an influenza vaccination should be given by the end of October, but vaccination at any time during the influenza season is encouraged to ensure protection during the period of circulation. The inactivated influenza vaccine can be given to all women during any trimester. Because flu vaccines are recommended annually for all adults, pregnant women should be vaccinated even if they received a flu vaccine during a previous pregnancy.

Which influenza vaccine should pregnant women receive?
Pregnant women should receive any licensed, recommended, age-appropriate inactivated influenza vaccine, given as an intramuscular injection in the deltoid muscle. The Centers for Disease Control and Preventions’ Advisory Committee on Immunization Practices and the American College of Obstetricians and Gynecologists do not preferentially recommend a specific formulation of the influenza vaccine.

Can a person with an egg allergy receive an influenza vaccine?
Egg allergy, including hives, is no longer a contraindication to receipt of the influenza vaccine. Individuals, including pregnant women, who have experienced only hives after exposure to egg should receive any licensed, recommended, age-appropriate, influenza vaccine. Individuals who reported symptoms other than hives (e.g., angioedema, respiratory distress, lightheadedness, or recurrent emesis) or who required epinephrine or another emergency medical intervention, also may receive any licensed and recommended influenza vaccine that is otherwise appropriate. However, their vaccine should be administered in an inpatient or outpatient medical setting and under the supervision of health care providers who are able to recognize and manage severe allergic conditions. A previous severe allergic reaction to influenza vaccine, regardless of the component suspected of causing the reaction, is a contraindication to future receipt of the vaccine.

(continued)
Is it safe for pregnant women to receive an influenza vaccine that contains mercury (thimerosal)?

Yes. Although some individuals have raised concerns that thimerosal, a mercury-containing preservative used in multidose vials of the influenza vaccine, may be unsafe, there is no scientific evidence that thimerosal-containing vaccines cause health or developmental problems in children born to women who received vaccines with thimerosal during pregnancy. Therefore, although thimerosal-free formulations of the influenza vaccine are available, the Centers for Disease Control and Prevention’s Advisory Committee on Immunization Practices does not indicate a preference for thimerosal-containing or thimerosal-free vaccines for any group, including pregnant women.

Can I administer the tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis vaccine and the flu vaccine during the same visit?

Yes. You can give the tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) vaccine and the flu vaccine in the same visit. Receiving these vaccinations at the same time is safe and effective.

How should I treat a pregnant patient with suspected influenza illness?

Pregnant women are at high risk of serious complications of influenza (flu) infection such as intensive care unit admission, preterm delivery, and maternal death. Patients with flu-like illness should be treated with antiviral medications presumptively regardless of vaccination status. Treatment with oseltamivir (75 mg twice daily for 5 days) is preferred, however if oseltamivir is unavailable zanamivir (two inhalations [10 mg] twice daily for 5 days) may be substituted. Health care providers should not rely on test results to initiate treatment; and should treat presumptively based on clinical evaluation. See the American College of Obstetricians and Gynecologists and Society for Maternal–Fetal Medicine’s “Influenza Season Assessment and Treatment for Pregnant Women with Influenza-Like Illness” algorithm for more information.

Should we provide antiviral chemoprophylaxis to pregnant women exposed to influenza?

Yes. Because of the high potential for morbidity, the Centers for Disease Control and Prevention and the American College of Obstetricians and Gynecologists recommend that postexposure antiviral chemoprophylaxis (75 mg of oseltamivir once daily for 10 days) be considered for pregnant women and women who are up to 2 weeks postpartum (which includes pregnancy loss) who have had close contact with someone likely to have been infected with influenza. If oseltamivir is unavailable, zanamivir can be substituted, two inhalations once daily for 10 days. All women who are pregnant or in the first 2 weeks postpartum should be counseled to immediately call for evaluation if the early signs and symptoms of influenza infection (eg, a fever greater than 100.0°F coupled with shortness of breath, syncope, or chest pain) develop.

Resources

For more information on antiviral chemoprophylaxis in pregnant and postpartum women, see the Centers for Disease Control and Prevention’s website at www.cdc.gov/flu/professionals/antivirals/avrec_ob.htm.

For more information on seasonal flu vaccine safety and pregnant women, see the Centers for Disease Control and Prevention’s website at www.cdc.gov/flu/protect/vaccine/qa_vacpregnant.htm.

For physician and patient resources, see the American College of Obstetrician and Gynecologists’ Immunization for Women website at www.immunizationforwomen.org.

Reference

Frequently Asked Questions for Patients Concerning Influenza (Flu) Vaccination During Pregnancy

I am pregnant. Should I get the influenza vaccine (flu shot)?
Yes. Getting a flu shot is the best way to protect you and your baby from serious illness from the flu. Pregnant women and their fetuses have a higher risk of serious complications from the flu. The flu shot given during pregnancy protects women and their newborns. You need a flu shot each year because the flu viruses targeted by the vaccine can change from year to year. The flu shot has been safely given to millions of pregnant women for many years.

How does my flu shot protect my newborn?
When you get a flu shot, your body makes antibodies that also pass to your fetus. This means your baby has protection against the flu after birth. This is important because infants less than 6 months of age are too young to get the flu shot.

Why is it important for pregnant women to get the flu shot?
The flu is a mild-to-severe illness that also often includes fever, body aches, sore throat, cough, and fatigue. Pregnant women who get the flu can become much sicker than women who get the flu when they are not pregnant. Pregnant women who get the flu have a higher chance of the flu turning into pneumonia than women who are not pregnant. Pneumonia is a serious infection in the lungs that usually requires treatment in the hospital. Pregnant women who get the flu often need more medical visits and frequently need to be admitted to the hospital for observation and treatment.

During which trimester is it safe to get a flu shot?
The flu shot can be safely given during any trimester. Pregnant women can get the flu shot at any point during the flu season (typically October through May). Pregnant women should get the shot as soon as possible when it becomes available. If you are pregnant, talk with your obstetrician–gynecologist (ob-gyn) or other health care provider about getting the flu shot.

Which flu vaccine should pregnant women get?
Pregnant women should receive any licensed, recommended, age-appropriate inactivated flu vaccine. The Advisory Committee on Immunization Practices and the American College of Obstetricians and Gynecologists do not recommend one type of flu shot over another.

Will the flu shot give me the flu?
No. You cannot get the flu from getting the flu shot.

I got the flu shot, so why did I still get sick?
The flu shot does not protect against all strains of the flu virus. Experts do their best to determine the virus strains that are most likely to cause illness the following season. Sometimes additional strains end up causing illness. After your flu shot, it takes about 2 weeks for your body to develop antibodies, which are what protects you from the flu. So, if you are exposed to the flu during the time immediately after your flu shot, you can still get the flu. That is why it is important to get the flu shot before flu season becomes very active. The flu shot does not protect against the common cold or other respiratory viruses. During the flu season, you can still get a respiratory illness that is not the flu, even though you got a flu shot.

What are the side effects of the flu shot?
Low-grade fevers, headaches, and muscle aches can occur as temporary (1–2 days) side effects in some people after getting the flu shot. According to the Centers for Disease Control and Prevention, these risks are outweighed by the risks of the flu, which is a serious illness that can make you or your baby seriously ill for much longer.
Is there any reason I should not get the flu shot?
There are very few reasons that a pregnant woman should not get a flu shot. A history of egg allergy, including hives, is not a reason to avoid the flu shot. However, if you have had a severe allergic reaction after a previous flu shot, you should not get another flu shot. Talk with your ob-gyn or other health care provider about any reactions you may have had with past flu shots.

Are preservatives in flu vaccines safe for my baby?
Yes. Thimerosal is a mercury-containing preservative used in very small amounts in some flu shots. There is no scientific evidence that thimerosal causes health or developmental problems for pregnant women or children born to women who received thimerosal-containing shots during pregnancy. Thimerosal-free types of the flu shot also are available. Pregnant women can get the flu shot with or without the preservative.

What else can I do to keep my baby healthy and free of the flu?
Getting your flu shot while you are pregnant is the best step in protecting yourself and your fetus against the flu. Data show that babies born to women who got the flu shot while pregnant have much lower rates of flu compared with babies whose mothers did not get the shot. Breastfeeding your baby and making sure family members and caregivers get the flu shot also will protect your baby.

I am breastfeeding my baby. Is it safe for me to get the flu shot?
Yes. It is safe and recommended if you did not get a flu shot during pregnancy. The antibodies your body makes after the flu shot can be passed to your baby through breast milk. This reduces your baby’s chance of getting sick with the flu.

Is it safe to get a flu shot at my local pharmacy?
Yes. Pharmacists are well trained to give immunizations. Flu shots are available at most major pharmacies. You can find a location for a flu shot at www.vaccinefinder.org. This is a good option if your ob-gyn or other health care provider does not offer the flu shot in his or her office. Be sure to let your ob-gyn or other health care provider know when you have gotten the flu shot so that your medical record can be updated. The pharmacy also should provide you with documentation of your flu shot.

What should I do if I think I have the flu?
Although the flu shot is the most effective way to prevent the flu, there is still a chance you might get the flu. If you think you have the flu, contact your ob-gyn or other health care provider right away. Be sure to tell your health care provider that you are pregnant. If you have severe symptoms, such as a fever higher than 100.0°F and trouble breathing, dizziness when standing, or pain in your chest, contact your ob-gyn or other health care provider and seek immediate medical attention. You also should contact your ob-gyn or other health care provider if you have had close contact with someone likely to have been infected with the flu.

Can I get the tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis shot and flu shot at the same time?
Yes. You can get the tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) shot and the flu shot in the same visit. Receiving these shots at the same time is safe and effective.

Resources

American College of Obstetricians and Gynecologists
Immunization for Women: Influenza Overview for Patients

American College of Obstetricians and Gynecologists
Immunization for Women
www.immunizationforwomen.org

Centers for Disease Control and Prevention
Seasonal influenza: Pregnant Women and Influenza (Flu)
www.cdc.gov/flu/protect/vaccine/pregnant.htm

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American College of Obstetricians and Gynecologists, 409 12th Street SW, PO Box 96920, Washington, DC 20090-6920
Frequently Asked Questions for Patients Concerning Vaccine Safety

How does getting vaccinated during pregnancy protect my baby?
Vaccines cause your body to make protective antibodies against the particular disease for which you are being vaccinated. Some of the antibodies from the vaccines that you get when you are pregnant are passed to your fetus. Because newborns cannot get many vaccines until they are 2–6 months of age, vaccination during pregnancy helps protect your baby from illness during the first months of life.

How do I know what vaccines I need?
Discuss with your obstetrician–gynecologist the vaccines that you have previously received. Your obstetrician–gynecologist or other health care provider will recommend the vaccines you need based on your medical history. If you are not able to get the recommended vaccines while you are pregnant, talk to your obstetrician–gynecologist or other health care provider about the vaccines you may need to protect you and your family.

Are vaccines safe for me? Are they safe for my baby?
Vaccination is one of the most important things that you can do to protect your health and your baby’s health. Vaccines help protect you and your baby from many life-threatening diseases. Most vaccines are safe for you and your fetus to get during pregnancy. For example, flu shots have been given safely to millions of pregnant women for more than 50 years. Vaccines made with live-attenuated viruses should not be given during pregnancy. These include the nasal spray flu vaccine, the varicella (chickenpox) vaccine, and the measles–mumps–rubella (MMR) vaccine.

I have heard that some vaccines have mercury in them. Is it safe to get these vaccines during pregnancy?
Yes. Thimerosal, a type of mercury, has been removed from most vaccines that you can get in the United States. It is only present in trace amounts in certain versions of the flu vaccine. It has not been shown to be harmful to pregnant women or fetuses. It does not cause autism. The benefits of preventing life-threatening illnesses in a mother and child far outweigh any potential risks of the vaccine.

Where can I find more information about vaccines for me and my family?

RESOURCES
The American College of Obstetricians and Gynecologists
www.immunizationforwomen.org
Centers for Disease Control and Prevention
Vaccine Safety
www.cdc.gov/vaccinesafety

This information is designed to aid practitioners in assessing their patients’ immunization needs. This guidance should not be construed as dictating an exclusive course of treatment or procedure. Variations in practice may be warranted based on the needs of the individual patient, resources, and limitations unique to the institution or type of practice. Please be advised that this guidance may become out-of-date as new information becomes available from the Centers for Disease Control and Prevention.

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The American College of Obstetricians and Gynecologists, 409 12th Street SW, PO Box 96920, Washington, DC 20090-6920
Assessment and Treatment for Pregnant Women With Suspected or Confirmed Influenza

Pregnant women are at high risk of serious complications of influenza (flu) infection such as intensive care unit admission, preterm delivery, and maternal death. Patients with suspected or confirmed influenza should be treated with antiviral medications presumptively regardless of vaccination status. Do not rely on test results to initiate treatment; treat presumptively based on clinical evaluation. The following algorithm is designed to aid practitioners in promptly assessing and treating suspected or confirmed influenza in pregnant women, and can be used for telephone triage.

Assess Patient’s Symptoms

Influenza symptoms typically include fever ≥37.8°C (100.0°F) and one or more of the following:
• Cough
• Runny nose
• Sore throat
• Headaches or body aches
• Fatigue
• Difficulty breathing or shortness of breath
If a patient does not report fever but has abrupt onset of symptoms suggestive of influenza, proceed with the algorithm.

Conduct Illness Severity Assessment

• Does she have difficulty breathing or shortness of breath?
• Does she have new pain or pressure in the chest other than pain with coughing?
• Is she unable to keep liquids down?
• Does she show signs of dehydration such as dizziness when standing?
• Is she less responsive than normal or does she become confused when talking to her?
• Did she have influenza symptoms that improved but then returned or got worse?

Assess Clinical and Social Risks

• Comorbidities (eg, HIV or asthma)
• Obstetric issues (eg, preterm labor)
• Inability to care for self or arrange follow-up if necessary

Low Risk
Begin antiviral treatment over the phone or in person following CDC guidelines. Treatment via phone is acceptable to help reduce the spread of disease among other pregnant patients in the office. Plan for follow-up within 24–48 hours.

Moderate Risk
See patient as soon as possible in an ambulatory setting with resources to determine severity of illness. When possible, send patient to a setting where she can be isolated. Clinical assessment for respiratory compromise includes physical examination and tests such as pulse oximetry, chest X-ray, or ABG as clinically indicated. Antiviral treatment should follow CDC guidelines.

Elevated Risk
Recommend she immediately seek care in an emergency department or equivalent unit that treats pregnant women. When possible, send patient to a setting where she can be isolated. Consider admitting patient to critical care unit. Antiviral treatment should follow CDC guidelines.

No Positive Answers
Routine Prenatal Care

Any Positive Answers

No Positive Answers
Assess Clinical and Social Risks

Any Positive Answers

No Positive Answers
Assess Clinical and Social Risks

Abbreviations: ABG, arterial blood gases; CDC, Centers for Disease Control and Prevention; HIV, human immunodeficiency virus.

*Oseltamivir (preferred) (75-mg orally twice daily for 5 days) or Zanamivir (two 5-mg inhalations [10 mg total] twice daily for 5 days).

‡Check with institution to determine requirements for testing. Do not rely on test results to initiate treatment; treat presumptively based on clinical evaluation.

†Treatment within 48 hours of the onset of symptoms is ideal but treatment should not be withheld if the ideal window is missed. Because of the high potential for morbidity and mortality for pregnant and postpartum patients, the CDC advises that postexposure antiviral chemoprophylaxis can be considered for pregnant women and women who are up to 2 weeks postpartum (including after pregnancy loss) who have had close contact with infectious individuals. The chemoprophylaxis recommendation is oseltamivir 75 mg once daily for 7–10 days.

Seasonal influenza vaccination will help reduce incidence of influenza. Check ACOG’s Immunization for Women website at www.immunizationforwomen.org for any future updates on this information.

This information is designed as an educational resource to aid clinicians in providing obstetric and gynecologic care, and use of this information is voluntary. This information should not be considered as inclusive of all proper treatments or methods of care or as a statement of the standard of care. It is not intended to substitute for the independent professional judgment of the treating clinician. Variations in practice may be warranted when, in the reasonable judgment of the treating clinician, such course of action is indicated by the condition of the patient, limitations of available resources, or advances in knowledge or technology. The American College of Obstetricians and Gynecologists reviews its publications regularly; however, its publications may not reflect the most recent evidence. Any updates to this document can be found on www.acog.org or by calling the ACOG Resource Center.

While ACOG makes every effort to present accurate and reliable information, this publication or reliance on the information presented.

Please be advised that this guidance may become out-of-date as new information on influenza in pregnant women becomes available from the Centers for Disease Control and Prevention (CDC).

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The American College of Obstetricians and Gynecologists’ immunization website, Immunization for Women, was created to provide ob-gyns and their patients with a central, trusted source of up-to-date information about immunizations and vaccine-preventable diseases.

It is our goal to empower women with the knowledge they need to make informed decisions about immunizations and to provide ob-gyns with a valuable resource for immunization best practices and patient education.

On the website you can find information on the following:

» Up to date immunization recommendations for adult and adolescent females

» Specific immunization information for pregnant and breastfeeding women

» Details on proper immunization coding and reimbursement

» Information on how to set up and expand an office-based immunization program

» Latest news and alerts
Influenza (Flu) Vaccine
(Inactivated or Recombinant):
*What you need to know*

1 **Why get vaccinated?**

Influenza (“flu”) is a contagious disease that spreads around the United States every year, usually between October and May.

Flu is caused by influenza viruses, and is spread mainly by coughing, sneezing, and close contact.

Anyone can get flu. Flu strikes suddenly and can last several days. Symptoms vary by age, but can include:
- fever/chills
- sore throat
- muscle aches
- fatigue
- cough
- headache
- runny or stuffy nose

Flu can also lead to pneumonia and blood infections, and cause diarrhea and seizures in children. If you have a medical condition, such as heart or lung disease, flu can make it worse.

Flu is more dangerous for some people. Infants and young children, people 65 years of age and older, pregnant women, and people with certain health conditions or a weakened immune system are at greatest risk.

Each year thousands of people in the United States die from flu, and many more are hospitalized.

**Flu vaccine can:**
- keep you from getting flu,
- make flu less severe if you do get it, and
- keep you from spreading flu to your family and other people.

2 **Inactivated and recombinant flu vaccines**

A dose of flu vaccine is recommended every flu season. Children 6 months through 8 years of age may need two doses during the same flu season. Everyone else needs only one dose each flu season.

Some inactivated flu vaccines contain a very small amount of a mercury-based preservative called thimerosal. Studies have not shown thimerosal in vaccines to be harmful, but flu vaccines that do not contain thimerosal are available.

There is no live flu virus in flu shots. **They cannot cause the flu.**

There are many flu viruses, and they are always changing. Each year a new flu vaccine is made to protect against three or four viruses that are likely to cause disease in the upcoming flu season. But even when the vaccine doesn’t exactly match these viruses, it may still provide some protection.

Flu vaccine cannot prevent:
- flu that is caused by a virus not covered by the vaccine, or
- illnesses that look like flu but are not.

It takes about 2 weeks for protection to develop after vaccination, and protection lasts through the flu season.

3 **Some people should not get this vaccine**

Tell the person who is giving you the vaccine:
- If you have any severe, life-threatening allergies.
  If you ever had a life-threatening allergic reaction after a dose of flu vaccine, or have a severe allergy to any part of this vaccine, you may be advised not to get vaccinated. Most, but not all, types of flu vaccine contain a small amount of egg protein.
- If you ever had Guillain-Barré Syndrome (also called GBS).
  Some people with a history of GBS should not get this vaccine. This should be discussed with your doctor.
- If you are not feeling well.
  It is usually okay to get flu vaccine when you have a mild illness, but you might be asked to come back when you feel better.
Risks of a vaccine reaction

With any medicine, including vaccines, there is a chance of reactions. These are usually mild and go away on their own, but serious reactions are also possible.

Most people who get a flu shot do not have any problems with it.

Minor problems following a flu shot include:
• soreness, redness, or swelling where the shot was given
• hoarseness
• sore, red or itchy eyes
• cough
• fever
• aches
• headache
• itching
• fatigue

If these problems occur, they usually begin soon after the shot and last 1 or 2 days.

More serious problems following a flu shot can include:
• There may be a small increased risk of Guillain-Barré Syndrome (GBS) after inactivated flu vaccine. This risk has been estimated at 1 or 2 additional cases per million people vaccinated. This is much lower than the risk of severe complications from flu, which can be prevented by flu vaccine.
• Young children who get the flu shot along with pneumococcal vaccine (PCV13) and/or DTaP vaccine at the same time might be slightly more likely to have a seizure caused by fever. Ask your doctor for more information. Tell your doctor if a child who is getting flu vaccine has ever had a seizure.

Problems that could happen after any injected vaccine:
• People sometimes faint after a medical procedure, including vaccination. Sitting or lying down for about 15 minutes can help prevent fainting, and injuries caused by a fall. Tell your doctor if you feel dizzy, or have vision changes or ringing in the ears.
• Some people get severe pain in the shoulder and have difficulty moving the arm where a shot was given. This happens very rarely.
• Any medication can cause a severe allergic reaction. Such reactions from a vaccine are very rare, estimated at about 1 in a million doses, and would happen within a few minutes to a few hours after the vaccination.

As with any medicine, there is a very remote chance of a vaccine causing a serious injury or death.

The safety of vaccines is always being monitored. For more information, visit: www.cdc.gov/vaccinesafety/

What if there is a serious reaction?

What should I look for?
• Look for anything that concerns you, such as signs of a severe allergic reaction, very high fever, or unusual behavior.

Signs of a severe allergic reaction can include hives, swelling of the face and throat, difficulty breathing, a fast heartbeat, dizziness, and weakness. These would start a few minutes to a few hours after the vaccination.

What should I do?
• If you think it is a severe allergic reaction or other emergency that can’t wait, call 9-1-1 and get the person to the nearest hospital. Otherwise, call your doctor.
• Reactions should be reported to the Vaccine Adverse Event Reporting System (VAERS). Your doctor should file this report, or you can do it yourself through the VAERS web site at www.vaers.hhs.gov, or by calling 1-800-822-7967.

VAERS does not give medical advice.

The National Vaccine Injury Compensation Program

The National Vaccine Injury Compensation Program (VICP) is a federal program that was created to compensate people who may have been injured by certain vaccines.

Persons who believe they may have been injured by a vaccine can learn about the program and about filing a claim by calling 1-800-338-2382 or visiting the VICP website at www.hrsa.gov/vaccinecompensation. There is a time limit to file a claim for compensation.

How can I learn more?
• Ask your healthcare provider. He or she can give you the vaccine package insert or suggest other sources of information.
• Call your local or state health department.
• Contact the Centers for Disease Control and Prevention (CDC):
  - Call 1-800-232-4636 (1-800-CDC-INFO) or
  - Visit CDC’s website at www.cdc.gov/flu

Vaccine Information Statement
Inactivated Influenza Vaccine

08/07/2015
42 U.S.C. § 300aa-26
Vacuna (inactiva o recombinante) contra la influenza (gripe):
Lo que debe saber

1 ¿Por qué vacunarse?

La influenza (gripe o el “flu”) es una enfermedad contagiosa que se propaga por los Estados Unidos cada año, normalmente entre octubre y mayo.

La influenza es causada por el virus de influenza, y la mayoría de las veces se propaga a través de tos, estornudos y contacto cercano.

Cualquier persona puede contraer la influenza. Los síntomas aparecen repentinamente, y pueden durar varios días. Los síntomas varían según la edad, pero pueden incluir:

- fiebre o escalofríos
- dolor de garganta
- dolor muscular
- cansancio

La influenza también puede causar neumonía e infecciones en la sangre, y puede causar diarrea y convulsiones en los niños. Si tiene una condición médica, como cardiopatía o una enfermedad en los pulmones, la influenza la puede empeorar.

La influenza es más grave en algunas personas. Los niños pequeños, gente de 65 años de edad o mayores, mujeres embarazadas y gente con ciertas condiciones físicas o un sistema inmunológico debilitado corren mayor riesgo.

Cada año miles de personas en los Estados Unidos mueren a causa de la influenza, y muchas más son hospitalizadas.

La vacuna contra la influenza puede:

- prevenir que usted se enferme de la influenza,
- reducir la severidad de la influenza si la contrae, y
- prevenir que contagie a su familia y otras personas con la influenza.

2 Vacunas contra la influenza inactivas y recombinantes

Se recomienda una dosis de la vacuna contra la influenza cada temporada de influenza. Algunos niños, entre los 6 meses a 8 años de edad, pueden necesitar dos dosis durante la misma temporada de influenza. Todos los demás sólo necesitan una dosis en cada temporada de influenza.

Algunas vacunas antígenicas inactivas contienen una muy pequeña cantidad de timerosal, un preservativo que contiene mercurio. Los estudios no han demostrado que el timerosal en las vacunas es dañino, pero hay vacunas antígenicas disponibles que no contienen timerosal.

No hay ningún virus vivo en las inyecciones contra la influenza. No pueden causar la influenza.

Hay muchos virus de influenza, y cambian constantemente. Cada año se formula una nueva vacuna antigripal para proteger contra 3 o 4 virus que serán los más probables causantes de enfermedad durante la próxima temporada de influenza. Pero incluso cuando la vacuna no previene estos virus, todavía puede proporcionar cierto nivel de protección.

La vacuna contra la influenza no puede prevenir:

- la influenza causada por un virus que no es protegido por la vacuna o
- enfermedades que son similares a la influenza pero no son la influenza.

Toma alrededor de 2 semanas desarrollar protección después de la vacunación, y dicha protección dura a lo largo de la temporada de la influenza.

3 Algunas personas no deben recibir esta vacuna

Digale a la persona que lo vacune:

- Si tiene alguna alergia grave y potencialmente mortal. Si ha tenido una reacción alérgica y potencialmente mortal después de una vacuna antigripal, o si es gravemente alérgico a cualquier componente de esta vacuna, se le podrá aconsejar que no se vacune. La mayoría, pero no todas, las vacunas antígenicas contienen una pequeña cantidad de proteína de huevo.

- Si ha tenido el Síndrome de Guillain-Barré (también conocido como GBS). Algunas personas con antecedentes de GBS no deben recibir esta vacuna. Debe consultar a su médico sobre esto.

- Si no se siente bien. Normalmente está bien el ser vacunado contra la influenza cuando está levemente enfermo, pero es posible que se le pida regresar cuando se sienta mejor.

4 Riesgos de reacción a la vacuna

Igual que cualquier medicamento, incluyendo las vacunas, hay riesgo de efectos secundarios. Normalmente son leves y se resuelven solos, pero también pueden ocurrir reacciones graves.
La mayoría de las personas que se vacunan contra la influenza no tienen ningún problema con la vacuna.

**Problemas leves** que pueden ocurrir después de la vacuna antigripal inactiva:
- Dolor, enrojecimiento o hinchazón donde recibió la inyección
- Ronquera
- Dolor, enrojecimiento o comezón en los ojos
- Tos
- Fiebre
- Dolores
- Dolor de cabeza
- Comezón
- Cansancio

Si estos problemas ocurren, normalmente comienzan poco después de la vacunación y duran de 1 a 2 días.

**Problemas más graves** que pueden ocurrir después de la vacuna antigripal inactiva incluyen:
- Es posible que haya un riesgo un poco mayor de contraer el Síndrome Guillain-Barré (GBS) después de recibir una vacuna antigripal inactiva. Se estima que este riesgo causa 1 ó 2 casos adicionales por cada millón de personas que recibe la vacunación. Esto es mucho menor que el riesgo de padecer de complicaciones severas causadas por la influenza, lo cual puede ser prevenido a través de la vacuna contra la influenza.
- Los niños pequeños que reciben la vacuna antigripal y la vacuna neumocócica (PCV13) o la vacuna DTaP a la misma vez pueden ser ligeramente más propensos de sufrir convulsiones causadas por fiebre. Pidale más información a su médico. Avísele a su médico si el niño que será vacunado ha tenido convulsiones.

**Problemas que pueden ocurrir después de cualquier vacuna inyectada:**
- Desmayos breves pueden ocurrir después de cualquier procedimiento médico, incluso la vacunación. Para evitar desmayos y heridas causadas por ellos, síntétese o acuétese por alrededor de 15 minutos. Avísele a su médico si se siente mareado o si tiene cambios en su visión o zumbido en los oídos.
- Algunas personas padecen de un dolor agudo y amplitud de movimiento reducida en el hombro del brazo donde se recibió la inyección. Esto ocurre muy raramente.
- Cualquier medicamento puede causar una reacción alérgica grave. Tales reacciones a una vacuna ocurren muy raramente, estimados en menos de 1 en un millón de dosis, y normalmente pasa en unos pocos minutos a varias horas después de la vacunación.

Como con cualquier medicamento, hay la posibilidad remota que la vacuna cause daño grave o la muerte.
Siempre se supervisa la seguridad de las vacunas. Para más información, visite [www.cdc.gov/vaccinesafety/](http://www.cdc.gov/vaccinesafety/)

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**¿Qué debo hacer?**
- Si cree que hay una reacción alérgica grave u otra emergencia que necesita atención inmediata, llame al 9-1-1 y lleve a la persona al hospital más cercano. Si no, puede llamar a su médico.
- Se debe reportar las reacciones al Sistema de Información sobre Eventos Adversos a Vacunas (VAERS). Su médico debe presentar este informe, o usted puede hacerlo por el sitio web de VAERS: [www.vaers.hhs.gov](http://www.vaers.hhs.gov), o llamando al 1-800-822-7967.

**VAERS no da consejos médicos.**

**El Programa Nacional de Compensación por Lesiones Causadas por Vacunas**

El Programa Nacional de Compensación por Lesiones Causadas por Vacunas (Vaccine Injury Compensation Program, VICP) es un programa federal creado para compensar a aquellas personas que pueden haber sido lesionadas por ciertas vacunas.

Las personas que creen que posiblemente hayan resultado heridas por una vacuna pueden encontrar más información sobre el programa y sobre la presentación de reclamos llamando al 1-800-338-2382 o visitando el sitio web del VICP [www.hrsa.gov/vaccinecompensation](http://www.hrsa.gov/vaccinecompensation). Hay un límite de plazo para presentar un reclamo de indemnización.

**¿Cómo puedo saber más?**
- Consulte a su proveedor de la salud. Él o ella le puede dar un folleto con información sobre la vacuna o sugerir otras fuentes de información.
- Llévele a su departamento de la salud local o de su estado.
- Contacte a los Centros para el Control y la Prevención de Enfermedades (Centers for Disease Control and Prevention, CDC): 
  - Llame al 1-800-232-4636 (1-800-CDC-INFO) o
  - Visite el sitio web del CDC: [www.cdc.gov/flu](http://www.cdc.gov/flu)

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**Vaccine Information Statement**

**Inactivated Influenza Vaccine**

**Translation provided by Shoo the Flu**

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**Spanish**

**42 U.S.C. § 300aa-26**