



2009 H1N1 and Diabetes



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Why are we talking about this?

- Background: People with diabetes are considered at high risk for developing complications from influenza both seasonal and 2009 H1N1 according to past and new data.
- Goal: Work with our partners on messages, dissemination to people who have diabetes and those who care for them (family, health care professionals, etc).
- Give resources to partners.

What is 2009 H1N1 virus?

- This new virus is very different from what normally circulates in North American pigs.
- It has two genes from flu viruses that normally circulate in pigs in Europe and Asia and bird (avian) genes and human genes. Scientists call this a "quadruple reassortant" virus.

How does 2009 H1N1 virus spread?

- Spread of 2009 H1N1 virus is thought to occur in the same way that seasonal flu spreads.
- Flu viruses are spread mainly from person to person through coughing or sneezing by people with influenza.
- Sometimes people may become infected by touching something , such as a surface or object with flu viruses on it and then touching their mouth or nose.

What are the signs and symptoms of 2009 H1N1 virus in people?

- Symptoms include: Fever, cough, sore throat, runny or stuffy nose, body aches, headache, chills and fatigue.
- A significant number of people who have been infected with this virus also have reported diarrhea and vomiting.
- Severe illnesses and death has occurred as a result of illness associated with this virus.

How severe is illness associated with 2009 H1N1 flu virus?

- Mild to severe.
- While most people who have been sick have recovered without needing medical treatment, hospitalizations and deaths from infection with this virus have occurred.

Who is high risk and what does that mean?

- In seasonal flu, certain people are at “high risk” of serious complications. People > 65 years, children < 5 years, pregnant women, and people of any age with certain chronic medical conditions.
- About 70% of people who have been hospitalized with 2009 H1N1 virus have one or more medical conditions previously recognized as placing people at “high risk” of serious seasonal flu-related complications: Pregnancy, diabetes, heart disease, asthma, and kidney disease.
- Studies have shown that no children and very few adults < 60 years have existing antibody to 2009 H1N1 flu virus.
- 1/3 adults > 60 years may have antibodies against this virus. It is unknown how much, if any, protection may be afforded against 2009 H1N1 flu by any existing antibody.

Who is at higher risk of influenza related complications?

Groups at higher risk for 2009 H1N1 influenza related complications are similar to those at higher risk for seasonal influenza complications and include:

- Children < 5 years. The risk for severe complications from seasonal influenza is highest among children < 2 years.
- Adults 65 years of age and older.
- Pregnant women.
- People of any age with certain chronic medical conditions (for example, asthma, diabetes, lung disease, people with weakened immune systems, etc.).
- People <19 years who are receiving long-term aspirin therapy.

Diabetes and Seasonal Influenza

- Only 32% of adults aged 18- 49 years with a chronic condition (including diabetes) received a seasonal flu vaccine in the 2008-2009 season.
- Influenza can be especially dangerous for adults and children with diabetes, who are more likely to get very sick and even die with influenza infection.
- People with diabetes are six times more likely to be hospitalized with influenza complications and almost three times more likely to die from influenza.
- More than 10 percent of deaths related to influenza and pneumonia are attributed to diabetes.
- Influenza can interfere with efforts to control blood sugar levels, putting those with diabetes at increased risk of high or low blood sugar, and those with type 1 diabetes, in particular, at an increased risk of diabetic coma.

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Influenza Vaccination: An Unmet Need in Patients With Diabetes Clinical Diabetes 25:145-149, 2007

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Four Key Messages

- Vaccine information.
- Antiviral medication information.
- Make a plan. Know sick day rules.
- Everyday precautions.

Vaccination Messages: 2009 H1N1

- The goal is to vaccinate all people but people with diabetes are in the target group because they may be at higher risk for complications from 2009 H1N1 influenza.
- People who have diabetes in the age group 6 months through age 64, are in the target group to receive the 2009 H1N1 vaccine when it becomes available in the upcoming weeks. Talk to your health care provider.
- **People who have diabetes should receive the Injected (inactive) vaccination, not the live attenuated nasal mist vaccination for both 2009 H1N1 and seasonal flu.**
- People can receive both the seasonal flu vaccine and the 2009H1N1 (injected version) at the same time.

Vaccination Messages: 2009 H1N1

- While people aged 65 years and older aren't included in the high risk groups to be targeted first for 2009 H1N1 influenza vaccination, they can get the 2009 H1N1 influenza vaccine as soon as the high-risk groups have had the opportunity to be vaccinated
- If they feel like they have flu symptoms, they should not delay in seeking medical treatment because they are more likely than people in some other groups to develop serious complications from their illness. That is why people 65 years and older are prioritized for treatment with antiviral drugs this season if they do become sick.
- They definitely need the annual flu shot right now.

Vaccination Messages: 2009 H1N1

- We expect the 2009 H1N1 influenza vaccine to have a similar safety profile as seasonal flu vaccines, which have a very good safety track record.
- CDC expects that any serious side effects following vaccination with the 2009 H1N1 influenza vaccine would be rare.
- If side effects occur, they will likely be similar to those experienced following seasonal influenza vaccine.
- The CDC and FDA closely monitor the safety of seasonal influenza and other vaccines licensed for use in the United States in cooperation with state and local health departments, health care providers, and other partners.

Vaccination Messages: 2009 H1N1

- Take time to get vaccinated against influenza. The CDC recommends seasonal influenza vaccine annually to all persons with diabetes 6 months of age and older and influenza vaccination for close household contacts and out-of-home caregivers of anyone with diabetes.
- Getting a regular flu vaccine is part of an overall diabetes management plan. CDC recommends that you get your regular flu vaccine now.
- Getting a seasonal flu vaccine early is a smart move and the best way to protect against regular flu the whole year. Even if vaccinated in September, the protection you get from the vaccine will not wear off before the flu season is over.

Vaccination Messages: 2009 H1N1

- Influenza vaccine is safe and effective.
- Influenza vaccination is the most effective intervention for reducing the impact of influenza. Studies have shown influenza vaccination is associated with a 72% reduction in hospitalizations and death in persons with diabetes aged 18 to 64 years.
- People with diabetes should get the injection vaccine, NOT the “live” attenuated nasal mist vaccine for both the seasonal and 2009 H1N1 vaccines.
- A pneumonia (pneumococcal) vaccine should also be part of a diabetes management plan. Check with your health care provider.

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Vaccine Questions

- How many doses of the H1N1 2009 vaccine are required?
 - Children younger than the age of 10 years should receive two doses of the 2009 H1N1 vaccine, separated by 28 days.
 - Results from clinical trials shows that a single 15-microgram dose of a non-adjuvanted 2009 H1N1 influenza vaccine – the same dose that is in the seasonal flu vaccine – generates an immune response that is expected to be protective against 2009 H1N1 influenza virus in the majority of 10- to 17-year-olds within 8 to 10 days following vaccination. These results are similar to those recently reported in clinical trials of healthy adults.

Vaccine Questions

- Are both the seasonal and 2009 H1N1 vaccination recommended and can they be given at the same time?
 - In people with diabetes, both vaccines are recommended. Simultaneous administration of inactivated vaccines against seasonal and the 2009 H1N1 influenza viruses is permissible if different anatomic sites are used. LAIV (Live Attenuated Influenza Vaccine) seasonal or H1N1 2009 is NOT recommended for persons with diabetes.

Vaccine Questions

- **Can patients who are allergic to eggs receive the 2009 H1N1 flu vaccine?**
 - Asking persons if they can eat eggs without adverse effects is a reasonable way to determine who might be at risk for allergic reactions from receiving influenza vaccines. Persons who have had symptoms such as hives or swelling of the lips or tongue, or who have experienced acute respiratory distress after eating eggs, should consult a physician for appropriate evaluation to help determine if influenza vaccine should be administered. Persons who have documented (IgE)-mediated hypersensitivity to eggs, including those who have had occupational asthma related to egg exposure or other allergic responses to egg protein, also might be at increased risk for allergic reactions to influenza vaccine, and consultation with a physician before vaccination should be considered. A regimen has been developed for administering influenza vaccine to asthmatic children with severe disease and egg hypersensitivity (*J Pediatr* 1985;106:931-3.).

Vaccine Questions

- **Can contacts of people with weakened immune systems get the nasal-spray flu vaccine?**
 - People who are in contact with others with severely weakened immune systems when they are being cared for in a protective environment (for example, people with hematopoietic stem cell transplants), should not get the nasal spray vaccine, including the 2009 H1N1 nasal spray vaccine if they will come into contact with the severely immuno-compromised person within 7 days of vaccination. People who have contact with others with lesser degrees of immuno-suppression (for example, people with diabetes, people with asthma taking corticosteroids, or people infected with HIV) can get the nasal spray vaccine.

Antiviral Medication Therapy

- **Are there medicines to treat 2009 H1N1 infection?**
 - Yes. CDC recommends the use of oseltamivir (Tamiflu) or zanamivir (Relenza) for the treatment and/or prevention of infection with novel H1N1 flu virus.
 - Antiviral drugs are prescription medicines (pills, liquid or an inhaled powder) that fight against the flu by keeping flu viruses from reproducing in your body.
 - If you get sick, antiviral drugs can make your illness milder and make you feel better faster.
 - They may also prevent serious flu complications.
 - During the current pandemic, the priority use for influenza antiviral drugs is to treat severe influenza illness (for example hospitalized patients) and people who are sick who have a condition that places them at high risk for serious flu-related complications (including people with diabetes).

Antiviral Guidance

Antiviral medication may be prescribed for:

- Those patients who are ill with influenza-like illness and who are at high risk for influenza related complications.
- Some people are at increased risk of influenza complications and are prioritized for treatment with influenza antiviral drugs this season. They include:
 - People hospitalized with suspected or confirmed influenza
 - People with suspected or confirmed influenza who are at higher risk for complications
 - Children younger than 5 years old (children under 2 years old are at higher risk for complications than older children).
 - Adults 65 years and older.
 - Pregnant women.
 - People with certain chronic medical or immunosuppressive conditions.
 - People younger than 19 years of age who are receiving long-term aspirin therapy.

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Early Empiric Antiviral Treatment in Persons with Suspected Influenza (seasonal or 2009 H1N1) who are at Increased Risk of Developing Severe Disease

- **When treatment of influenza is indicated in a patient with suspected influenza, health care providers should initiate empiric antiviral treatment as soon as possible.**
- **Waiting for laboratory confirmation of influenza to begin treatment with antiviral drugs is not necessary.**
- **Patients with a negative rapid influenza diagnostic test should be considered for treatment if clinically indicated because a negative rapid influenza test result does not rule out influenza virus infection.**
- **The sensitivity of rapid influenza diagnostic tests for 2009 H1N1 virus can range from 10% to 70%, indicating that false negative results occur frequently.**

Key Message: Sick Day Guidelines

- Illnesses like the flu can lead to high blood sugars. Be sure to keep taking your diabetes pills or insulin. Don't stop taking them even if you can't eat. Your health care provider may advise you to take more insulin during sickness.
- Take your usual dose of pills or insulin as close as possible to the same time as usual.
- If you can't eat your usual diet, eat enough soft foods or drink enough liquids to take the place of the fruits and starchy foods you usually eat.

Key Message: Sick Day Guidelines (Cont.)

- Drink extra calorie-free liquids, like water, diet soda or tea, 4- 6 ounces every hour in small sips.
- Check your temperature every 4 hours. If your temperature is over 101° F, call your health care provider for advice.
- Check your urine for ketones.
- If you have moderate or large amounts of ketones in your urine and your blood glucose is 300mg/dl or higher, call your health care provider or go to an emergency room.

Take these everyday steps to protect your health:

- Cover your nose and mouth with a tissue when you cough or sneeze. Throw the tissue in the trash after you use it.
- Wash your hands often with soap and water, especially after you cough or sneeze. Alcohol-based hand cleaners are also effective.
- Avoid touching your eyes, nose, or mouth. Germs spread this way.
- 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.) Keep away from others as much as possible to keep from making others sick.

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Take these everyday steps to protect your health:

- Follow public health advice regarding school closures, avoiding crowds and other social distancing measures.
- Make a plan. Be prepared in case you get sick and need to stay home for a week or so; a supply of over-the-counter medicines, diabetes meds and supplies alcohol-based hand rubs, tissues and other related items might could be useful and help avoid the need to make trips out in public while you are sick and contagious



Resources



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CDC Division of Diabetes Translation (DDT) Resources

- All information may be found at www.cdc.gov/diabetes and www.flu.gov
- The CDC web site is updated on a regular basis as relevant information is obtained
- The CDC Diabetes Team has a team of clinical subject matter experts as well as communication specialists who are working on developing and disseminating information to partner organizations that reach people with diabetes and those who care for them.

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CDC Web sites for Clinicians and Consumers

- <http://www.cdc.gov/h1n1flu>
- <http://www.cdc.gov/h1n1/whatsnew.htm>
- <http://www.flu.gov>

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Clinician Outreach and Communication Activity (COCA)

- Weekly updates and webinars
- If you have any questions on these or other clinical issues, contact coca@cdc.gov
- To subscribe to the listserve, please visit:
<http://emergency.cdc.gov/clinregistry>
- <http://www/cdc/gov/h1n1flu/clinicians>

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What You Can Do to Help

- Pass along the resources to your members on your organizations' websites, newsletters, any current meetings.
- Posters and info sheets are on the www.flu.gov web site
- **Brochures**
Seasonal and 2009 H1N1 Flu: A Guide for Parents

"Take 3" Steps to Fight the Flu, (also in Spanish)
- **Posters**
[Children Need Flu Vaccine - Including 2009 H1N1](#)

[Why didn't I get my flu vaccine?](#)

["Take 3" Actions to Fight the Flu](#)
- Call 1-800-CDC-INFO with any questions