NOVEL INFLUENZA A (H1N1) VIRUS FACT SHEET

The following is a current synopsis of available information on infections caused by the novel influenza A (H1N1) virus and prevention methods. As of August 2009, according to the CDC, more than 98% of the circulating influenza viruses in the United States were 2009 H1N1 influenza. This fact sheet will be updated as new information becomes available.

What is the 2009 novel influenza A H1N1 (swine flu)?

Different from seasonal influenza, 2009 H1N1 (referred to as swine flu initially) is a new influenza virus that causes respiratory illness in humans. The virus was initially detected in the United States in April 2009. The virus is now spreading from person-to-person worldwide similar to the way regular seasonal influenza viruses spread. On June 11, 2009, the World Health Organization declared that a pandemic of 2009 H1N1 flu was underway. Currently, there seem to be increasing numbers of cases in certain areas of the United States . For weekly regional surveillance of 2009 H1N1 influenza in the United States go to: www.cdc.gov/flu/weekly and/or http://www.cdc.gov/flu/weekly/usmap.htm.

Why is 2009 H1N1 virus sometimes referred to as "swine flu"?

The virus was originally referred to as "swine flu" because laboratory testing showed that many of the genes in this new virus were very similar to influenza viruses that normally occur in pigs (swine) in North America. Further study has shown that the new virus is very different from that normally circulating 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. Microbiologists refer to this as a "quadruple reassortment" virus. Some believe that the novel 2009 influenza virus is a fourth-generation descendant of the 1918 pandemic influenza virus that killed 40 to 50 million persons worldwide. [Note: the genome of influenza viruses consists of eight distinct pieces that can be readily exchanged between different influenza viruses that infect humans, swine and birds.]

How does influenza virus spread?

The spread of all influenza viruses, including 2009 H1N1 and the 2009 seasonal influenza, occurs mainly from person-to-person through coughing or sneezing by people infected with the virus. Occasionally, people can become infected by touching something, such as a surface or object, with flu viruses on it and then touching their mouth, nose or eyes.

What are the symptoms of 2009 H1N1 virus infection?

The symptoms of influenza infection caused by the 2009 H1N1 virus and the seasonal influenza virus are similar. Both viruses can cause mild to severe illness and at times can lead to death. The flu is different than a cold. Influenza infections usually come on suddenly and may include these symptoms: fever (usually greater than 101° F), headache, extreme tiredness, dry cough, sore throat, runny or stuffy nose,

muscle aches, gastrointestinal symptoms such as nausea, vomiting and diarrhea (gastrointestinal symptoms are more common in children).

How severe is illness associated with 2009 H1N1 flu virus?

Illness from the 2009 H1N1 virus has ranged from mild to severe. Most people who have been infected recover without needing medical treatment. However, some patients have required hospitalizations and deaths have occurred. About 70% of people who have been hospitalized with the 2009 H1N1 virus have had one or more medical conditions previously recognized as placing people at “high risk” of serious complications. These include pregnancy, diabetes, heart disease, asthma or other chronic respiratory disease and kidney disease. One thing that appears to be different from seasonal influenza is that adults older than 64 years do not seem to be at increased risk of 2009 H1N1-related complications so far. This may be due to their past exposure to similar influenza viruses.

How does 2009 H1N1 flu compare to seasonal influenza in terms of severity and infection rates?

With seasonal influenza we know that cases normally are seen between October and March, illness can be mild to severe and at times lead to death. On average 36,000 people die of seasonal influenza and its complications each year. Over 90% of these deaths occur in persons older than 65 years.

According to preliminary data from the Centers for Disease Control and Prevention (CDC), infections caused by the 2009 H1N1 virus have caused a greater disease burden in people younger than 25 years of age than in older people. At this time there are few cases and few deaths in persons older than 64 years, which is unusual when compared with seasonal influenza. However, pregnancy and other previously recognized high risk medical conditions for seasonal flu appear to be associated with an increased risk of complications from the 2009 H1N1 infection. These underlying conditions include asthma, diabetes, a suppressed immune system, chronic heart and kidney disease, neurodegenerative and neuromuscular disorders and pregnancy. Laboratory testing is the only method to determine if a person has seasonal, 2009 H1N1 influenza or another influenza-like-illness.

How long can a person infected with 2009 H1N1 flu spread the virus to others?

People infected with seasonal and 2009 H1N1 flu shed virus and may be able to infect others from one day before showing symptoms to 5 to 7 days after. This can be longer in persons with weakened immune systems and children.

What about a vaccine for 2009 H1N1 influenza?

Vaccines are the most powerful tool for the control of influenza infections and the U.S. government is working closely with pharmaceutical manufacturers to take steps to quickly develop a vaccine. Manufacturers are using a strain of the 2009 H1N1 virus obtained by the CDC to manufacturer a vaccine. The process of 2009 H1N1 vaccine production takes several months and a vaccine should be available this fall. Clinical testing of the vaccine is ongoing and the results of these studies should be available in mid-to-late October. These studies will help determine if one or two doses of vaccine will be necessary to achieve protective antibody levels. The vaccine trials are being done in both children and adults. It

should be noted that the current seasonal influenza vaccine will not offer protections against the novel 2009 H1N1 virus. It is anticipated that both the seasonal influenza vaccine and the 2009 H1N1 vaccine can be administered the same day, but at different anatomical sites. The vaccine for seasonal influenza is being shipped from manufactures and should be available for administration shortly.

Who will be the target population for the 2009 H1N1 vaccine?

Because there will be a limited amount of 2009 H1N1 vaccine available and infections are already occurring the guiding principle from the CDC is to vaccinate as many persons as possible, as quickly as possible. Vaccination efforts should begin as soon as vaccine is available. State and local health officials and vaccination providers should make decisions about vaccine administration and distribution in accordance with state and local conditions. While it is not expected that there will be a shortage of the 2009 H1N1 vaccine, initially it will be available in limited quantities.

As of now, five initial target groups have been identified for vaccination efforts. These groups are: pregnant women, persons who live with or provide care for infants aged < six months, healthcare and emergency medical service personnel, children and young adults aged 6 months to 24 years and persons aged 25 to 64 years who have medical conditions that put then at higher risk for influenza-related complications. These groups total approximately 159 million persons in the United States. See additional information at: http://www.cdc.gov/h1n1flu/vaccination/public/vaccination_qa_pub.htm.

How will the 2009 H1N1 vaccine be distributed?

The 2009 H1N1 vaccine will be distributed by the CDC's contractor for centralized distribution, McKesson Specialty. The 2009 H1N1 vaccine distribution will be a health department managed process similar to the process for the Vaccines for Children (VFC) Program. The distribution process for 2009 H1N1 vaccine builds on the existing mechanism for shipping vaccine to VFC providers. Vaccine orders will be submitted by Project Area health departments on behalf of vaccine providers. These orders will be transmitted to CDC and will be processed and forwarded to McKesson. McKesson, in turn will ship vaccine directly to the end user. The centralized distribution contract for the VFC program has been supplemented to provide for 2009 H1N1 vaccine distribution and distribution of ancillary supply kits.

What kind of providers can be designated as vaccine recipients?

Providers that have the capability to receive, store and administer vaccine, including, but not limited to provider offices, occupational health clinics, hospitals, local health departments, community vaccinators and pharmacies. There will be a maximum of approximately 90,000 sites to which vaccine can be shipped via centralized distribution. CDC is developing a formula to determine the maximum number of sites within each project area and it will be shared as soon as possible.

More information on 2009 H1N1 vaccine distribution is available at:
http://www.cdc.gov/H1N1flu/vaccination/statelocal/centralized_distribution_qa.htm

What are the high risk conditions that increase the risk of complications from 2009 H1N1 infection?

Approximately 70% of persons hospitalized from 2009 H1N1 influenza have had a recognized high risk condition. These high risk conditions are the same conditions that increase the risk of complications from seasonal influenza infection. They include:

- Children younger than 5 years old. The risk for severe complications from seasonal influenza is highest among children younger than 2 years old
- Adults 65 years of age or older
- Pregnant women
- Persons with the following conditions:

- Chronic pulmonary (including asthma), cardiovascular (except hypertension), renal, hepatic, hematological (including sickle cell disease), neurologic, neuromuscular or metabolic disorders (including diabetes);
- Immunosuppression, including that caused by medications or by HIV;
- Persons younger than 19 years of age who are receiving long-term aspirin therapy, because of an increased risk of Reye syndrome.

There is preliminary data that suggests that people who are morbidly obese (body mass index equal to or greater than 40) and perhaps people who are obese (body mass index of 30 to 39) may be at increased risk of hospitalization and death due to 2009 H1N1 influenza infection.

Who should receive antiviral medication?

Recommendations for the use of antiviral medications may change as data on antiviral effectiveness, spectrum of illness, adverse events from antiviral use and resistance among circulating viruses becomes available. For antiviral treatment of 2009 H1N1 influenza virus infection, either oseltamivir (Tamiflu™) or zanamivir (Relenza™) are recommended. Clinical judgment is an important factor in treatment decisions. Most patients who have had 2009 H1N1 virus infection have had a self-limited respiratory illness similar to typical seasonal influenza. Persons with suspected 2009 H1N1 influenza or seasonal influenza who present with an uncomplicated febrile illness generally DO NOT REQUIRE TREATMENT. However, some groups appear to be at increased risk of influenza-related complications.

1. Treatment is recommended for all hospitalized patients with confirmed, probable or suspected 2009 H1N1 or seasonal influenza
2. Treatment generally is recommended for patients who are at higher risk for influenza-related complications.
3. Treatment should be initiated empirically when the decision is made to treat patients who have illnesses that are clinically compatible with influenza. Treatment should not await laboratory confirmation because laboratory testing can sometimes delay treatment and because a negative rapid test does not rule out influenza.

The benefit of treatment with antiviral drugs is strongest when treatment is started within 48 hours of illness onset. Initiating treatment as soon as possible after illness onset is also thought likely to reduce

the risk of severe outcomes including severe illness or death. The recommended treatment duration is five days, although hospitalized patients may receive a longer course of treatment. Persons who are not at higher risk for complications or do not have severe influenza requiring hospitalization generally do not require antiviral medications for treatment or prophylaxis. However, any suspected influenza patient presenting with warning signs or symptoms (dyspnea, tachypnia, unexplained oxygen desaturation) for lower respiratory tract illness should promptly receive empiric antiviral therapy.

When is prophylactic antiviral therapy indicated for 2009 H1N1 infections?

The infectious period for persons infected with the 2009 H1N1 virus appears to be similar to that observed in studies of seasonal influenza. Infected patients may shed influenza virus and be potentially infectious to others, beginning one day before they develop symptoms to up to 7 days after they become ill. However, the infectious period for influenza is defined as one day before until 24 hours after fever ends. Disappearance of fever must occur without the use of antipyretic drugs such as acetaminophen or ibuprofen, etc.

Post exposure antiviral chemoprophylaxis with either oseltamivir or zanamivir can be considered for the following:

- Persons who are at higher risk for complications of influenza and are a close contact of a person with confirmed, probable or suspected 2009 H1N1 or seasonal influenza during that person’s infectious period.
- Healthcare personnel, public health workers or first responders who have had a recognized, unprotected close contact exposure to a person with confirmed, probable or suspected 2009 H1N1 or seasonal influenza during that person’s infectious period.

Who should not receive antiviral chemoprophylaxis?

Antiviral agents should not be used for post exposure chemoprophylaxis in healthy children or adults based on potential exposure in the community, school, camp or other settings. Chemoprophylaxis generally is not recommended if more than 48 hours have elapsed since the last contact with an infectious person. Chemoprophylaxis is not indicated when contact occurred before or after, but not during, the ill person’s infectious period as defined above. The usual length of chemoprophylaxis is 10 days.

[http://www.cdc.gov/H1N1flu/recommendations.htm]

How do I know if I need emergency care?

If you or a member of your family experience any of the following warning signs, seek emergency medical care.

For children: fast breathing or trouble breathing, bluish or gray skin color, not drinking enough fluids, severe or persistent vomiting, not waking up or not interacting, being so irritable that the child does not want to be held; flu-like symptoms improve but then return with fever and worse cough.

For adults: difficulty breathing or shortness of breath, pain or pressure in chest or abdomen, sudden dizziness, confusion, severe or persistent vomiting, flu-like symptoms improve but then return with fever and worse cough.

What are everyday precautions I can take to protect myself from influenza infections?

- Cover your nose and mouth with a tissue when you cough or sneeze. Throw the tissue in the trash after use.
- 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
- Try to avoid close contact (within 6 feet) 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 medication.) Keep away from others as much as possible to keep from making others sick.

When are facemasks or respirators recommended to be used?

In community and home settings, the use of facemasks and respirators generally is not recommended. However, in certain circumstances (person is at increased risk of severe illness form influenza) they may be considered. The use of N95 respirator or facemasks generally is not recommended for workers in a non-healthcare setting for general work activities. For specific work activities that involve contact with people who have an influenza-like-illness (ILI), such as escorting a person with ILI or interviewing a person with a ILI the following are recommended:

- Workers should try to maintain a distance of 6 feet or more from the person with ILI.
- Workers should keep their interactions with ill persons as brief as possible.
- The ill person should be asked to follow good cough etiquette and hand hygiene and to wear a facemask.
- Workers at increase risk of severe illness from influenza infections and people with ILI.
- Where workers cannot avoid close contact with persons with ILI, some workers may choose to wear a facemask or N95 respirator.

In the occupational healthcare setting, respiratory protection (respirator) is recommended.

[http://www.cdc.gov/h1n1flu/masks.htm]

Where can I find more information on 2009 H1N1 influenza?

Best site for the most current information:

http://www.cdc.gov/H1N1FLU

Vaccine Distribution

http://www.cdc.gov/H1N1flu/vaccination/statelocal/centralized_distribution_qa.htm

Updated Interim **Recommendations for the Use of Antiviral Medication** in the Treatment and Prevention of Influenza for the 2009-2010 Season

http://www.cdc.gov/H1N1flu/recommendations.htm

WHO Guidelines for Pharmacological Management of Pandemic (H1N1) 2009 Influenza and other InfluenzaViruses
www.who.int/csr/disease/swineflu/notes/h1n1_use_antivirals_20090820/en/index.html

National Strategy Plan for Emergency Department Management of Outbreaks of Novel H1N1 Influenza

www.acep.org/workarea/downloadasset.aspx?id=45781&wt.nc_id-h1n1plan

Other sites of interest:

Roche Pharmaceuticals - http://www.roche.com/index.htm

GlaxoSmithKline - http://www.gsk.com/media/pandemic-flu.htm

Sanofi Pasteur - http://pandemic.influenza.com/pandemic/front/index.jsp?siteCode=PAND_CORPORATE

Novartis - http://www.novartis.com/newsroom/swine-flu/

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