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FACT SHEET

2009 H1N1 Flu and HIV/AIDS: What You Need to Know

This fact sheet provides information about the novel 2009 H1N1 influenza with an emphasis on the implications of influenza, including H1N1, for individuals living with HIV/AIDS. It also explores the health consequences when these two pandemics converge. People who are HIV positive, especially those who have low CD4 cell counts or have AIDS, appear to be more vulnerable to complications of influenza and possibly death. More research is needed to determine the course, complications, treatment, and prevention of H1N1 influenza in people with HIV/AIDS.

What is the novel H1N1 flu and how is it different from the seasonal flu?

H1N1 flu is a novel influenza virus first identified in Mexico in March 2009 and reported in the U.S. in April 2009.[1]

Flu commonly refers to illnesses caused by influenza viruses classified as type A, B, or C.[2, 3] Patients suffering from flu exhibit a range of symptoms that vary in degrees of severity and lethality. The 2009 H1N1 flu is caused by the influenza A virus. There are currently two strains of flu circulating in the U.S.: the seasonal flu and H1N1 flu. A third and highly lethal strain of H5N1 (bird) flu is being closely tracked overseas. However, the H1N1 virus that is the dominant flu strain worldwide accounts for up to 70 percent of cases in some countries. In the U.S., more than 22 million Americans have already been infected by the H1N1 virus.[4, 5]

Unlike the seasonal flu, which returns in slightly different forms each year, the novel 2009 H1N1 flu is a specific strain of flu against which most people currently have no immunity. The disease is very contagious, spreading rapidly through communities. In contrast with the seasonal flu, it is affecting a greater number of younger people and can thrive in warmer weather. Although H1N1 appears to be highly infectious, so far it has not been particularly lethal. According to the European Centre for Disease Control and Prevention, millions of people have been infected globally and 11,033 deaths have been reported from the H1N1 virus as of December 15, 2009.[6] However, the numbers are underestimated given limitations in surveillance capabilities in some countries. The U.S. Centers for Disease Control and Prevention (CDC) estimates that since its emergence last spring, the H1N1 flu strain in the U.S. has infected approximately 50 million people (one-sixth of the population), about 200,000 people have been hospitalized, and nearly 10,000 have died,[7] of which more than 540 were children.[8, 9] The number of pediatric deaths reported to the CDC so far this season already exceeds the highest number ever since the CDC began tracking pediatric deaths in 2003–04.[5, 10] In contrast, every year, the seasonal flu kills approximately 36,000 people in the U.S. and as many as 500,000 worldwide, the majority of whom are older people.[10, 11]

Compared to the seasonal flu, the H1N1 virus appears more likely to travel deep into the lungs, where it can cause viral pneumonia. This may lead to severe lung damage and a life-threatening condition known as acute respiratory distress syndrome.[12] While most healthy people recover from the flu without problems, certain population groups are at greater risk for serious complications from the flu. These groups include pregnant women, children under five, and people with underlying medical conditions or with weakened immune systems due to disease or medication, including people who have HIV/AIDS.[13]

What should HIV-positive people know about the novel H1N1 flu?

In general, there is a paucity of data on influenza in persons living with HIV. HIV-positive adults and adolescents do not appear to be at greater risk of acquiring influenza[14, 15] and early

data available from the spring of 2009 suggest that HIV-positive people may be at no greater risk for H1N1 infection either.[16, 17] However, once infected, persons living with HIV, and especially persons with low CD4 cell counts or AIDS, can experience more severe complications of seasonal influenza. Several studies of seasonal influenza have noted higher hospitalization rates,[18, 19] prolonged illness,[20, 21] and increased risk of death.[22] It is therefore possible that HIV-positive adults and adolescents are also at higher risk for complications from infection with the 2009 H1N1 flu virus. For this reason, persons who have HIV/AIDS are among the high-risk groups prioritized for receiving the H1N1 vaccine this season and the seasonal flu vaccine each year.

What is a flu pandemic?

A pandemic is a widespread and prolonged disease outbreak on a global scale. HIV/AIDS is the most serious pandemic of modern times: more than 33 million people are currently infected with HIV and 25 million have died of AIDS since it was first reported in 1981.[23, 24] Last year, 2.7 million people were newly infected with HIV[25] and more than 2 million died from AIDS worldwide.[26]

The novel H1N1 flu is a new pandemic caused by a virus to which humans currently have little or no immunity.[27] On June 11, 2009, in response to the alarmingly rapid spread of the H1N1 virus, the World Health Organization (WHO) raised the pandemic alert level to Phase 6, reflecting widespread human-to-human transmission in communities across all continents of the world.[28] On October 24, 2009, President Obama declared H1N1 flu to be a national emergency, allowing the U.S. Department of Health and Human Services to lift some federal regulations affecting provision of healthcare services, such as those permitting hospitals to set up off-site facilities to increase the number of available beds as well as to protect patients who are not infected from exposure to the virus.[29]

Who is most at risk of infection by the novel H1N1 virus?

The H1N1 flu virus can infect any individual, regardless of age, sex, race, or health status. One of the mysteries of medicine is why some people exposed to a virus develop disease while others do not, and why particular individuals experience severe symptoms and others have only mild illness.

Individuals with chronic medical conditions, including those with compromised immune systems, appear to be more susceptible to the life-threatening complications of the H1N1 virus.[30] However, while concurrent medical conditions such as HIV/AIDS, asthma, or diabetes may increase the risk of serious complications from H1N1 influenza, approximately 25 percent of all of those hospitalized for the flu in the U.S. do not have an underlying disease.[31] The explanation for this phenomenon requires further research, as does the need to elucidate other risk and protective factors. Further studies are needed to determine whether there are genetic differences in some people that allow them to resist H1N1 infection, as compared with others who rapidly develop serious complications. Such research may also lead to novel therapies for prevention and treatment of the disease. Furthermore, studying the convergence of the H1N1 influenza and HIV/AIDS pandemics can provide important information about both viruses.

Data currently suggest that the H1N1 flu disproportionately affects young people under 25 years of age. Relative to the seasonal flu, fewer cases have been reported in individuals 65 years or older, who may have some immunity to this virus.[32] However, a recent study of H1N1 flu in Mexico suggests that while infants as well as youth aged 10 to 19 years were at increased risk of infection, the disease was more severe in babies and people over 60 as compared to other age groups.[33]

Pregnant women are particularly vulnerable to H1N1 flu and are at increased risk for serious complications from H1N1 infection. A woman's immune system is somewhat suppressed during pregnancy, in part so that she does not reject her fetus, and this phenomenon can also make her more vulnerable to acquiring the flu. Moreover, during the third trimester of pregnancy,[34] the fetus pushes up against the thoracic cage, decreasing a woman's lung capacity and thereby increasing her risk of respiratory complications if she contracts the flu. Pregnant women represent nine percent of patients admitted to intensive care units with confirmed 2009 H1N1 influenza in Australia and New Zealand, and six percent of deaths from confirmed 2009 H1N1 infection in the U.S., while in all three countries only about one percent of the general population is pregnant.[35, 36]

What are the symptoms of H1N1 flu?

The most common symptoms of the novel H1N1 flu include fever, cough, sore throat, runny or stuffy nose, body aches (muscle or joint pain), headache, chills and fatigue. Vomiting and diarrhea have been reported more frequently among those infected with the 2009 H1N1 influenza virus than those with seasonal influenza.[37]

The course of the illness can be mild or severe. The incubation period for H1N1 influenza is one to four days and possibly as long as seven days.[38] Most people recover without requiring medical intervention, but severe cases may require hospitalization and can in rare cases result in death.

Children younger than two years of age are particularly vulnerable to the H1N1 virus.[34] Warning signs that a child should receive urgent medical assistance include fast or troubled breathing, bluish skin color, lack of thirst, failure to wake up easily or to interact, irritability, and high fever with a rash.[39]

How does the H1N1 flu virus spread?

Spread of the novel H1N1 virus involves person-to-person contact, most commonly via respiratory droplets from an infected person. Coughing and sneezing are the most frequent modes of transmission, but touching an infected surface or object and then touching one's mouth or nose can also be a source of infection. The H1N1 flu is a respiratory rather than a food-borne disease. Initially, when the disease was termed "swine flu," some people feared it could be transmitted by eating pork or pork products, which is not the case. The U.S. Department of Agriculture continues to remind consumers that meat and poultry products are safe to eat when properly prepared and cooked.[40]

People infected with seasonal or 2009 H1N1 flu virus may be able to infect others from as early as one day before they get sick to seven days after recovering from the H1N1 infection. This period can be even longer in some people, especially children and people with weakened immune systems.[41]

Getting infected with any influenza virus, including 2009 H1N1, normally causes the body to develop immune resistance to that virus so it is unlikely that a person would be infected with the identical influenza virus more than once. However, people who are HIV positive and have a weakened immune system might not develop full immunity after infection and could therefore theoretically become infected with the same influenza virus more than once.[42]

Is there a test for the novel H1N1 flu?

A number of diagnostic tests are available to detect the presence of the H1N1 influenza virus in respiratory specimens, including rapid influenza diagnostic tests, viral cultures, real-time reverse transcriptase polymerase chain reactions, and direct immunofluorescence assays.

These tests differ in their sensitivity and specificity for detecting influenza viruses, commercial availability, processing time, approved clinical setting, and ability to distinguish between different influenza virus types (A versus B) and influenza A subtypes. Although a positive result is likely to indicate influenza, these tests vary in the possibility that they will miss an influenza infection or falsely detect an infection. However, during an influenza outbreak, a positive test is likely to indicate the presence of the flu.

The different types of influenza diagnostic tests are:

- **Rapid influenza diagnostic tests (RIDTs):**
  RIDTs are widely available, commercial diagnostic tests that can detect influenza viruses in less than 30 minutes. Certain RIDTs can be performed outside of the laboratory in outpatient settings (e.g., doctors' offices or health clinics). The likelihood of their missing an influenza infection also varies, as their sensitivity for detecting the 2009 H1N1 ranges from 10 to 70 percent. Therefore, a negative result does not exclude influenza infection.

- **Viral culture:**
  Viral culture is a very sensitive diagnostic test available in some laboratories but may not provide results in sufficient time to help with clinical decision making. However, viral culture is an important source of public health data on influenza immune (antigenic) characteristics and the strain's response to antiviral medications. Viral culture is highly sensitive and specific.

- **Direct immunofluorescence assays (DFAs) and indirect immunofluorescence assays (IFAs):**
  Immunofluorescence (fluorescent antibody staining) is available at many hospital laboratories in the U.S. and can generally yield test results in up to four hours. Sensitivities are generally higher than rapid diagnostic tests, but lower than viral culture or real-time reverse transcriptase polymerase chain reaction. Like RIDTs, DFAs are widely available and have variable sensitivity for detecting 2009 H1N1 virus (range 47–93 percent). DFAs detect and distinguish between influenza A and B viruses but do not distinguish among different influenza A subtypes. When influenza viruses are circulating in a community, a positive DFA test result is likely to indicate influenza virus infection.

- **Real-time reverse transcriptase polymerase chain reaction (rRT-PCR):**
  Nucleic acid amplification tests, including rRT-PCR, are the most sensitive and specific influenza diagnostic tests, but may be available only in special laboratories and health departments. Obtaining test results may take one to several days, and test performance depends on the individual rRT-PCR assay. As with any assay, false negatives can occur. Not all nucleic acid amplification assays can specifically differentiate 2009 H1N1 influenza virus from other influenza

A viruses. If specific testing for 2009 H1N1 influenza virus is required, testing with an rRT-PCR assay specific for 2009 H1N1 influenza or viral culture should be performed. Several rRT-PCR assays have been approved by the FDA under an emergency use authorization to diagnose infection with the 2009 H1N1 influenza virus.[43]

For more information about H1N1 diagnostic tests, visit http://www.cdc.gov/h1n1flu/guidance/diagnostic_tests.htm

What steps should be taken by HIV-positive people who suspect they might have the novel H1N1 flu?

Individuals with HIV/AIDS should consult their healthcare provider immediately to determine whether they need further diagnostic or therapeutic interventions such as antiviral medications. Once a decision is made to use antiviral treatment for influenza, it should be initiated as soon as possible without waiting for influenza test results.[37] People with HIV/AIDS who are on ART should continue taking it.

The CDC recommends that sick individuals remain at home for at least 24 hours after their fever has subsided without taking medications such as acetaminophen and ibuprofen that suppress an elevated temperature. If a visit to the doctor or healthcare facility is required, people suspecting that they are infected with the H1N1 virus should use a face mask or a tissue to cover their noses and mouths while coughing or sneezing. Staff members at these facilities should be alerted so that adequate precautions can be taken to further contain spread of the infection.

HIV-positive persons who have been in close proximity to individuals who have confirmed or suspected influenza should be counseled about the early signs and symptoms of influenza and are advised to immediately contact their healthcare provider for evaluation and possible early treatment if clinical signs develop. Healthcare providers should consider administering antiviral chemoprophylaxis to prevent H1N1 infection in severely immune-compromised people with AIDS as well as HIV-positive pregnant women and young children who have had close contact with someone who has the H1N1 flu.[37] Early treatment of symptoms is preferred to chemoprophylaxis after a suspected exposure in other HIV-positive populations.[37]

HIV-positive individuals should ensure that all of their vaccinations are up to date, including those against seasonal influenza and bacterial pneumonia. The Pneumovax vaccine protects against a bacterial pneumonia that can cause serious health complications for people living with HIV/AIDS.[37] Experts believe bacteria living in the nose and throat get into lung tissue that has been inflamed by fighting the flu virus and cause pneumonia. They may then reach the blood or brain, causing even more dangerous infections. The Pneumovax vaccine is routinely given to people over the age of 65.[44, 45] It is also recommended that all HIV-positive persons receive Pneumovax vaccinations and consider a booster shot five years later.

How is the novel H1N1 flu treated in people who are HIV positive?

Currently, the novel H1N1 flu virus is sensitive to prompt treatment with two antiviral medications, zanamivir (inhaled Relenza) and oseltamivir (oral Tamiflu). These drugs have been shown to reduce the severity of disease caused by H1N1 flu and improve survival rates.[34, 46] The antiviral drugs amantadine and rimantadine have not been found to be effective in the treatment of H1N1 infection.[30] For up-to-date information about treatment, consult cdc.gov/h1n1flu.

Scientists around the world have been tracking the virus carefully for any signs that it has mutated into a more dangerous form. While a variety of mutations have been detected, most do not appear to have affected the virus in any significant way. However, there have been some mutations that make the virus more resistant to antiviral drugs. Confirmed cases of an H1N1 virus strain resistant to the antiviral drug oseltamivir have been reported in the U.S.[47] However, at present, these resistant viruses appear to be self-contained and there is no evidence of widespread or growing resistance.[48]

The FDA has authorized the emergency use of peramivir, a drug that is administered intravenously, for use in certain hospitalized and critically ill patients with 2009 H1N1 influenza who are not responding to other antiviral therapy or who cannot use oral or inhaled medications.[49] Research is under way to test whether cholesterol-lowering drugs called statins can help the body cope with infection after catching the flu by reducing inflammation. This study builds on findings from an analysis of confirmed cases of H1N1 that found that people who took statins were almost 50 percent less likely to die from H1N1 flu.[50]

To date, there have been no reported adverse reactions between flu medications and ART or contraindications for the co-administration of these medications.[37] However, immuno-suppressed patients should be monitored for adverse drug reactions to flu medications.

To report adverse effects from flu medications, call: 1-800-332-1088 or visit http://www.fda.gov/Safety/MedWatch/default.htm.

Can HIV-positive individuals receive the FDA-approved H1N1 vaccines?

A flu vaccine works by stimulating the body's immune system to produce antibodies against the virus. In September 2009, the FDA approved a new H1N1 injectable intramuscular vaccine and a nasal vaccine to prevent infection with this virus.[51] Both vaccines contain the H1N1 virus. However, the H1N1 flu injection is made from a killed influenza virus that is highly purified and broken into small pieces, while the nasal vaccine contains attenuated live virus. Although the dead virus cannot recombine in the body to produce the flu, it works by stimulating the immune system to evoke a protective response.

The CDC recommends that only the injectable vaccine with the killed virus (TIV—Trivalent Inactivated Influenza Vaccine) be administered to people with HIV/AIDS.[52] However, it should be noted that the immune response to this vaccine may be diminished in people with HIV/AIDS.[53, 54, 55] This is because people with suppressed immune systems are less able to generate a strong immune response and as a result do not fully benefit from vaccinations made with killed viruses.

The nasal vaccine is contraindicated for people with HIV/AIDS because it contains an attenuated live virus. This is a weakened version of the virus that has been tamed in the laboratory so that it will not cause illness in most people who have healthy immune systems.

The CDC has identified target groups of approximately 159 million people in the U.S. who are advised to receive the H1N1 vaccine this year.[56] Persons between the ages of 25 and 64 with health conditions associated with higher risk of medical complications from influenza, including HIV infection, are an initial target group for the 2009 H1N1 flu vaccine and should receive the vaccine.[57] Children and young people between the ages of six months and 24 years are another priority group for receiving this vaccine given the higher risk of influenza-related complications in this population. Pregnant women, caregivers, and household contacts of children younger than six months of age, as well as healthcare and emergency medical services personnel, are also priority groups.[58] Once the demand for vaccine among the initial target groups has been met at the local level, programs and providers should offer 2009 monovalent H1N1 influenza vaccine to all persons 25–64 years of age and then to persons age 65 years or older, including HIV-infected adults.[57] Persons age 65 or older, including HIV-infected adults, are not prioritized groups because current studies indicate that the risk for infection among persons in that age cohort is lower than the risk for younger persons.[57] Although initial supplies of vaccine are limited, they are expected to increase sufficiently to vaccinate all persons not in initial target groups.[57]

Each year, experts review the viruses that caused flu the previous season and select three of those viruses to create the following year's seasonal flu shot. This year's seasonal influenza vaccination does not protect against the novel 2009 H1N1 strain. For this reason, the CDC is recommending that people, including those with HIV/AIDS, receive one dose of both the seasonal flu and the H1N1 flu vaccinations, with the exception of children under 10 years of age who are recommended to get two doses of the H1N1 vaccine to generate sufficient immunity against this virus.[59]

Flu shots are being offered in doctors' offices, hospitals, airports, pharmacies, schools, workplaces, shopping malls, and other venues. Despite initial shortages of vaccine in the U.S., currently supplies are being widely distributed. Additionally, because of shortages in the developing world, a pharmaceutical company has pledged to donate 50 million doses of H1N1 vaccine to the WHO for distribution in these countries.[60] Vaccine shortages have underscored the urgent need to enhance the vaccine manufacturing process in the U.S. Currently, the U.S. is in part dependent on vaccine production based in other countries using decades-old technology that involves growing vaccines in chicken eggs, which can take six to nine months. A top priority must be to develop new, safe, and rapid methods of vaccine production using cell-based and other technologies to increase availability of vaccines and strengthen vaccine manufacturing capacity in the U.S.

To find a location for H1N1 flu shots, visit www.Flu.Gov.

Will the H1N1 vaccine contain adjuvants or additives?

None of the seasonal or H1N1 flu vaccines that have been FDA-approved for use in the U.S. contain adjuvants such as alum.[61] Adjuvants, often as simple as an oil and water mixture, boost the body's response to a vaccine, reducing the needed amount of the active ingredient called antigen and thereby increasing the number of vaccine doses available. Adjuvants are widely used in European

flu vaccines as well as in Canada but not in the U.S. Clinical trials by the National Institutes of Health (NIH) are currently under way to test the safety and effectiveness of H1N1 vaccines that contain adjuvants in case it becomes necessary to use adjuvants to increase the number of available vaccines against the 2009 H1N1 influenza or another flu virus with pandemic potential in an emergency situation.[62]

The injectable H1N1 flu vaccines in multi-dose packages contain thimerosal, a preservative containing mercury, which most doctors believe to be safe but has become controversial in recent years over concerns about possible adverse effects on the nervous system. It should be noted that one dose from a multiuse H1N1 vaccine vial contains about 25 micrograms of mercury; in comparison, a tuna fish sandwich contains about 28 micrograms of mercury.[63] People who want to minimize mercury exposure can request a vaccine from a single-dose package, which contains only trace amounts of this substance.

What are the side effects of the H1N1 flu vaccine?

An extensive, preliminary review of adverse effects from the H1N1 flu vaccine indicates that the vaccine is safe, with a side effect profile that is similar to seasonal flu vaccine, which has an excellent safety record. The vaccine has been in widespread use for only a few months so rare side effects or delayed problems might not show up until later after many more people are vaccinated. Over the years, hundreds of millions of Americans have received seasonal flu vaccines. Most side effects following flu vaccinations are mild. The CDC and FDA will be closely monitoring for any indications that the vaccine is causing unexpected adverse events and will work with state and local health officials to investigate any unusual occurrences.

Mild problems that may be experienced as a result of the H1N1 vaccine include soreness, redness, or swelling where the shot was given, headache, muscle aches, fever, and nausea. If these problems occur, they usually begin soon after the shot and last between one and two days.

As of December 4, 2009, there were 4,890 adverse event reports following H1N1 vaccinations, of which 277 were considered serious, a category that includes death, life-threatening illness, and significant disability. Of these, there were 19 reports of death. It should be noted that the death rate is similar to what is reported after seasonal flu vaccinations and some are strictly coincidental. So far, 13 cases of Guillain-Barré Syndrome (GBS) have been reported in the U.S. In the U.S., about 80–160 cases of GBS are expected to occur each week regardless of vaccination. To date, there is no sign that the currently available H1N1 vaccines increase the risk for GBS. This disorder occurs when the body for unknown reasons attacks its own nerve cells, causing temporary or permanent paralysis.

The deaths that have occurred are under review by the CDC and the FDA, via the Vaccine Adverse Event Reporting System (VAERS), which will be closely monitoring where the reported events occur. There does not appear to be a common cause or pattern (such as similarities in age, gender, geographic location, illness surrounding death, or underlying medical conditions) to suggest that they were associated with the vaccine. Officials routinely expect a few serious, even fatal reactions when millions of people receive flu shots, usually because of undiagnosed allergies to the eggs in which the vaccine is grown. Life-threatening allergic reactions to vaccines are very rare but if they do occur it is usually within a few minutes to a few hours after the injection. Signs of a serious allergic reaction may include difficulty breathing, hoarseness or wheezing, swelling around the eyes or lips, hives, paleness, weakness, a fast heart beat, or dizziness.[64]

Only limited information is available about the safety and effectiveness of the H1N1 vaccine in HIV-positive individuals. The adverse event rate from the H1N1 vaccine so far is very similar to what is reported with the seasonal flu vaccine.[65] The NIH has recently launched several clinical trials to determine the H1N1 vaccine's safety and effectiveness in people who are HIV positive.[66] Research is under way to evaluate what dose of the 2009 H1N1 influenza vaccine can safely elicit a protective immune response in HIV-positive pregnant women, children, youth, and adults. These studies are particularly important because HIV infection, pregnancy, and being under 10 years of age appear to elicit a weaker immune response to the standard 15-microgram dose of H1N1 influenza vaccine that is given to the general population. Clinical trials are evaluating whether higher doses of the 2009 H1N1 influenza vaccine are needed to safely elicit a protective immune response in these population groups. The studies build on findings from research on seasonal influenza vaccine and vaccines for other diseases that suggest higher doses of vaccine tend to elicit stronger immune responses (including in those who are HIV positive) by increasing the concentration of protective antibodies in the bloodstream.[37]

How will the H1N1 flu vaccine be monitored for safety and effectiveness?

Currently, the safety of all vaccines licensed in the U.S. is tracked through two monitoring networks. One is VAERS, to which healthcare providers, vaccine manufacturers, and the general public can submit information about side effects. Anyone can file a report to this system. The second system is the Vaccine Safety Datalink, which has information on more than 400,000 people who were vaccinated in managed care organizations. These large, linked databases from health insurance plans are being matched with state immunization registries to conduct near real-time surveillance of health outcomes following vaccination. Reporting capacity and staffing have also been increased more than 10-fold and surveillance systems have been expanded to follow up on any potential cases of GBS. Additionally, an independent group of experts has been assembled to evaluate the safety and effectiveness of the H1N1 vaccines.[67]

For more information about current clinical trials of the H1N1 vaccine in people with HIV/AIDS, visit: http://clinicaltrials.gov.

What steps can be taken by people with HIV/AIDS to help prevent H1N1 flu and its impact?

HIV-positive persons should continue to take all medications prescribed by their care provider, especially ART. They should maintain a healthy lifestyle by eating right, getting adequate sleep and exercise, and reducing stress levels as much as possible. Keeping the immune system strong and staying healthy reduces the risk of influenza and other infections, and helps to fight off the flu if a person becomes infected. People with pre-existing medical conditions, including HIV/AIDS, should get vaccinated to prevent both H1N1 and seasonal flu.

Other public health measures to reduce the risk of contracting the H1N1 virus and to prevent its spread include:

- Washing hands with soap and water on a regular basis, especially after coughing or sneezing. If soap and water are not available, use an alcohol-based sanitizer. These sanitizers can also be used on objects and surfaces that are typically shared.
- Coughing or sneezing into the crook of the arm or a tissue and then discarding the tissue.
- Avoiding large crowds of people and staying away from individuals who might be sick.
- Consulting a healthcare provider immediately to determine if a diagnostic test, treatment, hospitalization, or further advice is required regarding the illness, especially if there are unusual symptoms including high fever, shortness of breath, or wheezing.
- Obtaining and wearing a face mask if you are sick, especially if you anticipate contact with others such as on mass transit or when you visit a healthcare provider, clinic, or hospital.
- Starting antiviral medications within 48 hours of the onset of symptoms. People with HIV/AIDS should not delay treatment for the H1N1 flu. Waiting for laboratory confirmation of influenza to begin treatment with antiviral drugs is not necessary.[37]

Summary

Two major pandemics of modern times, HIV/AIDS and H1N1 influenza, have infected millions of people worldwide. Yet there is currently a paucity of data concerning the health implications of H1N1 influenza infection in people with HIV/AIDS. The limited data suggest that HIV infection does not appear to significantly increase risk of influenza acquisition. However, HIV infection may increase the risk of more severe influenza illness and death among people with low CD4 cell counts.

Prevention is the cornerstone of pandemic preparedness. Research is under way to determine the dosage of H1N1 vaccine that will be most effective to prevent H1N1 infection in HIV-positive infants, youth, pregnant women, and other adults. Additionally, given the initial shortage of H1N1 vaccine, it has become evident that decades-old technology should be enhanced with new methods of vaccine production, such as cell-based technology. With the threat of pandemics and other emerging diseases, the rapid manufacturing of safe and effective vaccines is essential. Furthermore, the development of new rapid and highly sensitive diagnostic tests is needed for clinical and community-based settings.

For now, people with HIV/AIDS should continue taking ART as prescribed and get both seasonal and H1N1 flu shots. More research is needed on the convergence of these two pandemics as well as the implications for public policy in both the industrialized and the developing world.

For more information about H1N1 flu and HIV/AIDS:

Telephone: 800-CDC-INFO (800-232-4636)
888-232-6348 (TTY)
Website: www.Flu.Gov

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