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PUBLIC HEALTH FACT SHEET

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INFLUENZA: Pigs, People and Public Health

Summary: Swine influenza viruses were first isolated in the United States in 1930. Since that time, they have become an economically important cause of respiratory disease in pigs throughout the world, and a human public health risk. The clinical signs/symptoms of influenza in pigs and people are remarkably similar, with fever, lethargy, lack of appetite and coughing prominent in both species. Furthermore, influenza viruses can be directly transmitted from pigs to people as "zoonotic" disease agents, and vice versa, from people to pigs. These interspecies infections are most likely to occur when people are in close proximity to pigs, such as in swine production barns, livestock exhibits at fairs, and slaughterhouses. Finally, because of their unique susceptibility to infection with influenza viruses of both mammalian and avian species, pigs can serve as intermediaries in the transmission of influenza viruses from birds to people. The birds of greatest concern are wild waterfowl, because these species provide an immense natural reservoir of influenza viruses. Replication of avian influenza viruses in pigs may allow them to adapt to and be able to efficiently infect mammals, and ultimately be transmitted to people. In addition, pigs can serve as hosts in which two (or more) influenza viruses can undergo "genetic reassortment." This is a process in which influenza viruses exchange genes during replication. The influenza viruses responsible for the worldwide 1957 and 1968 "pandemics" of human influenza were reassortant viruses with genes from both human and avian influenza viruses. Veterinarians can help pig producers design farms and develop management and personnel policies to minimize interspecies transmission of influenza viruses, thereby contributing to the health of both the swine and human populations.

Background: Influenza viruses exist in three "types," designated A, B and C. Of these, only influenza A viruses are significant concerns for the health of pigs. However, there are a large number of different "subtypes" of influenza A viruses. These subtypes are defined by the hemagglutinin (H or HA) and neuraminidase (N or NA) proteins of the virus. The HA is also the protein against which the host directs antibodies that can neutralize the virus. Of practical significance, there is no cross-protective immunity mediated by antibodies from one HA subtype to another.

There are 15 different subtypes of hemagglutinin and 9 different subtypes of neuraminidase among influenza A viruses. Subtypes are distinguished by differences in their genetic sequences, which translate into differences in their antigenic structure. The combination of HA and NA subtypes present in a virus are depicted by H and N designations, such as H1N1, H3N2, and so on. In the course of history, relatively few hemagglutinin and neuraminidase combinations have consistently circulated among pigs or people (predominantly H1N1, H1N2 and H3N2 in pigs, and H1N1, H1N2, H2N2 and H3N2 in people). In contrast, virtually all of the possible influenza A virus subtypes exist among wild waterfowl. In these birds, influenza viruses infect the gastrointestinal tract rather than the respiratory tract, which is the target organ in pigs, people, horses and other mammalian hosts of influenza viruses. The infections generally do not make the birds sick. In waterfowl, the viruses are shed in the bird's feces, and ultimately into the water of lakes and ponds that the birds visit during migrations, but also potentially onto the ground of barnyards and farm fields.

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Influenza viruses carry their genes on 8 separate pieces ("segments") of nucleic acid (RNA), rather than on one long single molecule. This structural feature has very important implications for virus evolution, because if two (or more) influenza viruses simultaneously infect cells in the same individual, then during replication, these viruses can exchange RNA segments with one another, thereby creating viruses with entirely new combinations of genes. This process of reassortment was the basis for the appearance of the pandemic viruses of 1957 (the "Asian" flu) and 1968 (the "Hong Kong" flu) in the human population. These pandemic viruses were responsible for millions of cases of human illness and tens of thousands of human deaths. In both cases, influenza viruses from waterfowl reassorted with the previously circulating human influenza viruses to create viruses with different hemagglutinin subtypes (from H1 to H2 in 1957 and from H2 to H3 in 1968). It is the change to a hemagglutinin subtype against which the population has no immunity ("antigenic shift") that causes these periodic global disease outbreaks of human disease.

How does this process of reassortment occur? In general, there is a functional barrier to infection of people with avian influenza viruses, and vice versa (the H5N1 infections of people in Hong Kong and China in 1997 and 2003 and the H7N7 infections of poultry workers and veterinarians in The Netherlands in 2003 being exceptions). This barrier is based, in part, on the fact that avian influenza viruses preferentially use receptors expressed on bird cells, and human viruses preferentially use receptors expressed in the human respiratory tract. Pigs, however, express both avian- and human-type receptors and can be infected with avian, human and swine influenza viruses. As such, they can serve as hosts in which avian viruses adapt to replication in mammals. For example, in 1979, an avian H1N1 virus of waterfowl-origin entered the pig population of northern Europe and soon became the dominant cause of influenza among European pigs. Subsequently, these avian H1N1 viruses were also isolated from people in Europe. Additionally, pigs are hypothesized to serve as the "mixing vessels" in which reassortment between avian and human influenza viruses can take place. The focus of such reassortment has historically been in Southeast Asia, the proposed "influenza epicenter," because agricultural practices in this region brought pigs, people and ducks into close contact with one another. However, it is now clear that influenza virus reassortment in pigs can occur anywhere in the world, as evidenced by reassortant viruses isolated from pigs in Europe and, most recently, in the United States. The later include human/swine/avian virus reassortant H3N2 viruses that have spread widely within the American pig population since their emergence in 1998, as well as "second generation" reassortant H1N2 and H1N1 viruses derived by genetic mixing between the reassortant H3N2 and classical swine H1N1 viruses. The H1N2 viruses have also been isolated subsequently from wild waterfowl and domestic turkeys. The isolation of these viruses from wild ducks was somewhat unexpected, but interspecies transmission of influenza viruses from pigs to domestic turkeys has been recognized previously on numerous occasions. In fact, turkey producers sometimes vaccinate their birds against swine virus infections. In contrast, transmission of influenza viruses between pigs and domestic chickens and other fowl, and vice versa, is very rarely reported.

Reducing interspecies transmission of influenza viruses: It is in the best interest of both human public health and animal health that transmission of influenza viruses from pigs to people, from people to pigs, from birds to pigs and from pigs to birds be minimized.

Interspecies transmission among pigs and people: About two dozen examples of zoonotic transmission of swine influenza viruses from pigs to people have been documented in the medical literature. Many more cases are likely to occur among swine workers. However, these will generally go unrecognized as anything but typical human influenza because the seasonal patterns of human and swine influenza largely overlap. A recent study by the author and colleagues from the Centers for Disease Control and Prevention sought to better understand the risks of zoonotic swine flu infections in the United States. In studying swine farmers, employees and their family members compared to an urban population from Milwaukee, Wisconsin, the factors most strongly associated with seropositivity to swine viruses were being a swine farm owner and/or a member of a farm owner's family, living on a swine farm, or entering a swine barn at least 4 days per week. (See suggested reading: C.W. Olsen, et al., Serologic evidence of H1 swine influenza virus infection in swine farm residents and employees, Emerg. Infect. Dis. 8 (2002) 814-819). Conversely, the impact of transmission of influenza viruses from people to pigs should not be under-estimated. The reassortant H3N2, H1N2 and H1N1 viruses currently circulating widely and causing disease throughout the swine population of the United States all contain human influenza virus genes.

The following steps are potentially useful to reduce transmission of influenza viruses between pigs and people:

- **Influenza virus vaccination of pigs** - While the swine influenza virus vaccines used today may not induce sterilizing immunity nor completely eliminate clinical signs of infection, vaccination of pigs can reduce the levels of virus shed by infected animals, and thus reduce the potential for human exposure and zoonotic infections.

- **Influenza virus vaccination of swine farm workers** - The vaccines produced on a yearly basis for the human population contain only human, not swine, strains of influenza viruses. Nonetheless, these vaccines are likely to provide some level of protection against infection with swine viruses of the same hemagglutinin subtype. Conversely, vaccination of farm workers will reduce the amounts of viruses they shed if infected during human influenza outbreaks, and thereby limit the potential for human influenza virus infection of their pigs.

- **Sick-leave policies** - To further reduce the chances for infection of pigs with human influenza viruses, the farm owner should provide sick-leave policies for employees that encourage them to remain away from work when they are suffering from acute respiratory infections. People typically shed influenza viruses for approximately 3-7 days, with the period of peak shedding correlated with the time of most severe clinical illness.

- **Ventilation** - Ventilation systems in containment production facilities should be designed to minimize re-circulation of air within animal housing rooms. This is important to reduce the exposure of pigs to viruses from other pigs, to reduce their exposure to human influenza viruses, and conversely, to reduce exposure of workers to swine influenza viruses.

- **Basic hygiene practices** - Workers should change clothes prior to leaving swine barns for office facilities, food breaks or their homes. In addition, hand-to-face contact should be minimized and hand-washing stations should be available throughout the animal housing areas. Influenza viruses spread not just by inhalation of aerosolized virus, but also by eye and nose contact with droplets of respiratory secretions.

Interspecies transmission among pigs and birds: The global reservoir of influenza viruses in waterfowl, the examples of infection of pigs with waterfowl-origin influenza viruses, the risks for reassortment of avian viruses with swine and/or human influenza viruses in pigs, and the risk for transmission of influenza viruses from pigs to domestic turkeys all indicate that contact between pigs and both wild and domestic fowl should be minimized. The following factors are potentially useful to reduce transmission of influenza viruses between birds and pigs:

- **Bird-proofing** - All doorways, windows and air-flow vents in swine housing units should be adequately sealed or screened to prevent entrance of birds. Although small birds such as sparrows, swallows, finches, wrens etc. are not thought to be important in the overall ecology of influenza viruses, they may carry influenza viruses from waterfowl feces into barns on their bodies.

- **Water treatment** - Do not use untreated surface water (because of waterfowl fecal contamination with influenza viruses) as either drinking water or water for cleaning in swine facilities. Likewise, it may be prudent to attempt to minimize waterfowl use of farm lagoons.

- **Separation of pig and bird production** - Do not raise pigs and domestic fowl on the same premises.

- **Feed security** - Keep pig feed in closed containers to prevent contamination with feces from over-flying waterfowl.

- **Worker biosecurity** - Provide boots for workers that are worn only within the pig housing units, thus eliminating the chance to carry bird feces into housing units from outdoors.

These recommendations clearly cannot apply to production units in which pigs are raised outdoors. Outdoor housing places pigs at increased risk for infection with avian influenza viruses.

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Preventing the Spread of Influenza (the Flu) in Child Care Settings: Guidance for Administrators, Care Providers, and Other Staff

Symptoms

Symptoms of flu include fever (usually high), headache, extreme tiredness, dry cough, sore throat, runny or stuffy nose, and muscle aches. Occasionally, nausea, vomiting, and diarrhea also can occur, but are much more common in children than adults.

Spread of the Flu

Flu viruses are thought to spread mainly from person to person through coughing or sneezing of people with influenza. Sometimes people may become infected by touching something with flu viruses on it and then touching their mouth or nose. People with influenza can potentially infect others beginning 1 day before symptoms develop and up to 5 days after becoming sick. That means that you may be able to pass on the flu to someone else before you know you are sick, as well as while you are sick.

Preventing Spread of the Flu in Child Care Settings

Yearly flu vaccination is the first and most important step in protecting against this serious disease. Two kinds of flu vaccine are available in the United States:

- **The "flu shot"** — an inactivated vaccine (containing killed virus) that is given with a needle, usually in the arm. The flu shot is approved for use in people older than 6 months, including healthy people and people with chronic medical conditions (such as asthma, diabetes, or heart disease). **The nasal-spray flu vaccine** — a vaccine made with live, weakened flu viruses that do not cause the flu (sometimes called LAIV for "live attenuated influenza vaccine" or FluMist®). LAIV (FluMist®) is approved for use in healthy* people 2-49 years of age who are not pregnant.

Remind children and care providers to wash their hands or use alcohol-based hand cleaners, and make sure that supplies are available to prevent the spread of germs.

- Encourage care providers and children to use soap and water to wash hands when hands are visibly soiled, or an alcohol-based hand cleaner when soap and water are not available and hands are not visibly soiled.
- Encourage care providers to wash their hands to the extent possible between contacts with infants and children, such as before meals or feedings, after wiping the child's nose or mouth, after touching objects such as tissues or surfaces soiled with saliva or nose drainage, after diaper changes, and after assisting a child with toileting.

- Encourage care providers to wash the hands of infants and toddlers when the hands become soiled.
- Encourage children to wash hands when their hands have become soiled. Teach children to wash hands for 15-20 seconds (long enough for children to sing the "Happy Birthday" song twice).
- Oversee the use of alcohol-based hand cleaner by children and avoid using these on the sensitive skin of infants and toddlers.
- Rub hands thoroughly until the alcohol has dried, when using alcohol-based hand cleaner.
- Keep alcohol-based hand cleaner out of the reach of children to prevent unsupervised use.
- Ensure that sink locations and restrooms are stocked with soap, paper towels or working hand dryers.
- Ensure that each child care room and diaper changing area is supplied with alcohol-based hand cleaner when sinks for washing hands are not readily accessible. Alcohol-based hand cleaner are not recommended when hands are visibly soiled.

Keep the child care environment clean and make sure that supplies are available.

- Clean frequently touched surfaces, toys, and commonly shared items at least daily and when visibly soiled.
- Use an Environmental Protection Agency (EPA)-registered household disinfectant labeled for activity against bacteria and viruses, an EPA-registered hospital disinfectant, or EPA-registered chlorine bleach/hypochlorite solution. Always follow label instructions when using any EPA-registered disinfectant. If EPA-registered chlorine bleach is not available and a generic (i.e., store brand) chlorine bleach is used, mix ¼ cup chlorine bleach with 1 gallon of cool water.
- Keep disinfectants out of the reach of children.

Remind children and care providers to cover their noses and mouths when sneezing or coughing.

- Advise children and care providers to cover their noses and mouths with a tissue when sneezing or coughing, and to put their used tissue in a waste basket.
- Make sure that tissues are available in all nurseries, child care rooms, and common areas such as reading rooms, classrooms, and rooms where meals are provided.
- Encourage care providers and children to wash their hands or use an alcohol-based hand rub as soon as possible, if they have sneezed or coughed on their hands.

Observe all children for symptoms of respiratory illness

Observe closely all infants and children for symptoms of respiratory illness. Notify the parent if a child develops a fever (100°F. or higher under the arm, 101°F. orally, or 102°F. rectally) or chills, cough, sore throat, headache, or muscle aches. For children 4 months or younger, the lower rectal temperature of 101°F or under the arm of 100°F is considered a fever threshold. Send the child home, if possible, and advise the parent to contact the child's doctor.

- Infants and young children can become quite ill with influenza very quickly, and might require urgent medical attention and possibly hospitalization. If a child has difficulty breathing, is lethargic, or appears to be worsening rapidly, consider calling a physician or 911 in addition to notifying a parent.

Encourage parents of sick children to keep their children home. Encourage sick care providers to stay home.

- Encourage parents of sick children to keep the children home and away from the child care setting until the children have been without fever for 24 hours, to prevent spreading illness to others. Similarly, encourage sick care providers to stay home.

Consult your local health department when increases in respiratory illness occur in the child care setting.

- Consult with health department for recommendations to prevent the spread of respiratory illness.

Resources **www.cdc.gov www.stclaircounty.org**

* "Healthy" indicates persons who do not have an underlying medical condition that predisposes them to influenza complications.

Preventing the Flu: Good Health Habits Can Help Stop Germs

Fact Sheet

The **single best way to prevent seasonal flu is to get vaccinated** each year, but good health habits like covering your cough and washing your hands often can help stop the spread of germs and prevent respiratory illnesses like the flu. There also are **flu antiviral drugs** that can be used to treat and prevent the flu.

1.Avoid close contact.

Avoid close contact with people who are sick. When you are sick, keep your distance from others to protect them from getting sick too.

2.Stay home when you are sick.

If possible, stay home from work, school, and errands when you are sick. You will help prevent others from catching your illness.

3.Cover your mouth and nose.

Cover your mouth and nose with a tissue when coughing or sneezing. It may prevent those around you from getting sick.

4.Clean your hands.

Washing your hands often will help protect you from germs.

5.Avoid touching your eyes, nose or mouth.

Germs are often spread when a person touches something that is contaminated with germs and then touches his or her eyes, nose, or mouth.

6.Practice other good health habits.

Get plenty of sleep, be physically active, manage your stress, drink plenty of fluids, and eat nutritious food.

Websites: www.stclaircounty.org/health www.cdc.gov.swineflu

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QUESTIONS & ANSWERS

Swine Influenza and You

What is swine flu?
Swine Influenza (swine flu) is a respiratory disease of pigs caused by type A influenza viruses that causes regular outbreaks in pigs. People do not normally get swine flu, but human infections can and do happen. Swine flu viruses have been reported to spread from person-to-person, but in the past, this transmission was limited and not sustained beyond three people.

Are there human infections with swine flu in the U.S.?
In late March and early April 2009, cases of human infection with swine influenza A (H1N1) viruses were first reported in Southern California and near San Antonio, Texas. Other U.S. states have reported cases of swine flu infection in humans and cases have been reported internationally as well. An updated case count of confirmed swine flu infections in the United States is kept at http://www.cdc.gov/swineflu/investigation.htm CDC and local and state health agencies are working together to investigate this situation.

Is this swine flu virus contagious?
CDC has determined that this swine influenza A (H1N1) virus is contagious and is spreading from human to human. However, at this time, it not known how easily the virus spreads between people.

What are the signs and symptoms of swine flu in people?
The symptoms of swine flu in people are similar to the symptoms of regular human flu and include fever, cough, sore throat, body aches, headache, chills and fatigue. Some people have reported diarrhea and vomiting associated with swine flu. In the past, severe illness (pneumonia and respiratory failure) and deaths have been reported with swine flu infection in people. Like seasonal flu, swine flu may cause a worsening of underlying chronic medical conditions.

How does swine flu spread?
Spread of this swine influenza A (H1N1) virus is thought to be happening in the same way that seasonal flu spreads. Flu viruses are spread mainly from person to person through coughing or sneezing of people with influenza. Sometimes people may become infected by touching something with flu viruses on it and then touching their mouth or nose.

How can someone with the flu infect someone else?
Infected people may be able to infect others beginning 1 day before symptoms develop and up to 7 or more days after becoming sick. That means that you may be able to pass on the flu to someone else before you know you are sick, as well as while you are sick.

What should I do to keep from getting the flu?
First and most important: wash your hands. Try to stay in good general health. Get plenty of sleep, be physically active, manage your stress, drink plenty of fluids, and eat nutritious food. Try not touch surfaces that may be contaminated with the flu virus. Avoid close contact with people who are sick.

Are there medicines to treat swine flu?
Yes. CDC recommends the use of oseltamivir or zanamivir for the treatment and/or prevention of infection with these swine influenza viruses. Antiviral drugs are prescription medicines (pills, liquid or an inhaler) 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. For treatment, antiviral drugs work best if started soon after getting sick (within 2 days of symptoms).

How long can an infected person spread swine flu to others?
People with swine influenza virus infection should be considered potentially contagious as long as they are symptomatic and possible for up to 7 days following illness onset. Children, especially younger children, might potentially be contagious for longer periods.

What surfaces are most likely to be sources of contamination?
Germs can be spread when a person touches something that is contaminated with germs and then touches his or her eyes, nose, or mouth. Droplets from a cough or sneeze of an infected person move through the air. Germs can be spread when a person touches respiratory droplets from another person on a surface like a desk and then touches their own eyes, mouth or nose before washing their hands.

How long can viruses live outside the body?
We know that some viruses and bacteria can live 2 hours or longer on surfaces like cafeteria tables, doorknobs, and desks. Frequent handwashing will help you reduce the chance of getting contamination from these common surfaces.

What can I do to protect myself from getting sick?
There is no vaccine available right now to protect against swine flu. There are everyday actions that can help prevent the spread of germs that cause respiratory illnesses like influenza. 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 get sick with influenza, CDC recommends that you stay home from work or school and limit contact with others to keep from infecting them.

What is the best way to keep from spreading the virus through coughing or sneezing?

If you are sick, limit your contact with other people as much as possible. Do not go to work or school if ill. Cover your mouth and nose with a tissue when coughing or sneezing. It may prevent those around you from getting sick. Put your used tissue in the waste basket. Cover your cough or sneeze if you do not have a tissue. Then, clean your hands, and do so every time you cough or sneeze.

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What is the best technique for washing my hands to avoid getting the flu?
Washing your hands often will help protect you from germs. Wash with soap and water. or clean with alcohol-based hand cleaner. we recommend that when you wash your hands -- with soap and warm water -- that you wash for 15 to 20 seconds. When soap and water are not available, alcohol-based disposable hand wipes or gel sanitizers may be used. You can find them in most supermarkets and drugstores. If using gel, rub your hands until the gel is dry. The gel doesn't need water to work; the alcohol in it kills the germs on your hands.

What should I do if I get sick?
If you live in areas where swine influenza cases have been identified and become ill with influenza-like symptoms, including fever, body aches, runny nose, sore throat, nausea, or vomiting or diarrhea, you may want to contact their health care provider, particularly if you are worried about your symptoms. Your health care provider will determine whether influenza testing or treatment is needed.

If you are sick, you should stay home and avoid contact with other people as much as possible to keep from spreading your illness to others.

If you become ill and experience any of the following warning signs, seek emergency medical care.

In children emergency warning signs that need urgent medical attention include:

- Fast breathing or trouble breathing
- Bluish skin color
- Not drinking enough fluids
- 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
- Fever with a rash

In adults, emergency warning signs that need urgent medical attention include:

- Difficulty breathing or shortness of breath
- Pain or pressure in the chest or abdomen
- Sudden dizziness
- Confusion
- Severe or persistent vomiting

How serious is swine flu infection?
Like seasonal flu, swine flu in humans can vary in severity from mild to severe. Between 2005 until January 2009, 12 human cases of swine flu were detected in the U.S. with no deaths occurring. However, swine flu infection can be serious. In September 1988, a previously healthy 32-year-old pregnant woman in Wisconsin was hospitalized for pneumonia after being infected with swine flu and died 8 days later. A swine flu outbreak in Fort Dix, New Jersey occurred in 1976 that caused more than 200 cases with serious illness in several people and one death.

Can I get swine influenza from eating or preparing pork?
No. Swine influenza viruses are not spread by food. You cannot get swine influenza from eating pork or pork products. Eating properly handled and cooked pork products is safe.

Websites: www.stclaircounty.org/health
www.cdc.gov/swineflu

Source: Centers for Disease Control and Prevention 4/26/09

Antiviral Drugs and Swine Influenza

Antiviral Drugs

Antiviral drugs are prescription medicines (pills, liquid or an inhaler) with activity against influenza viruses, including swine influenza viruses. Antiviral drugs can be used to treat swine flu or to prevent infection with swine flu viruses. These medications must be prescribed by a health care professional. Influenza antiviral drugs only work against influenza viruses -- they will not help treat or prevent symptoms caused by infection from other viruses that can cause symptoms similar to the flu.

There are four influenza antiviral drugs approved for use in the United States (oseltamivir, zanamivir, amantadine and rimantadine). The swine influenza A (H1N1) viruses that have been detected in humans in the United States and Mexico are resistant to amantadine and rimantadine so these drugs will not work against these swine influenza viruses. Laboratory testing on these swine influenza A (H1N1) viruses so far indicate that they are susceptible (sensitive) to oseltamivir and zanamivir.

Benefits of Antiviral Drugs

Treatment: If you get sick, antiviral drugs can make your illness milder and make you feel better faster. They may also prevent serious influenza complications. For treatment, antiviral drugs work best if started as soon after getting sick as possible, and might not work if started more than 48 hours after illness starts.

Prevention: Influenza antiviral drugs also can be used to prevent influenza when they are given to a person who is not ill, but who has been or may be near a person with swine influenza. When used to prevent the flu, antiviral drugs are about 70% to 90% effective. When used for prevention, the number of days that they should be used will vary depending on a person's particular situation.

CDC Recommendation

CDC recommends the use of oseltamivir or zanamivir for the treatment and/or prevention of infection with swine influenza viruses.

- Oseltamivir (brand name Tamiflu ®) is approved to both treat and prevent influenza A and B virus infection in people one year of age and older.
- Zanamivir (brand name Relenza ®) is approved to treat influenza A and B virus infection in people 7 years and older and to prevent influenza A and B virus infection in people 5 years and older.

Recommendations for using antiviral drugs for treatment or prevention of swine influenza will change as we learn more about this new virus. Clinicians should consider treating any person with confirmed or suspected swine influenza with an antiviral drug. Visit: http://www.cdc.gov/swineflu/recommendations.htm for specific recommendations.

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