



Reports in the media have sounded the alarm that a strain of bird flu currently circulating among flocks of birds in Southeast Asia could signal the start of the next influenza pandemic. Some reports have claimed that as many as 50 million to 100 million people might die as a consequence.

Q. What is a pandemic?

A. A pandemic is a worldwide epidemic. Every year in the United States and throughout the world, influenza viruses cause epidemics. However, because many people have some immunity, yearly epidemics don't infect everyone.

The strains of influenza virus that cause pandemics are different than those that cause epidemics. Virtually no one in the world is immune to pandemic viruses. For this reason, pandemic strains of influenza sweep across the world unchecked. Typically, many more people become ill and die during pandemics than during yearly epidemics.

Q. How often do influenza pandemics occur?

A. On average, influenza pandemics occur about three times every century. During the past 120 years, influenza pandemics occurred five times: in 1889, 1900, 1918, 1957 and 1968. Some pandemics are more damaging than others. The pandemics of 1957 and 1968 killed 4 million and 6 million people, respectively. But the pandemic of 1918 was even more devastating — a virus known as Spanish flu killed between 20 million and 50 million people.

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Q. What is the “bird flu” that everyone’s talking about?

A. Bird flu is a strain of influenza that is killing large numbers of poultry in Southeast Asia. In 1997, public-health officials detected a strain of influenza in Southeast Asia that was lethal for poultry such as chickens, ducks, turkeys and quail; the virus killed hundreds of millions of birds. People are concerned about bird flu because before 1997, it had never killed people. Because virtually no one in the world is immune to this virus, it has the potential to cause an influenza pandemic.

Q. What is the likelihood that bird flu will cause the next influenza pandemic?

A. Some features of the bird flu are concerning and others are reassuring. The bird flu currently circulating in Southeast Asia is very contagious to birds; hundreds of millions of birds have been infected. And there is now evidence that birds infected with bird flu are showing up in areas outside of Southeast Asia, such as Greece and Turkey. Also, the virus has spread to mammals such as pigs, tigers and cats. Finally, bird flu has also spread to people — at least 200 people have been infected since 1997. Worse, when the virus infects people, it often kills them. About 50 percent of people infected with bird flu have died.

On the other hand, it is still uncommon for humans to contract bird flu; hundreds of millions of birds have been infected, but only about 200 people have been infected with bird flu. And, the yearly incidence of people infected with bird flu since 1997 does not appear to be increasing. Further, people have caught bird flu from infected birds, not from other people. A pandemic will not occur until people infected with the virus are highly contagious to other people. This hasn't happened yet and it may not happen.

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Pandemic Flu: What you should know

Q. If the bird flu doesn't cause a pandemic, can I feel reassured that the threat of a pandemic is over?

A. No. There will be another pandemic of influenza. If it isn't the bird flu, it will be another strain of influenza virus. Historically, pandemics have occurred about three times every century; there is no reason to believe that this century will be spared.

Q. What can I do to protect myself during a pandemic?

A. The best way to be protected against influenza is to get an influenza vaccine. To prevent the next influenza pandemic, the influenza vaccine will have to contain the strain of influenza virus that is causing the pandemic. This means an effective vaccine can't be made until a pandemic begins.

Events that occurred during the 1957 pandemic are instructive. In April 1957, a strain of influenza (later called Asian flu) infected 250,000 people in Hong Kong. A researcher in the United States named Maurice Hilleman predicted that the Hong Kong outbreak signaled the start of the next pandemic. During the next five months, he persuaded six U.S.-based pharmaceutical companies to make 40 million doses of influenza vaccine against the strain of virus circulating in Hong Kong. As predicted, Asian flu entered the United States in September 1957; 20 million people were infected and 70,000 died. But the vaccine likely prevented influenza in many Americans. The experience in 1957 taught us that if enough vaccine is made in advance of a pandemic, lives can be saved.

Today, although four companies make influenza vaccine (sanofi pasteur, GlaxoSmithKline, Chiron and MedImmune), the infrastructure to produce large quantities of influenza vaccine has deteriorated. As it stands, we could not possibly make enough vaccine for all of our citizens in advance of a pandemic. For this reason, the influenza vaccine would have to be rationed. The Department of Health and Human Services is developing a pandemic influenza plan. Details can be found at www.pandemicflu.gov/plan.

This information is provided by the Vaccine Education Center at The Children's Hospital of Philadelphia. The Center is an educational resource for parents and healthcare professionals and is composed of scientists, physicians, mothers and fathers who are devoted to the study and prevention of infectious diseases. The Vaccine Education Center is funded by endowed chairs at The Children's Hospital of Philadelphia and Kohl's Department Stores. The Vaccine Education Center does not receive support from pharmaceutical companies.

Some of this material was excerpted from the book, *Vaccines: What You Should Know*, co-authored by Paul A. Offit, M.D., and Louis M. Bell, M.D.

Q. If I can't get a vaccine, can I be protected by medicine like Tamiflu?

A. Yes. Tamiflu is not a vaccine; it is an antiviral. An antiviral is an antibiotic that works on viruses. It is possible that Tamiflu given early after infection could save lives. But there are several problems. First, if Tamiflu is used indiscriminately, influenza virus will become resistant to it. Second, Tamiflu is likely to be effective only if started within 48 hours of the beginning of the infection. Third, the drug isn't perfect; several people in Southeast Asia infected with bird flu took Tamiflu early in their disease but still died from the infection. So, prevention by vaccine is still the best option.

Q. Other than vaccines and medicines, is there anything else I can do to protect myself during an influenza pandemic?

A. Yes, several simple strategies are effective. Careful handwashing, covering your mouth when sneezing and staying home when ill all help to reduce the spread of influenza virus during a pandemic or epidemic.

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