

Q&A: Why experts are watching the H5N1 bird flu so closely

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Several people started to develop concerning symptoms after working with dairy cows, adding to headlines that had already become worrisome.

Bird flu, they said.

For decades, medical scientists have warned of the potentially cataclysmic dangers of variants of so-called avian flu. From antiquity to as recently as 15 years ago, outbreaks of bird flu have wreaked havoc on a global scale. The [pandemic](#) of 1918, which killed more than 50 million people and sickened 500 million others worldwide, was caused by a virus that began with infected birds directly sickening humans.

So, are three people with conjunctivitis the opening salvo of a new pandemic?

The U.S. Centers for Disease Control and Prevention (CDC) says the threat so far is minimal. But there are worrying signs when it comes to H5N1.

Dr. Catharine Paules, an infectious diseases physician at Penn State Health Milton S. Hershey Medical Center, discusses why [bird flu](#) isn't something to be taken lightly, why experts are watching H5N1 so closely and what you can do to help stop its spread.

What exactly is bird flu?

Influenza A viruses, which cause the flu, have many different subtypes and can infect multiple species, including humans. A natural reservoir, though, is wild aquatic birds. Since 1900, influenza A viruses have caused four pandemics. Each of them was caused by an animal virus that changed (mutated) and started infecting people. That can happen directly from a bird—like in the pandemic of 1918, which, prior to COVID, caused the most deaths of any infectious disease pandemic in history. Or it can happen with a mammalian intermediate host that transmits it to humans. The 2009 influenza pandemic, for example, was transmitted to humans by pigs.

The remarkable capacity of influenza viruses to mutate and jump species leaves us vulnerable to future pandemics. Experts watch [influenza viruses](#) in other species, including birds, and assess the likelihood that they may cause a future pandemic.

According to the CDC's website, there have been very few human cases of H5N1 bird flu in the U.S. Why is it even being discussed right now?

While H5N1 primarily infects birds, various strains have caused nearly 900 [human infections](#), approximately half of which have been fatal. So far, these infections are largely isolated, meaning a person gets sick from contact with the bird or an infected mammal but is then unable to easily spread the infection to other people. To cause a pandemic, H5N1 would need to develop changes in the virus that would allow it to spread easily among people.

In 2022, a new strain of H5N1 began to circulate among wild birds in the U.S. with lethal spillover infections in poultry flocks and adaptations allowing infections in mammals such as mink, foxes, ferrets and seals. In March, a substrain was reported among dairy cattle in the U.S. and appears to be spreading efficiently among herds.

As of July 12, 151 herds in the U.S. have been infected. Widespread transmission of H5N1 in cows gives the virus opportunities to develop mutations that may make it easier to infect and then spread efficiently between humans. At this point, several human infections have occurred in people exposed to infected dairy cattle. While no person-to-person transmission has occurred, we are watching this virus carefully and need to prepare for that possibility.

How does it spread among cows? What about to

humans?

At this point, we don't know how the virus is spreading between cows or from cows to people. Close contact with infected cows, contaminated objects or [unpasteurized milk](#) may be contributing to spread.

Speaking of milk is there any risk to drinking it or eating other dairy products?

The U.S. Food and Drug Administration has done extensive testing to ensure the safety of the milk supply. So far, no live virus (only dead parts of the virus) has been found in pasteurized dairy products. Unpasteurized milk from infected cows, however, does contain live virus and it is possible that you could get sick from drinking it. There is never a good time to drink unpasteurized dairy, but now it is especially dangerous.

What are the symptoms of H5N1?

Other strains of H5N1 that have infected people have caused fevers, [respiratory symptoms](#) including cough and shortness of breath, body aches and gastrointestinal symptoms or neurologic symptoms like seizures. We are still learning about human H5N1 infections after contact with cows but several people have had eye redness and one had respiratory symptoms.

How do you determine someone has it?

Health care providers work with public health officials to identify the virus. Respiratory samples are tested similarly to when someone is tested for seasonal flu. In some cases, an eye swab may also be checked.

What, if anything, can you do to protect yourself and your family?

For most people right now, the risk of getting H5N1 is low and to make that risk even lower, you can avoid exposure to poultry and cows, especially those that appear ill. You should also avoid unpasteurized dairy products. It is important to be aware of the situation in case the risk increases and further preventative actions need to be taken.

The risk is higher for farmers and others who have frequent contact with birds and cows. The CDC has developed [guidance](#) for personal protective equipment that can be worn. There are also medicines that can be prescribed if you have an exposure, before you get sick. Vaccines may eventually be available.

What should I do if I think I'm sick?

It is important to contact a health care provider as soon as symptoms start. It is best to call ahead before coming to a health care facility so that appropriate precautions can be taken to protect other patients and staff. Your health care provider will be able to arrange testing and can prescribe medications that may help your illness.

Do you think H5N1 will cause a pandemic?

I have a lot of respect for the ability of influenza to cause pandemics as we have seen this documented throughout history. I don't know whether this particular strain of H5N1 will cause a pandemic, but in some respects, it's only a matter of time until we are confronted with another influenza pandemic. The time to prepare is now—before it happens.

Has the COVID-19 pandemic prepared us for this?

COVID-19 has taught us the scale of impact that a respiratory virus pandemic can cause in terms of deaths, hospitalizations and economic losses. It's also shown us that we are not as prepared as we should be for the next one. Preparing for a pandemic can only benefit us, and we still have a lot of work to do.

Provided by Pennsylvania State University

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