

# Bird flu 101: How bad is the new H7N9 strain?

April 4 2013, by Margie Mason

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A worker arranges containers of chickens at a wholesale market on Thursday, April 4, 2013, in Shanghai, China. In a worrisome sign, a bird flu in China appears to have mutated so that it can spread to other animals, raising the potential for a bigger threat to people, scientists said Wednesday. (AP Photo)

A bird flu virus never before found in humans has grabbed world attention this week after it infected and killed people in China. Scientists have been scrambling to understand how it happened and, more importantly, whether it poses a risk to public health or could potentially

spark a global pandemic.

The good news is that so far there's no sign that the H7N9 virus is spreading from person to person, but experts say it has mutated in a way that has left them a bit worried. Here's a crash course in Bird Flu 101 to help explain what's known about the strain and why it matters:

Q: What is the H7N9 virus and what do we know about it?

A: The H7N9 strain—named for the combination of proteins on its surface—has infected at least 14 people in China since February, killing five of them, the official Xinhua News Agency said. The latest cases were confirmed Thursday, four days after the initial announcement. Symptoms include fever and respiratory problems, including severe pneumonia. Much still remains unknown about the virus, including how people are getting infected, but scientists say it contains genetic markers that could help it infect humans. It is believed to be able to circulate in poultry stocks without sickening birds. This can allow it to spread in flocks unnoticed, making it much harder to track and also possibly creating more contamination since the birds are surviving and spending more time on farms, in markets and elsewhere.

Q: How concerned should the public be about the H7N9 virus?

A: At this point, experts say there is no cause for alarm, but they are watching it closely. No evidence exists that the virus is spreading from person to person, and no cases have been reported outside China. Samples are being collected from patients, and the Chinese Center for Disease Control and Prevention is sharing genetic sequences with outside scientists. This allows the world's top flu experts to study the virus and look for mutations that could make it more dangerous. Poultry and its products are safe to eat as long as they are properly cooked.

Q: Is there a vaccine?

A: No vaccine exists, but the World Health Organization and its partners are already working to isolate and identify possible candidate viruses that could be used to make a future vaccine if necessary. However, it would likely take months to produce the first doses.

Q: What changes are scientists seeing in the virus and why is this important?

A: Although it is not yet clear, the virus appears to have mutated in a way that would make it easier for it to adapt and grow at normal body temperature in mammals. Scientists are working to figure out which species could now be playing host to the virus, and one possibility is pigs.

Swine are important because they share some basic biological similarities with humans, and they can serve as "mixing vessels" if infected with different flu strains at the same time.

Other possibilities are that the mutations could be occurring in poultry or they are being generated after people are infected by birds.

"To me, the most important question to find out is: What is the actual host of this virus?" said Richard Webby, director of a WHO flu center at St. Jude Children's Research Hospital in Memphis, Tennessee. "It really looks like there's been some mammalian host involved."

Q: How is this bird flu different from the H5N1 strain everyone has been so concerned about in the past?

A: The H5N1 virus is highly lethal in birds, making it easier to identify and eliminate poultry outbreaks. H5N1 remains an avian influenza and

has not taken root in another species, such as pigs. Most human infections have been linked to contact with infected birds. Scientists have been closely watching the virus since it first appeared in Hong Kong in 1997. It resurfaced in 2003 and decimated poultry stocks across Asia and has since killed at least 371 people. About 60 percent of those infected die, and experts have long feared the H5N1 virus could mutate into a form that spreads easily from person to person, possibly igniting a pandemic.

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