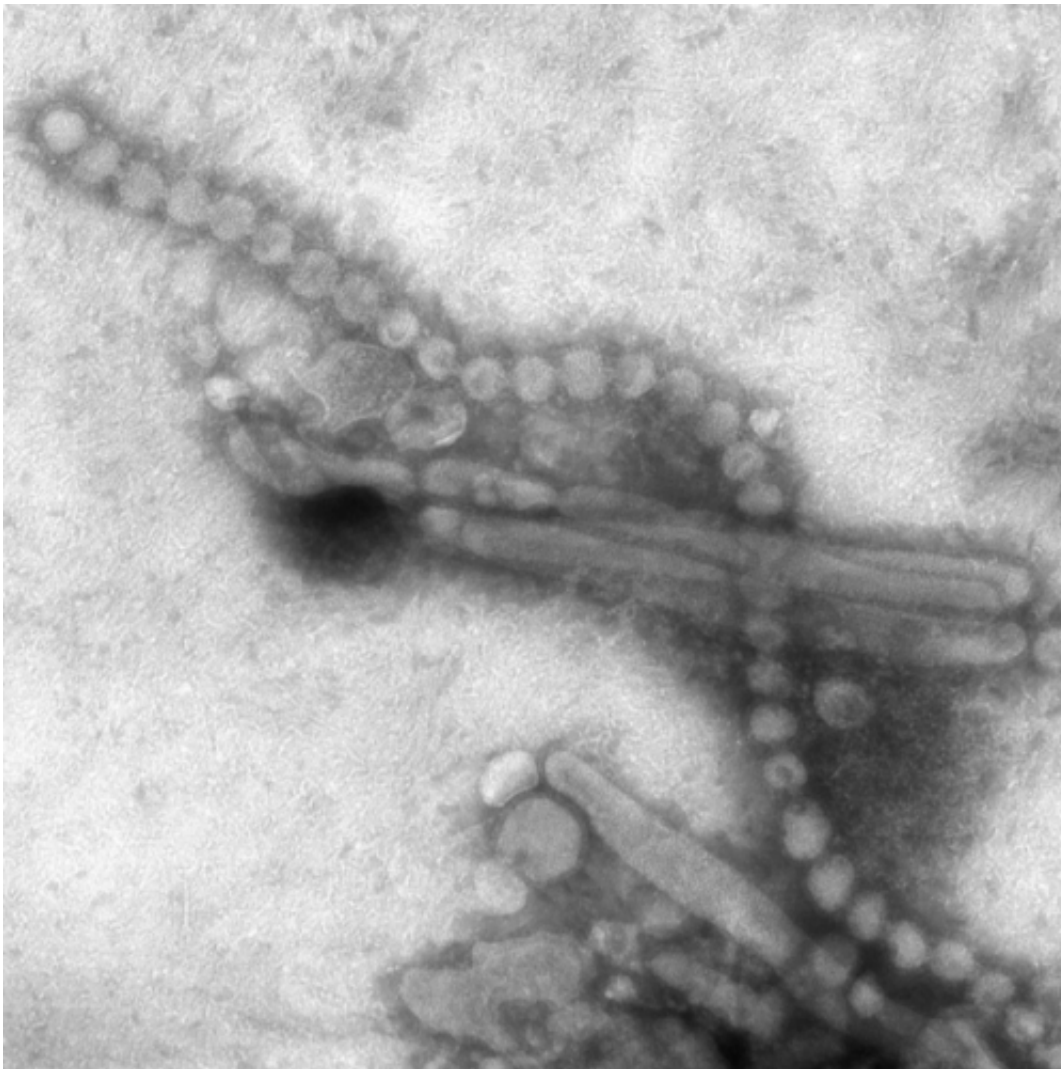


# Evidence of probable transmission of bird flu virus between two unrelated individuals

November 18 2015

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Influenza A (H7N9) as viewed through an electron microscope. Both filaments and spheres are observed in this photo. Credit: CDC

Previous reports of person to person transmissions have all occurred in family clusters, suggesting that either common exposures or genetic susceptibility might contribute to the infection.

The study describes two patients who shared the same ward in a district hospital in Zhejiang Province, China in February 2015.

The first (index) case was a 49 year old man who became ill after buying two chickens from a live [poultry market](#) for the wedding ceremony of his elder daughter. He developed a fever, cough, and sore throat and was admitted to a district hospital on 18 February.

He was diagnosed with H7N9 virus on 24 February and was admitted to a specialist hospital ward with intensive care facilities. He died of multi-organ failure on 20 April.

The second case, a 57 year old man with a history of [chronic lung disease](#) (COPD), developed flu-like symptoms after staying on the same ward of the district hospital as the index case for five days (18 to 23 February).

He was diagnosed with H7N9 virus on 25 February and died of respiratory failure on 2 March.

A total of 38 close contacts of both cases, including family members and health workers, were tested for the virus.

Two samples taken from the chickens purchased by the index patient as well as five of 11 samples from the live poultry market he visited were positive for H7N9 virus.

The second patient had no history of poultry exposure for 15 days prior to his illness. Samples from his home, from chickens raised by his

neighbours, and a local chicken farm were all negative for H7N9 virus.

Yet the genetic sequence of H7N9 virus from the second patient was nearly identical to that from the index patient, and genetically similar to the virus samples taken from the live poultry market visited by the index patient.

The researchers stress that they cannot completely rule out an unidentified environmental exposure that might explain the H7N9 infection in the second patient.

However, because no other common exposure was identified, they say "it seems most likely that the H7N9 virus was transmitted from the index case to the second case during their stay on the same ward."

Their findings also strongly suggest that the live poultry market is the most probable source of influenza H7N9 [virus](#) infection for the index case.

They say these results "should raise our concern about the increasing threat to public health" and they call for better training and hospital hygiene as well as enhanced surveillance of both patients with influenza-like illness in hospitals and chickens in [live poultry](#) markets.

"We should not accept nosocomial transmission, of any pathogen, in any setting," say experts from the Netherlands in an accompanying editorial.

Well described and researched case reports, such as today's study, are vital to keep researchers focused on promoting the wellbeing of patients in hospitals and other healthcare settings, they write.

We must remain alert for (re)emerging infections, including avian influenza, particularly when we still cannot tell how risks to humans will

evolve. We also need to invest more in clinical, epidemiological, and virological research to unravel the risks posed by sporadic human infections with any [avian influenza virus](#)," they conclude.

"First and foremost, however, we should do no harm to our patients, and so should not accept nosocomial transmission, of any pathogen, in any setting."

**More information:** Nosocomial transmission of avian influenza A (H7N9) virus in China: epidemiological investigation, [www.bmj.com/cgi/doi/10.1136/bmj.h5765](http://www.bmj.com/cgi/doi/10.1136/bmj.h5765)

Editorial: Nosocomial transmission of avian influenza virus A (H7N9), [www.bmj.com/cgi/doi/10.1136/bmj.h5980](http://www.bmj.com/cgi/doi/10.1136/bmj.h5980)

Provided by British Medical Journal

Citation: Evidence of probable transmission of bird flu virus between two unrelated individuals (2015, November 18) retrieved 17 May 2024 from <https://medicalxpress.com/news/2015-11-evidence-probable-transmission-bird-flu.html>

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