



Emerging and Reemerging Infectious Diseases, Region of the Americas

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Avian Influenza A (H5N1) in Humans and Poultry in Viet Nam

Laboratory results received on Sunday, 11 January 2004, confirmed the presence of avian influenza virus strain A (H5N1) in samples taken from 2 children and 1 adult admitted to hospital in Hanoi with a severe respiratory illness.

Since the end of October, hospitals in Hanoi and surrounding provinces have admitted 14 persons with severe respiratory illness (13 children and 1 adult). To date, 11 of the children and the adult have died.

It is not known whether all of these cases were caused by the same pathogen. At present, there is no evidence that human-to-human transmission has occurred. No reports indicate that health care workers have been infected.

The presence of avian influenza A (H5N1) in samples from three of these cases was confirmed by Hong Kong's National Influenza Center and Japan's National Institute for Infectious Diseases. Both are members of the WHO influenza network. The investigations being carried out are focusing on studying the source of infection and the chance of human-to-human transmission. Despite this, no evidence exists yet that human-to-human transmission was a factor among those affected by the outbreak.

To date, genetic testing being carried out on the samples has revealed partial sequencing of the H5N1 strain, which caused the outbreak. All the genes identified are of avian origin, which indicates that the virus that was the cause of death in the three confirmed cases has not yet incorporated any genes of human origin. The incorporation of human genes in its genome would increase the probability of the avian virus acquiring capacity for human-to-human transmission.

Normally, avian influenza strains normally infect only birds. In 1997, however, the first cases of human infection with avian influenza A (H5N1) were identified in Hong Kong. The virus infected 18 persons and caused 6 deaths. Genetic studies subsequently linked the outbreak in humans to an outbreak of highly pathogenic avian influenza in poultry. The immediate culling of around 1.5 million poultry in Hong Kong is thought to have averted a larger outbreak in humans.

Other recent outbreaks of avian influenza in humans have caused limited disease. An outbreak of H5N1 in Hong Kong in February 2003 caused 2 cases and 1 death. In April 2003, an outbreak of H7N7 avian influenza in The Netherlands caused the death of 1 veterinarian and mild illness in 83 humans. In Hong Kong, mild cases of avian influenza A (H9N2) in children occurred in 1999 (2 cases) and in mid-December 2003 (1 case).

At the beginning of January of this year, avian influenza virus A (H5N1) was identified as the cause of an outbreak of highly pathogenic avian influenza in two southern provinces of Viet Nam. To date, the virus, which spreads rapidly and has a mortality in chickens approaching 100%, has resulted in the deaths of 40,000 chickens and the culling of 30,000 more. A previous outbreak of avian influenza A (H5N1) occurred in South Korea in December 2003, though the relationship is totally unknown between human beings and outbreaks of avian influenza virus A (H5N1) among poultry. On 12 December 2003, Japanese authorities announced the death of 6,000 chickens at a single farm as due to infection with the same strain of the virus. These outbreaks mark the first cases of avian influenza in South Korea, and the first cases in Japan since 1925. No human cases of infection with the avian influenza virus have been reported in either of these outbreaks, however.

In response to these developments, WHO has initiated a series of activities. These include support to national authorities in investigating the outbreaks and enhanced surveillance activities in Asia. WHO has also initiated the development of candidates and reagents for vaccine production, and antigenic and genetic assessments of the H5N1 strain to provide up-to-date diagnostic tests to national influenza centers.

The WHO Global Influenza Network will receive viral and clinical specimens shortly. As a precautionary measure, network laboratories will immediately begin work on the development of a strain that can be used to produce a vaccine.

For additional information, see the WHO [avian influenza fact sheet](#). (*Disease Outbreak News*, 15 January 2004. Geneva: World Health Organization/WHO.)

Source: World Health Organization (WHO) *Disease Outbreak News*:

1. [Avian influenza A \(H5N1\) in humans and poultry in Viet Nam](#) (13 January 2004).
2. [Avian influenza A\(H5N1\) in humans in Viet Nam and poultry in Asia—update](#) (14 January 2004).