

QUESTIONS AND ANSWERS ON INFLUENZA A (H7N9)

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What is Avian Influenza (AI)?

Avian influenza (AI) is a disease of birds, caused by Type “A” influenza viruses which can affect several species of domestic poultry, such as chickens, turkeys, quails, guinea fowl, ducks, etc., as well as pet birds and wild birds. Avian influenza viruses have also been isolated, although less frequently, from mammalian species including rats, mice, weasels, ferrets, pigs, cats, tigers, dogs, horses, as well as humans.

There are many strains of AI viruses that can generally be classified into two categories according to the severity of disease in poultry: low pathogenic (LPAI) that typically causes little or no clinical signs in birds and highly pathogenic (HPAI) that can cause severe clinical signs and possible high mortality rates in birds.

The differentiation between low and high pathogenicity avian influenza is based on the results of laboratory tests, which are described in the OIE Diagnostic Manual. This characterisation of avian influenza viruses as low or high pathogenicity (severity of disease) is specific to poultry and other birds, and not necessarily to other species that can be susceptible to avian influenza viruses including humans.

What is influenza A(H7N9)?

In March 2013 the Chinese Public Health authorities reported the first human cases of disease due to the infection with a type A influenza virus of the strain H7N9. This strain of virus usually infects birds, and the report was followed by reinforced surveillance in bird populations in China.

On 4 April 2013 the Chinese Veterinary authorities notified the occurrence of infection of pigeons and chickens with low pathogenic avian influenza virus H7N9 to the OIE, which is suggested as being very similar to the virus infecting humans.

As this low pathogenic AI virus does not cause severe clinical signs in animals, the disease was not diagnosed before specific laboratory diagnostic tests could be conducted.

What is the source of influenza A(H7N9)?

Available scientific information shows genetic similarities between the virus affecting humans and the influenza A(H7N9) virus found in birds and that was reported to the OIE by Chinese authorities on 4 April 2013. The source of the human cases has yet to be identified.

The source or possible reservoir of influenza A(H7N9) is currently being investigated by relevant authorities including Veterinary Services, the China Centre for Disease Control and Prevention and the animal health services of China, as well as at international level through the collaboration between the Food and Agriculture Organization (FAO), World Organisation for Animal Health (OIE) and the World Health Organization (WHO).

The OIE has a worldwide recognised Reference Laboratory on avian influenza in Harbin, China. 15 other Reference Laboratories recognized by the OIE work on animal influenza (in poultry, pigs, horses) around the world.

Have wild birds been identified as a carrier of the influenza A(H7N9) virus?

Wild birds can normally carry avian influenza viruses in their respiratory or intestinal tracts but they do not commonly get sick. They have historically been known as reservoirs and vectors of AI viruses. Around the world, surveillance measures have been put in place to monitor occurrence and characteristics of AI viruses in wild birds. In wild birds, it is common during routine testing to find certain influenza viruses. The majority of these viruses do not cause disease in wild birds. To date influenza A(H7N9) has not been found in wild birds in the People's Republic of China.

How is influenza A(H7N9) transmitted and spread among birds?

All AI viruses can be transmitted among birds through direct contact with secretions from infected birds, especially faeces or through contaminated feed, water, equipment, and human clothing. They are readily transmitted from farm to farm by the movement of domestic live birds, people (especially when shoes and other clothing are contaminated), and contaminated vehicles, equipment, feed, and cages. Highly pathogenic viruses can survive for long periods in the environment, especially when temperatures are low.

Several factors can contribute to the spread of all AI viruses including: the movements of people and goods, marketing practices (live bird markets), farming practices and the presence of the viruses in migratory wild birds.

What are the reporting requirements for influenza A(H7N9)?

As detailed in the OIE *Terrestrial Animal Health Code*, all cases of highly pathogenic avian influenza (HPAI) found in any domestic or wild bird must be notified to the OIE by the competent authorities (Veterinary Services) in a country. Low pathogenic avian influenza viruses of subtypes H5 and H7 in poultry are also notifiable to the OIE because, even though they do not cause severe disease, they have the potential to mutate readily into highly pathogenic viruses or to infect other species.

On 4 April 2013, the Chinese Veterinary Authorities notified the occurrence of infection of pigeons and chickens with low pathogenic avian influenza virus H7N9 to the OIE.

What are the basic requirements for worldwide AI prevention and control in animals?

All countries must maintain the public and private components of Veterinary Services, which comply with OIE standards on quality, including:

- Appropriate legislation
- Early detection and response capacities in face of biological events in animals
- Compensation mechanism establishment and management
- Efficient veterinary laboratories
- Use of vaccination in relevant epidemiological situations when appropriate.

Can culling be used as a control measure?

If the infection is detected in animals, generally a culling policy is used in the efforts to control and eradicate the disease.

Requirements include (and are described in the OIE *Terrestrial Animal Health Code*):

- humane destruction of all infected and exposed animals (according to OIE animal welfare standards);
- appropriate disposal of carcasses and all animal products;

- surveillance and tracing of potentially infected or exposed poultry;
- strict quarantine and controls on movement of poultry and any potentially contaminated vehicles and personnel;
- thorough decontamination of infected premises ;
- a period at least 21 days before restocking.

In the case of low pathogenic avian influenza like the current outbreaks of H7N9 declared by China, stamping out is generally applied at the level of the infected farm or within a short radius around the infected premises when outbreaks are detected.

Does OIE recommend vaccination of animals to control the disease?

When appropriate vaccines are available, vaccination aims to protect the susceptible bird populations from potential infection. Vaccination reduces viral excretions by animals and the virus' capacity to spread. Vaccination strategies can effectively be used as an emergency effort in the face of an outbreak or as a routine measure in an endemic area. Any decision to use vaccination must include an exit strategy, i.e. conditions to be met to stop vaccination. Careful consideration must be given prior to implementing a vaccination policy and requires that the recommendations from the World Organisation for Animal Health (OIE) on vaccination and vaccines are closely followed (www.oie.int/download/AVIAN_INFLUENZA/Guidelines_on_AI_vaccination.pdf).

In short, vaccination should be implemented when culling policies cannot be applied either because the disease is endemic and therefore widely present, or the infection in affected animals is too difficult to detect.

What are the OIE recommendations for trade in poultry from a country infected with influenza A(H7N9)?

The risk analysis to be used by importing countries in order to protect their territory from pathogens introduction is very complex and is based on a long list of OIE standards.

In the case of outbreaks of low pathogenic avian influenza of the H7 strain in potential exporting countries, the trade recommendations that apply can be found in the OIE *Terrestrial Animal Health Code* (Chapter 10.4; 2013). These measures are science-based and should not result in unjustified trade barriers; they include zoning and the testing of the animal populations of origin.

What compensation measures should be applied for the concerned farmers?

Systems for financial compensation of farmers and producers who have lost their animals as a result of mandatory culling requested by national authorities vary around the world; they may not exist at all in some countries. The OIE encourages national authorities to develop and propose compensation schemes because they are a key to early detection and transparency in reporting the occurrence of animal diseases, including avian influenza.

What are the food safety recommendations?

Animals which have been culled as a result of control measures in response to an outbreak of avian influenza, including the A(H7N9) virus, should not enter the food and feed chain as a precautionary and regulatory measure.

There is no evidence to suggest that the consumption of poultry or eggs fit for human consumption could transmit the AI virus to humans.

What is the public health risk associated with avian influenza?

AI viruses are highly species-specific, but have, on rare occasions, crossed the species barrier to infect humans. This disease should not be confused with seasonal human influenza (flu), a very common human disease (generally caused by human H1 and H3 viruses). Transmission of AI viruses to humans occurs when there is close contact with infected birds or heavily contaminated environments.

In the past, human disease has usually been related to the transmission of a highly pathogenic virus of animal origin. The current influenza A(H7N9) virus notified to the OIE by China is low pathogenic for poultry; investigations are being conducted to demonstrate possible links with the human cases, as the genetic similarity has already been established.

Due to the potential for human infection, it is recommended that people working with, or in contact with poultry suspected of being infected with AI viruses, wear protective clothing including face masks, goggles, gloves and boots.

What prevention measures are recommended at the farm level?

It is essential for poultry producers to maintain biosecurity practices to prevent introduction of the virus in their flock:

- keep poultry away from areas frequented by wild fowl;
- do not provide elements on property that may attract wild birds;
- keep control over access to poultry houses by people and equipment;
- maintain sanitation of property, poultry houses and equipment;
- avoid the introduction of birds of unknown disease status into flock;
- report illness and death of birds to Veterinary Services;
- appropriate disposal of manure and dead poultry;
- vaccinate animals when appropriate.

More information

1. OIE Terrestrial Animal Health Code:

<http://www.oie.int/en/international-standard-setting/terrestrial-code/access-online/>

2. OIE Manual of Diagnostic Tests & Vaccines for Terrestrial Animal:

<http://www.oie.int/en/international-standard-setting/terrestrial-manual/access-online/>

3. OIE Technical Disease Card:

<http://www.oie.int/en/animal-health-in-the-world/technical-disease-cards/>

4. OIE web portal on avian influenza:

<http://www.oie.int/en/animal-health-in-the-world/web-portal-on-avian-influenza/>

5. Food and Agriculture Organization

Frequently asked questions on A(H7N9) virus

<http://www.fao.org/news/story/en/item/173704/icode/>

6. World Health Organization

Frequently Asked Questions on human infection with influenza A(H7N9) virus, China
http://www.who.int/influenza/human_animal_interface/faq_H7N9/en/index.html

7. OIE/FAO Network of expertise on animal influenza (OFFLU):

<http://www.offlu.net/>