



Scientific Task Force on Avian Influenza and Wild Birds

H7N9 Low Pathogenic Avian Influenza: situation update 30 April 2013

KEY MESSAGES

- To date, the avian influenza A/H7N9 strain recently found in humans, domesticated poultry and one possibly wild pigeon in the People's Republic of China and the Province of Taiwan has never been isolated from other wild birds.
- At this stage wild birds have *not* been identified to play any role in the spread of this virus.
- There is no information available about the effects of this virus on wild birds, although they are unlikely to show clinical signs.
- Low pathogenic avian influenza viruses are normally found in low percentages in wild waterfowl and other birds throughout the year.
- Separation between domestic poultry and wild birds should be encouraged to prevent transmission in both directions.
- The keeping of semi-domesticated free ranging species of ducks in contact with wild birds and poultry is discouraged as this increases the risk of bridging and viral transmission across agro-ecological compartments.
- Rapid communication of outbreaks and results of surveillance testing are needed to support fact-based decision making.
- Currently, the main focus of surveillance efforts should be on domestic poultry. Surveillance of wild birds should use standardised methodologies involving safe capture, handling and release of sampled birds, following recommendations of the Task Force.
- Reporting of surveillance in wild birds should be enhanced and include proper identification of species.
- Disproportionately blaming wild birds for the spread of the virus, as happened during previous outbreaks of H5N1 highly pathogenic avian influenza (HPAI), risks diverting disease control activities and causing negative conservation consequences. The media, academics and disease control agencies are requested to act responsibly when discussing the role of wild birds and avian influenza A(H7N9).

Background: avian influenza viruses and wild birds

Avian Influenza viruses (Influenza A) are a highly diverse group of viruses specifically adapted to cause disease in bird species. Wild waterfowl (generally from the family Anatidae - the ducks, geese and swans) serve as the reservoir for low pathogenic avian influenza (LPAI) viruses in nature and are the main source of the wide genetic diversity within avian influenza viruses (AI). Influenza viruses mutate and reassort over

time, leading to the emergence of new viruses: some of these are low pathogenic while others can cause significant disease in domestic poultry (generally domestic duck, chicken, turkey, pigeon, quail and ostrich) and are known as highly pathogenic avian influenza viruses (HPAI). Such HPAI viruses are usually generated in intensive poultry production systems. Depending on their specific genetic characteristics, both LPAI and HPAI viruses may have the potential to infect a variety of non-bird species, including humans.

LPAI viruses are well-adapted to their avian hosts and rarely cause significant clinical illness in birds. LPAI viruses are generally found in a very low percentage of wild birds, although they circulate continuously throughout the year, in the northern hemisphere peaking in prevalence around September-November. AI viruses (both LPAI and HPAI) can be shared between domestic species and wild birds through close contact. Land use changes and open grazing of poultry in rice fields and other wetlands have brought domestic poultry and wild bird species in close contact. Along with the spreading of potentially infected poultry manure as fertilizer, these provide possible mechanisms for transmission and reassortment of these viruses.

Potentially, wild birds through their migratory movements, could spread AI viruses over short or long distances during their migration periods but confirmed spill-over of pathogenic viruses (e.g. H5N1 HPAI) into domestic poultry is extremely rare and evidence for this occurring is circumstantial at best. The timing, patterns and routes of migration are generally known for many species, but remains poorly known for others. These movements can be significantly affected (year by year or bird by bird) by numerous external factors including concurrent disease, climatic conditions, habitat conditions and food availability.

In previous outbreaks of H5N1 HPAI, there was little concrete evidence that wild birds played a significant part in the spread of the virus. Wild birds were often disproportionately or inappropriately implicated in outbreaks of the virus leading to diverted disease control efforts and negative conservation consequences.

Recent Developments

On 31 March 2013, Chinese authorities reported the isolation of an avian influenza A (H7N9) virus from human patients in the People's Republic of China, the first occurrence of this virus subtype in humans. This virus appears to cause few to no clinical signs in infected domestic chickens, and is thus classified as a LPAI virus. To date this particular H7N9 virus has *not* been isolated in any wild bird species, although there has been one isolate taken from a pigeon classified as "wild." Since pigeons live in close contact with humans they can be considered "urban" or peridomestic fauna and do not necessarily reflect the state of true wildlife. Surveillance in wild birds is ongoing in various areas throughout the People's Republic of China. Historically, different strains of H7N9 LPAI viruses have been isolated only rarely, mainly from wild birds through general surveillance. These historical isolations of H7N9 from wild birds are *not* closely related to the strain of H7N9 currently causing human illness.

The recently identified H7N9 LPAI virus that has infected humans in the People's Republic of China and the Province of Taiwan is a triple reassortant, including gene segments from three separate existing viruses (H7Nx, H11N9 and H9N2). Of these gene segments, the N9 portion is closely related to viruses found in wild bird populations, the H7 is closely related to viruses found in both wild and domestic waterfowl, and the internal genes from the H9N2 subtype are closely related to domestic poultry isolates.

Potential Role of Wild Birds in the current H7N9 outbreak

It is important to note that at this stage wild birds have not been identified to play any role in the spread of this virus. Since infection with this virus will probably not elicit clinical signs in migratory birds, it is more difficult than in previous outbreaks involving H5N1 HPAI to know whether or not the virus is present in their populations. This might change, and continued surveillance is required. Determining whether wild birds are carrying the virus requires large-scale surveillance activities that follow standardised methodologies involving safe capture, handling and release of sampled birds, as promoted by the Task Force. Currently it is impossible to tell what role, if any, wild birds will play in this current situation. Humans who are in contact with live birds should ensure that normal biosecurity protocols are followed to minimize exposure to AI viruses. Additionally, care should be taken to keep domestic poultry and wild birds separate to prevent transmission in both directions.

The Task Force considers that wild birds are unlikely to be a major concern for the spread of this virus in the coming weeks. While there is a real risk that migratory birds could spread the disease to new areas at some stage, at the moment other pathways for infection such as from live poultry markets or domestic poultry movements are of a higher priority for attention.

Work of the Scientific Task Force on Avian Influenza and Wild Birds

The Task Force established in 2005 aims to obtain the best scientific advice on the conservation impact of the spread of H5N1 HPAI, including assessing the potential role of migratory birds as vectors of the virus. It has issued advice on the root causes of the spread of this disease and has promoted the development of international early-warning systems. The Task Force continues to work on reviewing the role of wild birds in avian influenza A (H7N9) and promoting a balanced opinion based on current scientific evidence. The Task Force comprises representatives and observers from 15 international organisations, including four UN bodies, specialist non-governmental organisations, and individual experts, including: [UNEP African-Eurasian Waterbird Agreement](#), [Birdlife International](#), [UNEP Convention on Biological Diversity](#), [International Council for Game and Wildlife Conservation](#), [UNEP Convention on Migratory Species](#), [UN Food and Agriculture Organization](#), [UN International Strategy for Disaster Reduction](#), [Ramsar Convention on Wetlands](#), [Wetlands International](#), [Wildfowl & Wetlands Trust](#) and [Zoological Society of London](#). The main observers include [World Organisation for Animal Health](#), [United Nations Environment Programme](#) and [World Health Organisation](#). Additionally, the Task Force works closely with academic and research groups such as the [Royal Veterinary College](#) in the UK.

As of November 2011 the Scientific Task Force on Avian Influenza and Wild Birds was incorporated into the larger UNEP-CMS and FAO co-convened Scientific Task Force on Wildlife and Ecosystem Health, although the core function and membership has not changed. This Task Force seeks to support evidence-based decision processes and tools that consider disease dynamics in the broader context of sustainable biodiversity/ecosystem management, agricultural production and food security, socio-economic development, environmental protection and conservation of migratory species, their habitats and migration routes.

Further Information:

Food and Agriculture Organization of the United Nations

- General information on avian influenza A(H7N9): <http://www.fao.org/h7n9>
- Wild Bird HPAI Surveillance Manual:
http://www.fao.org/docs/eims/upload/218650/manual_wildbird_en.pdf
- Wild Birds and Avian Influenza Manual: <http://www.fao.org/docrep/010/a1521e/a1521e00.htm>

World Health Organization:

- General information on avian influenza A(H7N9) :
http://www.who.int/influenza/human_animal_interface/faq_H7N9/en/

World Organization for Animal Health

- General information on avian influenza A(H7N9): <http://www.oie.int/for-the-media/press-releases/detail/article/questions-and-answers-on-influenza-ah7n9/>

Center for Infectious Disease Research & Policy (CIDRAP)

- Comprehensive and up-to-date information on H7N9:
<http://www.cidrap.umn.edu/cidrap/content/influenza/h7n9/index.html>

Convention on Migratory Species

- General information: <http://cms.int>

Other

- Archived information on H5N1 and wild birds from the Scientific Task Force on Avian Influenza and Wild Birds: <http://www.aiweb.info/Default.aspx>
- Scientific Task Force on Wildlife and Ecosystem Health:
<http://www.wildlifeandecosystemhealth.org>
- Ramsar's Handbook on avian influenza and wetlands: <http://www.ramsar.org/pdf/lib/hbk4-04.pdf>