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# **Faculty of Occupational Medicine**

## **Avian Influenza**

## **Position Paper**

**May 2006**

## **Key Points**

- **The current world outbreak of Avian Influenza is caused by Influenza A virus - H5N1 strain.**
- **Avian Influenza is primarily a disease of avians and other susceptible animal species – it does not easily transmit to humans and evidence of human-human spread is very limited.**
- **The disease is essentially transmitted by wild birds which act as a reservoir of infection and due to their migratory patterns the potential to spread the disease across the globe exists.**
- **The main focus of the disease in avians from 2003 has been in the Far East and from then the disease in birds and poultry has been moving west.**
- **There have been human fatalities in the Far East, Egypt and Turkey.**
- **In the UK and Ireland, public health authorities have been compiling contingency plans in the event of an outbreak of avian influenza leading to a human influenza pandemic. These plans have involved stockpiling of anti-viral drugs, influenza vaccination and a process of health surveillance in the population.**
- **Human influenza vaccination is being offered to workers involved in outbreak control activities. H5N1 vaccines are being developed but are not yet widely available.**
- **Occupational exposure should be minimized as far as possible by the application of sound hygiene practices and the wearing of appropriate PPE.**
- **It is recommended that Oseltamivir be used for prophylaxis in workers exposed to the avian influenza virus – it should be given within 48 hours of exposure and continued for seven days after the last exposure to a maximum of 42 days.**
- **Those workers who have been exposed should be routinely followed up on a daily basis in regard to reporting of symptoms and for seven days after the last exposure.**
- **Occupational health will liaise closely with public health colleagues in regard to assessment of suitability for outbreak control activities.**

## Background

Avian Influenza (Bird Flu) is an infectious disease of birds, caused by type A strains of the influenza virus. In poultry, avian influenza viruses may cause two distinctly different forms of disease – one common and mild, the other rare and highly lethal.

In the mild form, signs of illness may be seen only as ruffled feathers, reduced egg production, or mild effects on the respiratory system. In contrast, the second highly pathogenic form is difficult to miss and is characterized by sudden onset of severe disease in affected birds/flocks, rapid contagion, and a mortality rate that can approach 100% within 48 hours.

Outbreaks of the highly pathogenic H5N1 type of avian influenza have been occurring since December 2003. These outbreaks of H5N1 Bird Flu began in south-east Asia in mid-2003, and have now spread to parts of Europe. They are the largest and most severe outbreaks of H5N1 on record.

Scientists are increasingly convinced that at least some migratory waterfowl are now carrying the H5N1 virus in its highly pathogenic form, sometimes over long distances, and introducing the virus to poultry flocks in areas that lie along their migratory routes.

Countries in Asia who have had outbreaks of this strain of avian influenza in poultry include the Republic of Korea, Vietnam, Japan, Thailand, Cambodia, the Lao People's Democratic Republic, Indonesia, China, and Malaysia. Of these, Japan, the Republic of Korea, and Malaysia have controlled their outbreaks and are now considered free of the disease.

Since the beginning of February 2005, 13 new countries have reported their first cases of H5N1 Bird Flu infection. The 13 countries, listed in order of reporting, are Iraq, Nigeria, Azerbaijan, Bulgaria, Greece, Italy, Slovenia, Iran, Austria, Germany, Egypt, India and France.

As a precautionary measure the European Commission has banned the importation of both live poultry and poultry products from affected countries into the European Union.

In February 2006 authorities in Germany announced detection of H5N1 avian influenza in a domestic cat. The cat was found on the northern island of Rügen. Since mid-February, more than 100 wild birds died on the island, and tests confirmed H5N1 infection in several. H5N1 infection has subsequently been confirmed in 2 more domestic cats and a stone marten in the same area of Germany. On April 7, 2006 H5N1 infection was confirmed in a wild swan found in Fyfe, Scotland.

## **Human Infection with Avian H5N1 Influenza Virus (Bird Flu)**

The spread of H5N1 to poultry in new areas is of concern as it increases opportunities for further human cases to occur. However, all evidence to date indicates that the H5N1 virus does not spread easily from birds to infect humans. There is very limited evidence of human-to-human transmission among any reported cases in Asia.

To date (April 2006) there have been 192 cases of human H5N1 infection, with a total of 109 deaths, reported to the World Health Organisation (WHO). Cases of human H5N1 infection and deaths have been confirmed in Vietnam (93 human cases, 42 deaths), Thailand (22 human cases, 14 deaths), Cambodia (6 human cases, 6 deaths), Indonesia (30 human cases, 23 deaths), China (16 human cases, 11 deaths), Iraq (2 human cases, 2 deaths), Turkey (12 human cases, 4 deaths), Egypt (4 human cases, 2 deaths), and Azerbaijan (7 human cases, 5 deaths). The majority of cases are thought to have had direct contact with infected poultry.

WHO continues to recommend that travellers to H5N1 affected areas should avoid contact with live animal markets and poultry farms, and any free-range or caged poultry. Large amounts of the virus are known to be excreted in the droppings from infected birds. Populations in affected countries are advised to avoid contact with dead migratory birds or wild birds showing signs of disease.

Direct contact with infected poultry, or surfaces and objects contaminated by their droppings, is considered the main route of human infection. There is no evidence that properly cooked poultry or poultry products can be a source of infection.

Human infection with avian influenza can cause flu like symptoms, i.e. cough, temperature, sore throat and coughing as well as diarrhoea. More commonly, a conjunctivitis, i.e. red watery itching painful eyes, with a purulent discharge will occur. Rarely, avian influenza may lead to serious respiratory complications and death.

### **Occupational Exposure**

There are a range of situations where workers may be exposed to avian influenza. These include those involved in initial handling and diagnosis, culling of birds, carcass disposal, and cleaning and disinfection of premises affected by avian influenza. The following is an example of occupational groups that may be exposed:

- Farmers and those handling wild or domestic birds
- Pet shop owners
- Veterinarians
- Poultry workers and cullers
- Department of Agriculture employees attending suspect bird carcasses

- Police service personnel
- Healthcare workers
- Transport workers

### **Protection of those involved in outbreak control and eradication activities**

The Avian Influenza Subcommittee of the Pandemic Influenza Expert Group in Ireland have stated that the aim must be to limit exposure of persons to outbreaks of infected avian influenza. A range of measures must also be taken to minimise the risk posed to those who will be required to work on outbreak control activities. The measures can be summarised as follows:

- Occupational health assessment of suitability for outbreak control activities
- Vaccination with seasonal influenza vaccine
- Good Hand hygiene
- Appropriate Personal Protective Equipment
- Instructions and training in PPE use.
- Use of oseltamivir as a prophylactic measure
- Surveillance and monitoring of workers
- Serological surveillance of exposed animal workers and veterinarians.
- Contacts should not visit other farms or unaffected agricultural locations with poultry or other birds to avoid spread of contaminated materials.

### **Occupational Surveillance**

This will be led and co-ordinated by the Public Health authorities. It will include identifying all those involved in outbreak control activities. Assess each worker's duties with regard to need for Oseltamivir chemoprophylaxis, and vaccinate with seasonal influenza vaccine if not already vaccinated. Each worker will be given information on avian influenza and provided with a digital thermometer for twice daily oral temperature readings. Daily occupational surveillance will gather information on symptoms, compliance with Oseltamivir, any side effects, and any difficulties with PPE compliance. All those under occupational surveillance need to be monitored daily during culling activities and for 7 days after last exposure. The worker's GP will be notified that the person is under occupational surveillance and what measures are being taken. Baseline serum sample (flu serology) and follow up sample 1-2 months later will be arranged.

## **Conclusion**

- The Faculty supports the measures for the control and eradication of avian influenza in Ireland as proposed by the Avian Influenza Subcommittee of the Pandemic Influenza Expert Group and the Department for Agriculture and Food.
- The Faculty acknowledges that whilst the risk of human infection is low it endorses the need to protect workers from exposure to the virus and the importance of effective planning, good hygiene practices, appropriate personal protective equipment and use of anti-viral medication as prophylaxis.
- The Faculty supports the need for occupational surveillance and follow-up as recommended by the Avian Influenza Subcommittee of the Pandemic Influenza Expert Group.
- The Faculty endorses the role of occupational health in supporting the contingency measures of the public health authorities and the Department for Agriculture and Food, including assessment for fitness to work, influenza vaccination and occupational exposure prevention and follow-up.

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## References and Additional Sources of Information

This position paper has been prepared using information contained in the following:

- Interim guidance on public health actions to be taken on notification of avian influenza in birds in Ireland - the Avian Influenza Subcommittee of the Pandemic Influenza Expert Group: [www.hpsc.ie](http://www.hpsc.ie)
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- DARD(NI) Avian Flu Information Link:  
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- DEFRA (UK) Avian Flu Information Link:  
<http://www.defra.gov.uk/animalh/diseases/notifyable/disease/ai/>
- Health Protection Agency (UK):  
[www.hpa.org.uk/infections/topics\\_az/influenza/avian/default.htm](http://www.hpa.org.uk/infections/topics_az/influenza/avian/default.htm)
- Communicable Disease Surveillance Centre (NI):  
<http://www.cdscni.org.uk/>
- DHSSPS (NI) Pandemic Influenza information link:  
<http://www.dhsspsni.gov.uk/index/phealth/pandemicflu.htm>
- Health and Safety Executive (UK):  
<http://www.hse.gov.uk>