World Society for the Protection of Animals

Avian Flu

This document is intended to act as a guide to the issues surrounding the current outbreak of avian influenza, and some advice on what can be done. Further and more specific information may be obtained from your state veterinary service. Should you suspect a bird of having avian influenza you should contact your state veterinary service or a veterinarian immediately and follow their advice.

www.wspa-international.org

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Introduction

Avian influenza is endemic in wild birds, but over the last 10 years outbreaks in poultry have increased dramatically, leading to the culling of an estimated 250 million birds worldwide. These outbreaks have included highly pathogenic strains and have also infected humans, killing over 200. It is accepted that the virus could evolve the ability to spread from human to human, possibly causing a pandemic.

There is evidence that mutations in the virus have been fostered by intensive broiler production. Keeping thousands of genetically uniform chickens, with reduced immunity, in crowded sheds in constant contact with their faeces provides a breeding ground for the virus to evolve.

International trade has also probably contributed to spreading bird flu round the world. Change in the poultry industry towards keeping birds in better conditions is urgent to improve the welfare of billions of chickens and to cut the risk to as many human lives.

1. What Is Avian Influenza?

1.1 Avian influenza

Avian influenza, often referred to as AI or commonly called bird flu, is a contagious virus normally only infecting birds, but with the ability occasionally to infect other animals, including humans. Bird flu can be categorised in two forms; a low pathogenic or mild form and a high pathogenic form which is more severe.

1.2 Low pathogenic and high pathogenic forms

Low pathogenic avian influenza (LPAI) is thought to have been around for centuries in wild bird populations. In both poultry and wild birds it causes only mild symptoms such as ruffled feathers and a drop in egg production. It can commonly go undetected.

When LPAI enters an intensive poultry population it is presented with positive conditions to mutate and evolve into a highly pathogenic form (HPAI). This is a much more dramatic disease causing severe illness and can kill 90-100% of a flock within 48 hours. It is HPAI which is of most concern.

1.3 Why is the current outbreak (H5N1) important?

The current outbreak of avian influenza concerns a strain with the name H5N1. The outbreak began in mid-2003 in South East Asia and is the largest and most severe outbreak on record. Despite the culling of over 250 million birds in an attempt to control it, the H5N1 virus is now considered endemic in parts of Indonesia, China, Egypt and Nigeria (FAO, 2007). H5N1 is one of the few avian influenza viruses which can be transmitted from birds to humans. H5N1 cannot currently be transmitted from human to human and is not easily transmitted from bird to human. It can however be lethal to both bird and human victims.

2. Who Does Avian Influenza Affect?

2.1 Wild birds

LPAI is a natural infection of waterfowl. It has few symptoms and causes few deaths. When this naturally circulating virus of wild birds enters intensive poultry populations it may evolve into an HPAI virus. HPAI rarely evolves in wild birds.

Wild birds may carry HPAI after exposure to infected poultry flocks and may be contributing to its spread in a small way (see 3.5 for other routes). HPAI causes the same symptoms in wild birds as in poultry (see 2.2) with a high and fast death rate. Both domestic and wild ducks are an exception, being particularly resistant to avian flu, and may carry the disease without showing symptoms.

2.2 Poultry

HPAI causes a number of symptoms in poultry. These include swelling of the head, purple/blue discoloration of the wattles and comb, dullness of skin or feathers, lack of appetite, respiratory distress, diarrhoea, and loss of egg production. Infection rates and mortality can be close to 100% within 48 hours. In rare circumstances HPAI can cause sudden death without other symptoms.

HPAI spreads through a poultry flock when birds have contact with infected faecal matter, or contact with fluid from the nasal passages, mouth or eyes of infected birds.

Transmission of HPAI between flocks is believed to be through movement of infected birds or contaminated people. This can include workers' boots and clothing, vehicles and dirty cages or egg crates which may be contaminated.

2.3 Humans

The large potential impact of the H5N1 virus on the human population is dependant on the virus evolving the ability to spread easily from person to person, causing a pandemic. The virus cannot currently do this as it is primarily a disease of birds. There is no doubt however that H5N1 can kill humans and should be taken very seriously. For transmission from bird to human to occur a person must have direct and prolonged contact with infected birds – for example handling, killing or plucking poultry. Many of the 208 deaths (FAO, December 2007) from H5N1 so far have been from people who share outdoor space, or live in close contact, with their poultry.

There is no evidence that H5N1 can be transmitted from the meat of properly cooked poultry or eggs. However, care should be always be taken when handling raw poultry to avoid cross contamination with other food that may not be cooked.

If it is necessary to handle sick birds, protective clothing which is either disposable or easily disinfected should be used. Sick birds should be isolated or humanely destroyed and dead birds should be placed in 2 strong plastic bags (the first one

tied and placed inside the other) and placed away from other animals. If a bird is suspected of having avian influenza the state veterinary service or other veterinarian must be informed.

2.4 Pets

Cats and dogs can both be infected with avian influenza though cases are rare. This is best avoided by keeping pets away from dead or ill birds, especially if there is a local outbreak.

3. How Can Avian Influenza Be Managed?

If you suspect any bird, wild or domesticated, of having avian influenza you must contact your state veterinary service or a veterinarian immediately and follow their advice.

3.1 Close observation

It is important that poultry owners and workers are extremely vigilant and report any disease outbreaks promptly. For an outbreak to be controlled it must be reported without delay to minimise further spread. Compensation should be paid to farmers for birds lost due to culling. This will encourage the prompt reporting of disease and increase the efficacy of culling in controlling the outbreak.

3.2 Biosecurity

All workers and visitors to farms must maintain maximum cleanliness for all boots, clothing and equipment which might be moved between flocks, sheds or farms. Visitors should be asked if they have been in contact with other poultry or birds in the previous 48 hours, and if so their visit should be refused or delayed. Consideration should be given to minimising the number of visitors to a farm, and reducing the need for people and equipment to move between flocks and farms.

Domestic ducks should have no contact with other domestic poultry as ducks may carry avian influenza with no symptoms. Contact between domestic poultry and wild birds should be kept to a minimum with the use of nets and barriers. In particular poultry should not be allowed access to water which could be used by wildfowl. Domestic poultry should only be fed inside as food outside may attract wild birds. These actions will prevent wild birds transmitting avian influenza to poultry as well as poultry passing it to wild birds.

High biosecurity should be on the minds of everyone in an area with a bird flu outbreak. If possible stay away from poultry and poultry farms. If contact with birds is necessary rigorous attention must be given to the cleaning of equipment and clothing as well as personal hygiene such as hand washing.

3.3 Culling methods

In the event of an outbreak of avian influenza the infected poultry, or those that have been in contact with them, must be rapidly and humanely culled to prevent the disease spreading further. The use of the most humane culling methods must be balanced against the risk to human health and welfare during an outbreak. The following methods are recommended by WSPA and the World Organisation for Animal Health (OIE) as humane ways in which to kill a large number of birds:

- gassing by a slow increase in CO_2 levels;
- gassing in a containerised gassing unit with argon and CO_2;
- use of a hand-held stunner designed for poultry slaughter, followed by bleeding;

- hire/purchase of a unit with its own generator where a conveyor loop system can be set up to dip the birds upside down into a high voltage electric bath (not widely available), followed by bleeding;
- anaesthetic can be injected into the heart of the birds by a veterinarian, or equally skilled person.

Neck pulling or dislocation/decapitation may be suitable for small flocks of birds when carried out by trained and careful operators, and when better methods are not available.

Regardless of the method chosen it is important that death of each bird is confirmed before disposal.

For further information see section 4: The Humane Slaughter Association.

3.4 Vaccination of poultry

The main method of controlling avian influenza, as recommended by the OIE, is the rapid culling of infected birds and other poultry which have been in contact with them. Where this is not possible vaccination of poultry can be useful. Vaccination in areas where avian influenza is endemic can protect healthy birds and reduce the virus excretion of sick birds. This will reduce the likelihood of the virus being passed to other birds and to humans. Vaccination could be particularly useful for pets and exotic breeds of birds kept in zoos, wildlife parks or private collections.

Only vaccines which allow infected birds to be differentiated from vaccinated birds should be used (DIVA vaccines). Vaccinated birds are still fit for consumption, though there may be international trade implications.

3.5 Reduce transport and trade

Though wild birds can carry avian influenza, the spread of H5N1 from China to Europe, Africa and the Middle East has followed main road and railway routes rather than bird migration routes. Commercial trade and transport of live poultry is an international business with birds travelling all over the world. The coming together of poultry from a variety of sources makes wet bird markets a particularly likely place to spread avian influenza and have it transported back to a large number of farms. Without reduction or control of poultry movements this spread is likely to continue. Countries such as Japan and South Korea have shown that strict control of domestic and international trade and transport in the event of an outbreak can reduce the chances of further cases of H5N1.

4. Further Information

World Health Organisation
http://www.who.int/csr/disease/avian_influenza/en/

Food and Agriculture Organisation
http://www.fao.org/avianflu/en

World Organisation for Animal Health (OIE)
http://www.oie.int/eng/info_ev/en_AI_avianinfluenza.htm

Bird Flu: A virus of our own hatching. Michael Greger 2006
http://birdflubook.com

The Role of the Intensive Poultry Production Industry in the Spread of Avian Influenza. CIWF 2007
www.ciwf.org.uk

The Humane Slaughter Association – On farm slaughter of poultry for disease control
http://www.hsa.org.uk/Resources/Publications/Technical%20Notes/disease%20control.pdf

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