

Avian Influenza

Overview

In the simplest term, avian influenza is an infection caused by avian (bird) influenza (flu) viruses. These influenza viruses occur naturally among birds. Wild birds worldwide carry the viruses in their intestines, but usually do not get sick from them. Avian influenza is highly contagious among birds and can make some domesticated birds, including chickens, ducks, and turkeys, very sick and kill them.

Infected birds shed influenza virus in their saliva, nasal secretions, and feces. Susceptible birds become infected when they have contact with contaminated secretions or excretions or with surfaces that are contaminated with secretions or excretions from infected birds. Infection with avian influenza viruses in domestic poultry causes high mortality. The highly pathogenic form spreads more rapidly through flocks of poultry. As per the assessment made by World Health Organisation (WHO)/FAO, this form may cause disease that affects multiple internal organs and has a mortality rate to the extent of 90-100% often within 48 hours.

Usually, avian influenza virus refers to influenza A viruses found chiefly in birds, but infections with these viruses can occur in humans. The risk from avian influenza is generally low to most people, because the viruses do not usually infect humans. However, confirmed cases of human infection from several subtypes of avian influenza infection have been reported since 1997. Most cases of avian influenza infection in humans have resulted from contact with infected poultry (e.g., domesticated chicken, ducks, and turkeys) or surfaces contaminated with secretion/excretions from infected birds. The spread of avian influenza viruses from one ill person to another has been reported very rarely, and has been limited.

During an outbreak of avian influenza among poultry, there is a possible risk to people who have contact with infected birds or surfaces that have been contaminated with secretions or excretions from infected birds. Symptoms of avian influenza in humans have ranged from typical human influenza-like symptoms (e.g., fever, cough, sore throat, and muscle aches) to eye infections, pneumonia, severe respiratory diseases (such as acute respiratory distress), and other severe and life-threatening complications. The symptoms of avian influenza may depend on which virus caused the infection.

Studies done in laboratories suggest that some of the prescription medicines approved, in limited cases, for treating avian influenza infection in humans. Additional research studies are required to demonstrate the effectiveness of these medicines.

Incidence of Avian Influenza and Human Infection

WHO had made an assessment on incidence of Avian Influenza and also the human infection¹
 The assessment highlights that as of 26 November 2007:

- There were 335 confirmed human cases of avian influenza A(H5N1) reported globally, of which 206 died;
 - More than 220 million chickens, ducks and birds have been culled to contain the virus;
 - Indonesia and Thailand had reported 138 human cases with 108 deaths have occurred. Thailand reported a total of 25 cases with 17 deaths during 2004-2006. No case has been reported in Thailand during 2007.
 - Since June 2005, Indonesia has investigated over 1000 suspected cases of avian influenza of which 113 cases were confirmed by laboratory diagnosis (Fig. 14.1). Of these, 91 cases died, giving a case fatality rate of 80%.
 - The age and sex distribution, in Indonesia, is given in Figure. 14.2.
 - All confirmed cases of avian influenza were in persons less than 46 years of age, except for one 67-year-old female (Fig. 3). Children under 14 years of age accounted for a large proportion of cases (29%). Among male patients between the ages of 15 and 24 years, 50% were employed in poultry-related occupations. The majority of cases had direct or indirect exposure to a possible source.
- § The source of exposure could not be determined in 19% of cases despite thorough investigations. The presence of the avian influenza virus in the locality of some cases suggests that environmental contamination may also be a factor contributing to human infection.

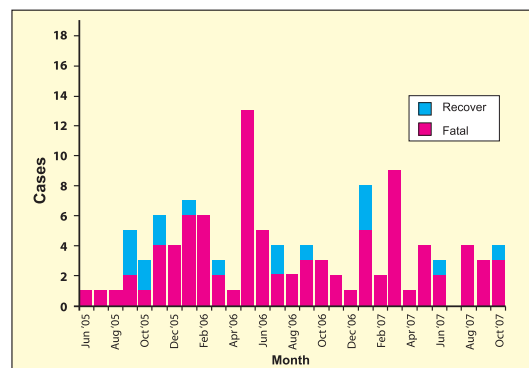


Figure 14. 1: Human avian influenza A/H5N1 cases on onset – Indonesia (N=113) Source: WHO Newsletter, December 2007, Volume 4, Issue 4.

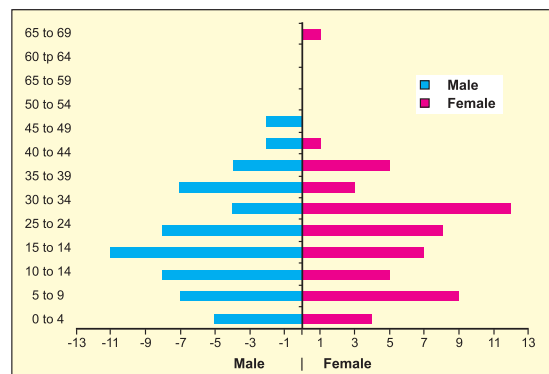


Figure 14. 2: Age and gender distribution of human avian influenza A/H5N1 cases on onset – Indonesia (N=113) Source: WHO Newsletter, December 2007, Volume 4, Issue 4

Incidence of Avian Influenza in South Asia in 2007

Bangladesh

As per WHO assessment, in 2007, 60 farms spread over 20 districts including Dhaka had confirmed outbreaks of avian influenza H5N1 among poultry. A total of 262,000 birds were culled. About 4 million people are directly or indirectly associated with poultry farming in Bangladesh. Surveillance activities among poultry were increased. No human case was reported in 2007. However, in January

2008, the Ministry of Health, Bangladesh reported first case of human infection with H5N1 avian influenza. The case was identified retrospectively as part of seasonal surveillance activities run by the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR, B).



Figure 14. 3: Districts affected by Avian Influenza in Bangladesh ²

India

Govt of India notified an outbreak of H5N1 virus infection in poultry in the last week of July 2007, in the East Imphal District of Manipur. It was successfully brought under control and post-outbreak surveillance showed no traces of H5N1 infection in the outbreak zone.

In a final report prepared by Govt of India on 7 November 2007, India informed that the culling of poultry was done on 2 August 2007. No outbreak has occurred exposure to a possible source. The source of exposure could not be determined in 19% of cases despite thorough investigations. The presence of the avian influenza virus in the locality of some cases suggests that environmental contamination may also be a factor contributing to human infection. The first outbreak was reported from Maharashtra in 2006. Since then, Gujarat, Manipur and West Bengal were also reported having the highly dangerous H5N1 outbreaks. However, for India, H5N1 virus has not infected human being yet.

Farmers were given compensation more than what farmers received during all the four previous outbreaks. The earlier outbreaks saw farmers receive Rs 40 per egg-laying adult chicken and ducks, Rs 30 for those used for meat and Rs 10 per chick. Under the new compensation package announced in 2007, ducks and geese fetched Rs 75 while turkey fetched Rs 160. The compensation amount for egg-laying chicken was increased by Rs 10.

Preparedness Measures for Avian Influenza in South Asia in 2007

Mass level awareness was built in South Asia by the respective governments. All kinds of precautionary measures were taken including culling operations in the affected as well as potential areas. WHO and FAO provided technical support to contain Avian Influenza in the region.

Some of the important steps taken up by WHO/other related agencies¹ are listed below:

National Institute of Virology, Pune, India designated as WHO H5 Reference Laboratory. The National Institute of Virology, Indian Council of Medical Research, Pune, India (NIV) was designated as the first WHO Influenza A/H5 Reference Laboratory in the South-East Asia Region. With this designation the global number of H5 Reference Laboratories has increased to 10, five of which are also the WHO Collaborating Centres for Influenza. The terms of reference of H5 Reference Laboratories include provision of diagnostic referral services that support surveillance, epidemiological tracing, and vaccine development as well as training the human resource to enhance their skills.

Avian Influenza - What You Need to know and Do

WHO brought out technical manual towards awareness building, in the local languages, on – what you need to know and do in case of avian influenza. It highlights how it is present in droppings, respiratory, secretions and blood of the infected birds. Human beings get accidentally infected. In adults, most infections have occurred among those who have removed feathers or slaughtered infected chickens, or children playing around sick or dying chickens.

Preventing Bird Flu: Questions and Answers

I don't have soap or water, how can I make my hands free of bird flu virus? - Use a 70% alcohol – based hand rub solution. Use sufficient quantity to completely cover your hands. Wash your hands using running water and soap as soon as these become available. Please note that alcohol rub only destroys germs. It does not clean the hands. Hand washing does both. How can I protect myself from a patient of bird flu? Stay away from the patient while coughing/sneezing. If possible, cover your nose with tissue paper or a piece of cloth.

Preventing Bird Flu: Precautions poultry farm workers should take

Always keep chickens “roofed in” so that they do not come in contact with wild or migratory birds. Do not allow any chickens or eggs to be taken out from poultry farm. Destroy all eggs. Do not carry chickens from an infected poultry farm to your home for cooking. Disinfect boots or shoes before entering or leaving a poultry farm.

A Manual for Improving Biosecurity in the Food Supply Chain: Focus on Live Animal Markets

Preparation of following Guidelines:

- Pandemic Preparedness
- Laboratory Diagnosis & Biosafety
- Surveillance
- Food safety
- Preparing Influenza Pandemic Preparedness Plans: A Step-by-Step Approach
- Establishment and use of the Stockpile of Oseltamivir

REFERENCES

1. Communicable Diseases Newsletter, WHO Regional Office for South East Asia, New Delhi, Newsletter, December 2007, Volume 4, Issue 4.
2. Ministry of Health, Govt of Bangladesh