Bird Flu: A Lethal Threat

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In early January 2009, bird flu resurfaced with the death of a Chinese woman who was infected with the H5N1 strain of avian influenza in the eastern Shandong province in China. Avian influenza is a deadly virus that can pose serious health concerns. Apart from spelling economic disaster, the bird flu crisis poses a grave threat to national security. The frequent outbreak of bird flu pandemic in Asia and India is alarming.

In early January 2009, bird flu resurfaced with the death of a Chinese woman who was infected with the H5N1 strain of avian influenza in the eastern Shandong province in China. Only two weeks before this, the Chinese media had announced the death of a 19-year old woman from the disease. Reportedly, the woman died after she came into contact with poultry in the market. This is the second reported death caused by bird flu in China since the beginning of the year. This deadly pandemic, also known as avian influenza is the worst of its kind in medical history. It has erupted several times in Asia since 2003 having caused 247 human deaths and it has led to culation of a large number of poultry.

Avian influenza is a highly contagious viral infection, which can affect all bird species. However, the poultry is particularly susceptible to it. There are two types of influenza viruses that infect poultry – Highly Pathogenic Avian Influenza (HPAI) and Low Pathogenic Avian Influenza (LPAI). HPAI is the more virulent form of influenza infecting the poultry with a flock mortality rate of almost 100 percent. The clinical symptoms of HPAI infection may vary from sudden death with little or no overt symptoms to a more characteristic disease with excessive swelling of sinus tissues, swelling of the head, skin becoming loose, coughing, sneezing and diarrhoea. Bird flu viruses are transmitted through primary and secondary methods. Primary transmissions are mainly through migratory birds like waterfowls, gulls and shorebirds that act as potential carriers of bird flu viruses. Secondary transmissions are mainly by mechanical transfer of infected faeces, in which viruses may be present in high concentrations.

In India, bird flu outbreaks have occurred on eleven occasions since 2006. Though there has been no human death reported, the pandemic has significantly hit the poultry industry and has generated serious concerns within India. The latest outbreak of bird flu virus was reported early January 2009 in West Bengal. West Bengal officials confirmed that they had begun culling about 60,000 poultry. This was the fourth outbreak of the deadly virus in the State since 2007. The third outbreak which

resulted in the culling of 17,000 poultry was done barely a fortnight ago in December 2008. In November and December 2008, H5N1 a virulent strain of bird flu was detected in backyard and commercial poultry in several districts of Assam. To combat the spread of bird flu infection, nearly 4.3 lakh birds were culled. Earlier, in April 2008, the deadly H5N1 strains infected backyard poultry in Tripura that led to the death of 3000 domestic birds and at the same time several dogs and jackals which consumed the affected birds were also found dead. Around 20,000 birds were culled as part of the operation. In July 2007, the highly pathogenic Qinghai strains of bird flu, capable of infecting humans, were detected in Manipur.

The frequent outbreak of bird flu pandemic in Asia and India is alarming. Poultry is a vital source of food and income security in Asia, which is demonstrated by the fact that the region has 200 million small farmers, who have between 10 to 100 birds each in their farms. In India, the poultry population is very large (about 150 million). The high rate of fatality of avian influenza is a serious concern for the authorities. Many people have been subject to economic insecurity because of the culling operations undertaken to contain the spread of the virus. In many cases, people have not been compensated adequately. Many neighbouring countries like Bhutan have stopped importing poultry from India because of fears of the bird flu virus. As a consequence the revenue that is derived from poultry export by India has been severely affected.

Apart from spelling economic disaster, the bird flu crisis poses a grave threat to national security. It is important to note that all the above mentioned affected states in India share international borders with countries like Bangladesh, Myanmar, Pakistan that have all been affected by avian influenza. In China, bird flu outbreaks have also been incessant. India remains vulnerable to bird flu virus outbreaks because of the geographical proximity with its neighbouring countries. Porous borders are also another source through which infected poultry can be smuggled into India. Transmission can take place because of the trucks that are transferring poultry and from farm to farm contaminated equipments and clothing and shoes. In fact, the Qinghai strains of bird flu detected in Manipur in July 2007 are believed to have originated from China's mid-western province of Qinghai. The natural habitat is attractive centre for many migratory birds that migrate to India from the neighbouring areas particularly in the winters. At present, with thousands of migratory birds flocking to Dharamshala region, there are rising concerns of an outbreak of the deadly H5N1 virus. Reports from the United Nations indicate that due to continuous circulation of the highly pathogenic H5N1 strains in Bangladesh, the virus may have got entrenched in the Indo-Gangetic plains of India and Bangladesh. This exposes India to significant risks of the fatal avian influenza virus.

Avian influenza is a deadly virus that can pose serious health concerns. It can swap or 'reassort' genetic materials and merge, thereby resulting in a new subtype different from the parent viruses. These highly pathogenic viruses crossbred with human influenza, would be transmissible from humans to humans by airborne droplets, driven by coughs and sneezes resulting in a human pandemic. At present, no vaccines have been developed to combat HPAI. Even if vaccines were developed, it would take months to produce sufficient doses to protect the entire population of India. In the absence of an effective vaccine to combat avian flu, there is an extremely high possibility of human pandemic in South Asia.

Despite the lethality of avian influenza, India has been able to contain the outbreaks so far. However, the recurrence of the pandemic (four outbreaks of bird flu among poultry in 14 out of the West Bengal's 19 districts in less than a year) is a cause for concern. Another is that within West Bengal, ducks are not culled. "Ducks have become reservoirs of the virus because they carry it without developing symptoms or falling sick. Infected ducks pose a threat not only to other animals but also humans," said N.K. Ganguly, distinguished biotechnology fellow, Government of India, and scientific adviser to the Ministry of Health.

The task of eradicating H5N1 virus is a difficult and an expensive task. However, avian flu can be contained if the poultry industry is adequately overhauled and new surveillance systems are placed to detect bird flu outbreaks. Constant alert and hard work could play a vital role in combating avian influenza. This is one battle that India and the rest of Asia cannot afford to lose.

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