



Bird Flu: Avian Influenza

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Why in News

Recently, the **first human death** was recorded **due to Bird Flu** in India this Year. This was caused by **H5N1 Avian Influenza Virus**.

Earlier, **China** reported the **first human infection of H10N3 bird flu**.

Key Points

- **About:**
 - A disease caused by **avian influenza (AI) Type A viruses** found naturally in wild birds worldwide.
 - AI viruses are broadly classified as **low pathogenic AI (LPAI)** and **highly pathogenic AI (HPAI) viruses**, based on their **pathogenicity**. H5N1 strains come under HPAI viruses.
 - The virus **can infect domestic poultry** including chickens, ducks, turkeys and there have been reports of H5N1 infection among **pigs, cats, and even tigers** in Thailand zoos.
- **Impact:**
 - Outbreaks can lead to **devastating consequences for the country**, particularly the **poultry industry**.
 - Farmers might experience **a high level of mortality in their flocks**, with **rates often around 50%**.
- **Infection in Humans:**
 - The most common route of virus transmission is **direct contact with infected birds**, either dead or alive, or contact with contaminated surfaces or air near the infected poultry.
 - **Human-to-human transmission** of the H5N1 virus **is very rare**.
 - **Children and adults below 40** were seen to be the most affected and mortality was high in 10-19 years olds.

- **Symptoms in Humans:**
 - Range from **mild to severe influenza-like illnesses** such as fever, cough, sore throat, muscle aches, nausea, abdominal pain, diarrhea, vomiting.
 - People can also develop **severe respiratory illness** (e.g., difficulty breathing, **pneumonia**, **acute respiratory distress**, viral pneumonia) and altered mental status, seizures etc.
- **Prevention and Eradication:**
 - Strict **biosecurity measures and good hygiene** are essential in protecting against disease outbreaks.
 - If the infection is detected in animals, **a policy of culling infected and contact animals is normally used** in an effort to rapidly contain, control and eradicate the disease.
 - **WHO's** global laboratory system, the **Global Influenza Surveillance and Response System (GISRS)**, identifies and monitors strains of circulating influenza viruses, and provides advice to countries on their risk to human health and available treatment or control measures.
- **Status of Bird Flu in India:**
 - Fresh cases of bird flu were reported in different states of India between **December 2020-January 2021** causing alarm across the country.
 - Previously **in 2019, India was declared free from Avian Influenza (H5N1)**, which had also been notified to the **World Organization for Animal Health (OIE)**.
 - The OIE is an intergovernmental organisation responsible for improving animal health worldwide. It is headquartered in Paris, France.

Types of Influenza Virus

There are four types of influenza viruses: **influenza A, B, C, and D**

- **Influenza A and B** are the two types of influenza that cause epidemic seasonal infections nearly every year.
- **Influenza C mainly occurs in humans**, but has been known to also occur in dogs and pigs.
- **Influenza D is found mainly in cattle**. It's not known to infect or cause illness in humans yet.

Avian influenza Type A viruses

- Type A viruses are classified based on two proteins on their surfaces – **Hemagglutinin (HA) and Neuraminidase (NA)**. There are about **18 HA subtypes and 11 NA subtypes**.
- Several combinations of these two proteins are possible e.g., **H5N1, H7N2, H9N6, H17N10, H18N11 etc.**
- All known subtypes of influenza A viruses **can infect birds**, except subtypes **H17N10 and H18N11**, which have only been found in **bats**.

Way Forward

- There is a need to enhance **monitoring of wild bird and animal disease** in our environment to act as **an early warning system** of change/arrival of potential diseases.
- There is a need for **a well-designed study to screen poultry and domestic waterfowl** for low pathogenic viruses.
- A study found that H5N1 outbreak occurrence was higher with greater proximity specifically to lakes, rivers, and coastal wetlands, by blocking the **mixed-use of surface water** by domestic poultry and wild waterfowl, cycling of Avian Influenza can be interrupted.
- The emphasis should be on monitoring multiple waterbird sites of local, national, and international importance.

Source: IE