



CURRENT AFFAIRS



Argasia Education PVT. Ltd. (GST NO.-09AAPCAI478E1ZH)
Address: Basement C59 Noida, opposite to Priyagold Building gate, Sector 02,
Pocket I, Noida, Uttar Pradesh, 201301, CONTACT NO:-8448440231

Date - 19 June 2024

“IS H5N1 THREAT TO HUMANS?”

THIS ARTICLE COVERS “DAILY CURRENT AFFAIRS” AND THE TOPIC DETAILS OF “IS H5N1 THREAT TO HUMANS?”. THIS TOPIC IS RELEVANT TO THE “SCIENCE AND TECHNOLOGY” SECTION OF THE UPSC—CSE EXAM.

WHY IN THE NEWS?

(HPAI) H5N1 strain, the highly pathogenic avian influenza, has affected cattle in multiple states across the U.S. Recently, three cases of human infection among dairy farm workers have been reported for the first time. This development has raised concerns about the potential for broader virus transmission from cattle to humans. In Kerala, specifically in the districts of Alappuzha, Kottayam, and Pathanamthitta, where water bodies, migratory birds, fowl, and integrated farms are part of the ecosystem, there have been 19 reported H5N1 outbreaks since April. Additionally, a significant number of crows have died in Alappuzha, and subsequent testing confirmed the presence of the H5N1 virus in their carcasses, prompting concerns about the potential widespread dissemination of the virus.

ABOUT H5N1 VIRUS:

The H5N1 virus is a subtype of influenza A that primarily infects birds, causing avian influenza or “bird flu.” It can also infect mammals, including humans, although this is relatively rare. The virus is highly infectious among birds and can spread rapidly through poultry flocks and among wild birds.

SYMPTOMS:

- Symptoms of H5N1 typically resemble those of influenza A, encompassing respiratory difficulties, **fever, cough, sore throat, and pneumonia, which are severe in individuals with weaker immune systems.**
- In the United States, an unusual symptom reported in a farm worker infected with H5N1 was **conjunctivitis**, also known as pink eye.
- **The Centers for Disease Control and Prevention (CDC)** issued a health advisory urging clinicians to consider the possibility of H5N1 infection in patients presenting with respiratory illness or conjunctivitis, especially if they have had contact with livestock or dead birds. Early identification and containment are critical to prevent widespread transmission of the virus.

- In Kerala, where outbreaks have primarily affected poultry, containment strategies have focused on the mass culling of birds within affected areas.
- However, the recent mass deaths of crows have raised concerns that the infection may have spread beyond current surveillance zones.
- Ongoing surveillance involves testing environmental samples such as water and bird faeces, as well as samples from individuals with influenza-like illness, within designated surveillance areas.
- Residents with livestock and birds are advised to wear masks, and the antiviral medication **Tamiflu** is being administered prophylactically to individuals in areas where H5N1 cases have been confirmed.

RISK TO HUMAN HEALTH:

- Since its emergence in 1996, H5N1 has led to the widespread culling of billions of wild birds and domestic poultry. The virus has also demonstrated the ability to infect around 26 mammalian species, particularly cattle, and there is now emerging evidence of its potential to infect humans. This has heightened concerns that H5N1 could trigger the next global pandemic.
- Of particular worry is the recent **herd-to-herd transmission of H5N1 observed** across 12 states in the U.S., with detections in raw milk and milking machines. Scientists note that the virus currently lacks mutations that would enhance its ability to spread efficiently between humans, thus keeping the risk to human health relatively low.
- However, the rapid evolution potential of influenza viruses and the extensive geographic spread of H5N1 indicate a likelihood of increased human infections in the future.
- The virus may be transmitted from birds or animals to humans interacting closely without adequate personal protection.
- A World Health Organization (WHO) Report stated that nearly 900 human cases of H5N1 have been reported from 23 countries between 2003 and April 1, 2024, with more than half resulting in fatalities.
- While the current risk of human infections from H5N1 is considered low, this risk could escalate rapidly if the virus spreads to additional animals, particularly **cows or domestic rodents**, which have closer contact with humans.
- In districts like Alappuzha, where **waterfowl, chickens, dairy cows, and humans share the same environment**, the potential for human infections should be recognised as significant.

PRECAUTION NEEDED:

- It is important for individuals to avoid unprotected contact with infected birds or animals, as well as their contaminated environments. Those who suspect exposure to an environment possibly contaminated with H5N1 should monitor themselves for new respiratory symptoms, including conjunctivitis, for a period of 10 days and seek medical advice promptly.

- To minimise the risk of food-borne transmission of H5N1, it is advisable to consume only pasteurised milk and ensure that poultry meat and eggs are thoroughly cooked.
- The Lancet emphasised the necessity for a strong and coordinated response to H5N1. It highlighted the concept of 'One Health', which integrates human, animal, and environmental health, often acknowledged but not consistently prioritised or operationalised.
- In Kerala, however, '**One Health**' has been extended beyond theoretical frameworks. It is currently being implemented under the World Bank-supported 'Rebuild Kerala' initiative in four districts—Alappuzha, Pathanamthitta, Kottayam, and Idukki.
- This initiative has established a community-based disease surveillance network involving 250,000 trained volunteers in the 'One Health' approach. These volunteers are tasked with reporting any unusual incidents or animal/bird deaths in their communities, enabling early warning and swift implementation of preventive or control measures.

WAY FORWARD:

- **Vaccination:** Researchers are exploring the use of Covid jab technology-based vaccines to manage H5N1 cases. These vaccines could potentially help to prevent viral spreading and reduce the severity of symptoms in infected individuals.
- **Public Health Surveillance:** The Centers for Disease Control and Prevention (CDC) closely monitors the situation, using its flu surveillance systems to track H5N1 activity in people. This includes monitoring for cases in the United States and working with states to track people with animal exposures.
- **Protective Actions:** People who work with infected animals should take additional precautions to avoid infection. This includes wearing protective equipment and following proper hygiene practices.
- **Heat Treatment of Raw Milk:** Heat treatment of raw milk can significantly reduce the levels of infectious H5N1 virus. Standard bulk pasteurization of 30 minutes can eliminate the virus, while heating at 72°C for five seconds can also reduce the virus levels significantly.
- **Global Coordination:** The World Health Organization (WHO) is actively monitoring the situation and working with countries to Avoid the pandemic. This includes providing guidance on public health measures and coordinating international efforts to contain outbreaks.
- **Research and Development:** Scientists are conducting research to better understand the virus and its potential to mutate and adapt to new environments. This includes studying the virus's ability to spread through the air and its potential to cause severe illness in humans.

PRELIMS BASED QUESTION:

Q.Consider the following statement:

1. H5N1 Virus is a zoonotic.

2. Scientists have developed a vaccine against bird flu

Which of the following is/are correct?

1. 1 only
2. 2 only
3. Both 1 and 2
4. Neither 1 nor 2

Answer: A

MAINS BASED QUESTION:

Q. How is the world prepared against viral disease? Discuss measures needed to work at the global level.

Vishal Yadav



PLUTUS
IAS