

CSB IAS ACADEMY

TOPIC OF THE DAY (DATE: 14.09.2023)

OUTBREAK OF NIPAH VIRUS IN INDIA

WHY IN NEWS?

A new outbreak of the Nipah virus has been reported in Kozhikode District of Kerala and Nipah Cases rises to 5.

NIPAH VIRUS

- The Nipah virus was **first identified in 1998 during an outbreak in Malaysia and Singapore**. The virus gets its name from the Malaysian village of Sungai Nipah, where one of the first major outbreaks occurred.
- It is classified as a **zoonotic virus, meaning it can be transmitted from animals to humans**.
- The **natural reservoir hosts of Nipah virus are fruit bats (Pteropus species)**, which do not typically show symptoms of the disease but can shed the virus in their urine, saliva, and faeces.
- Human infections often occur through the consumption of contaminated fruit or close contact with infected animals.

NIPAH VIRUS IN INDIA

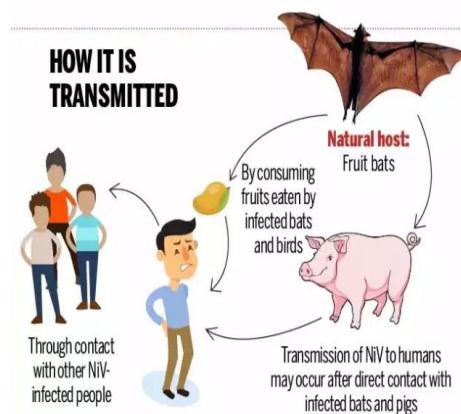
- The year **2001 saw the first outbreak of Nipah Virus in Siliguri, India** followed by the 2007 outbreak in Nadia of West Bengal.
- The 2018 outbreak of Kerala was declared over soon after it was localized in Kozhikode and Malappuram districts of Kerala.
- Kerala reported Nipah outbreaks earlier once in 2018 and some isolated cases in 2019 and 2021. In 2018, 17 of the 18 patients died.

Symptoms of Nipah Virus Infection

- Nipah Virus is usually associated with *inflammation of the brain due to which several days of fever can often lead to a state of confusion, disorientation and even persistent drowsiness*.
- Some common signs and symptoms of NiV are **drowsiness, dizziness, nausea, fever, headache and mental issues such as confusion**.

Transmission

- According to the World Health Organization (WHO), the **Nipah virus is caused by fruit bats** and is potentially fatal to humans as well as animals
- The disease spreads through **fruit bats or 'flying foxes,'** of the genus Pteropus, who are natural reservoir hosts of the Nipah and Hendra viruses.
- The virus is present in bat urine and potentially, bat faeces, saliva, and birthing fluids.
- The virus is transmitted to people from animals and can also be passed on through contaminated food or directly from person to person.
- **Human-to-human transmission of the Nipah virus** has also been reported among family and caregivers of infected patients.



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Why have the 5 cases led to alarms ringing?

- It is essential to detect the cases early and prevent further spread. This is because the **Case Fatality Ratio** — proportion of deaths among those who test positive for the infection — is very high for Nipah.
- The **CFRs in the 2001 and 2007 outbreaks in West Bengal were 68 per cent and 100 per cent respectively**. In the case of the 2018 outbreak in Kerala, the **CFR stood at 91 per cent** with two of the infected persons surviving. To compare, **the CFR of COVID-19 in India at present is around 1.2 per cent**.

Nipah virus incubation period

- As per the WHO, the incubation period (interval from infection to the onset of symptoms) is believed to **range from 4 to 14 days**. However, an incubation period as long as 45 days has been reported.
- The **case fatality rate is estimated at 40% to 75%**. This rate can vary by outbreak depending on local capabilities for epidemiological surveillance and clinical management.

Treatment of Nipah Virus Infection

- There is **no specific cure or antiviral medication** approved for the treatment of Nipah virus infection.
- The primary approach to managing Nipah virus infection is providing supportive care to patients.
- This include Maintain hydration and electrolyte balance. In severe cases, patients may require mechanical ventilation to assist with Breathing. Medications may be used to alleviate specific symptoms such as fever, pain, and nausea.

EPIDEMIC vs PANDEMIC vs ENDEMIC

EPIDEMIC - It is the regional outbreak of an illness that spreads unexpectedly. Epidemics are characterized by rapid spread of the specific disease across a large number of people within a short period of time.

Examples: Zika virus, Chikungunya, Dengue

PANDEMIC - An epidemic that has spread across countries and continents — the worldwide spread of a new disease. Uncontrollable/uncontainable

Examples: COVID-19, SARS, Spanish Flu.

ENDEMIC - The term endemic refers to the constant presence and/or usual prevalence of a disease or infectious agent in a population within a geographic area.

Examples: Chickenpox (UK), Malaria (India).

WHAT IS A ZONOTIC DISEASE?

- A zoonotic disease is a disease or infection that can **be transmitted naturally from vertebrate animals to humans** or from humans to vertebrate animals. More than **60% of human pathogens are zoonotic in origin**. This includes a wide variety of bacteria, viruses, fungi, protozoa, parasites, and other pathogens.

EXAMPLES: Zoonotic influenza, Plague, Rabies, Brucellosis, Zika Virus

ONE HEALTH APPROACH

- WHO formed a **One Health Initiative** to integrate **work on human, animal and environmental health across the Organization**. WHO is also working with the **Food and Agriculture Organization of the United Nations (FAO), the United Nations Environment Programme (UNEP) and the World Organisation for Animal Health (WOAH) as a One Health Quadripartite**.
- One Health involves the **public health, veterinary and environmental sectors**. The One Health approach is particularly relevant for **food and water safety, nutrition, the control of zoonoses (diseases that can spread between animals and humans, such as flu, rabies and Rift Valley fever)**, pollution management, and combatting antimicrobial resistance (the emergence of microbes that are resistant to antibiotic therapy).