

# Nipah Virus (Niv) Infection: A Systematic Review



Mr Vijayreddy Vandali<sup>\*1</sup> and Mrs Rekha B Biradar<sup>2</sup>

<sup>1</sup>Associate Professor, S.N.D. College of Nursing, Yeola, Maharashtra, India

<sup>2</sup>Community Health Officer, Karnataka, India

Submission: May 23, 2018; Published: May 30, 2018

\*Corresponding author: Mr. Vijayreddy Vandali, Associate Professor, S.N.D. College of Nursing, Yeola, Maharashtra, India, Email: vijay.sndcon@gmail.com

## Abstract

"Nipah Virus (NiV) infection is an emerging zoonotic disease that causes severe disease in animals and humans. It was first identified in Kampong Sungai Nipah, Malaysia in 1998". Zoonosis means a disease that can be transmitted to humans from animals. The natural host of the virus is fruit bats of the Pteropodidae Family, Pteropus genus (fruit-eating species), according to WHO.

**Mode of Spread:** Spread of Nipah virus takes place through direct contact with infected bats, pigs, or from other NiV-infected people.

**Symptoms:** Infection with Nipah virus is associated with encephalitis. 'An infected person shows symptoms of fever and headache within three-14 days of exposure an Incubation period of five to 14 days'. More than 50% of the patients faced a reduced level of consciousness and prominent brain-stem dysfunction. Kerala's Kozhikode is on high alert as a deadly virus called Nipah claimed approximately ten lives in the state. The fast-spreading virus Nipah reported has a high mortality rate of 70%.

**Treatment for Nipah Virus:** According to WHO, there is no particular vaccine currently available and NiV-infected patients are currently limited to supportive care only [1,2].

**Preventive Measures Includes:** Focus on immediate eradication by mass culling of infected and in-contact pigs. After culling, the burial sites are disinfected with chlorinated lime. Use sodium hypochlorite to disinfect the contaminated areas and equipment and strict ban on transporting pigs within the countries affected areas, a temporary ban on pig production in the affected part of the country.

**Keywords:** Nipah Virus; WHO; India; Prevention.

## Introduction

Nipah virus (NiV) infection is a newly emerging zoonosis that causes severe disease in both animals and humans. The natural host of the virus are fruit bats of the Pteropodidae Family, Pteropus genus. NiV was first identified in Kampong Sungai Nipah, Malaysia in 1998. On this situation, pigs were the intermediate hosts.

And in subsequent NiV outbreaks, there were no intermediate hosts. In Bangladesh in 2004 (Figure 1). NIPAH VIRUS infection in humans has a wide range of clinical manifestations, from asymptomatic infection to acute respiratory syndrome including fatal encephalitis. NiV can cause disease in pigs and domestic animals<sup>1</sup>.

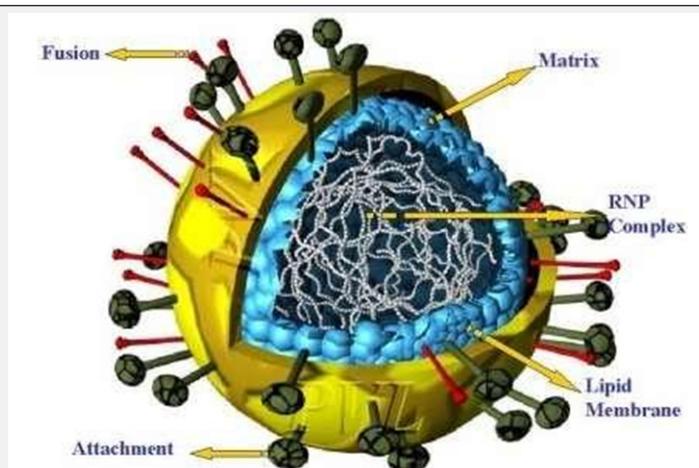


Figure 1: Nipah virus (NiV).

**Nipah Virus**

Nipah virus infection is an emerging zoonosis that causes severe disease in humans and animals. Zoonosis means a disease which transmit to humans from animals. The natural host of the

virus is fruit bats of the Pteropodidae Family, Pteropus genus (fruit-eating species), according to WHO.

**Mode of Spread:** Transmission of Nipah virus takes place through direct contact with infected bats, pigs, or from other NiV-infected people (Figures 2 & 3).

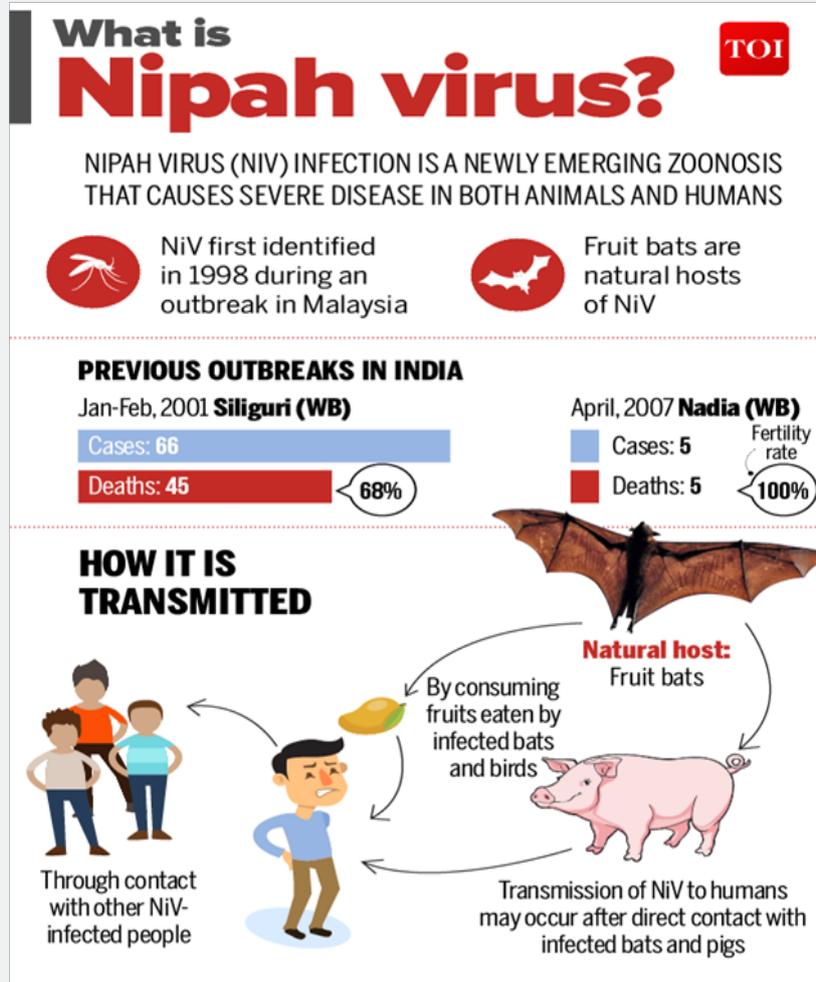


Figure 2: shows mode of disease spread. Credit: Times of India.

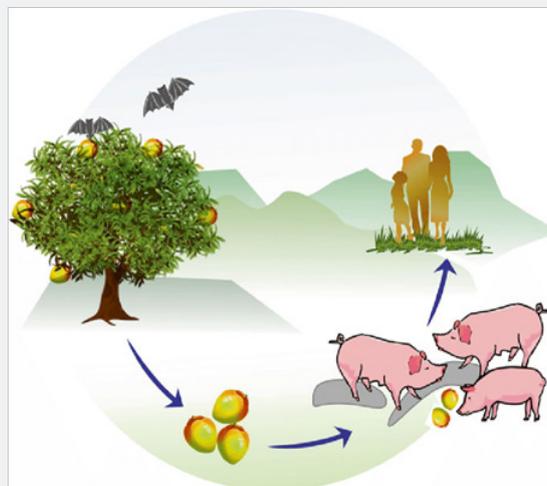


Figure 3: Nipah virus transmission cycle.

**Symptoms of Nipah Virus Infection**

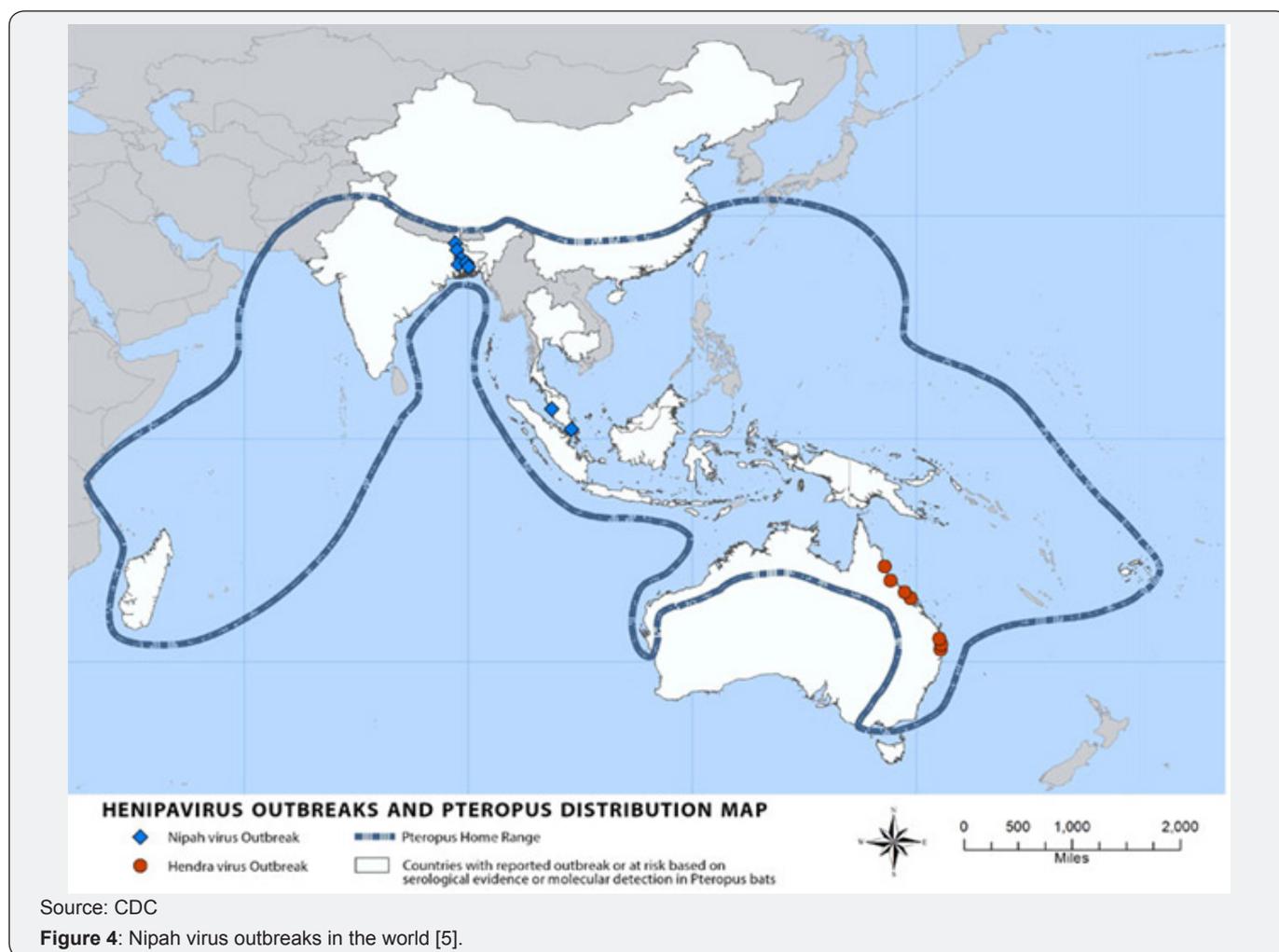
- a. According to Centers for Disease Control and Prevention
- b. Infection with Nipah virus is associated with encephalitis.
- c. An infected client explore the symptoms of fever and headache within three-14 days of exposure an Incubation period of five to 14 days.
- d. Important signs are fever, headache, dizziness and vomiting, followed by drowsiness, disorientation and mental confusion.
- e. More than 50% of the clients faced a reduced level of consciousness and brain dysfunction.
- f. Some clients may have a respiratory illness.

- g. Almost half of the patients showing severe neurological signs.

**When Nipah Virus was First Identified?:** Nipah virus was first identified in Kampong Sungai Nipah, Malaysia in 1998.

**Nipah Virus first Incidence**

- a. In India, Nipah Virus affected the humans without any involvement of pigs. The first outbreak was observed in Siliguri, West Bengal in 2001.
- b. The second incident recorded in Nadia district at West Bengal in 2007, India.
- c. According to WHO the virus claimed over 300 lives across Malaysia, Singapore, Bangladesh and India between 1998 and 2008 (Figure 4).

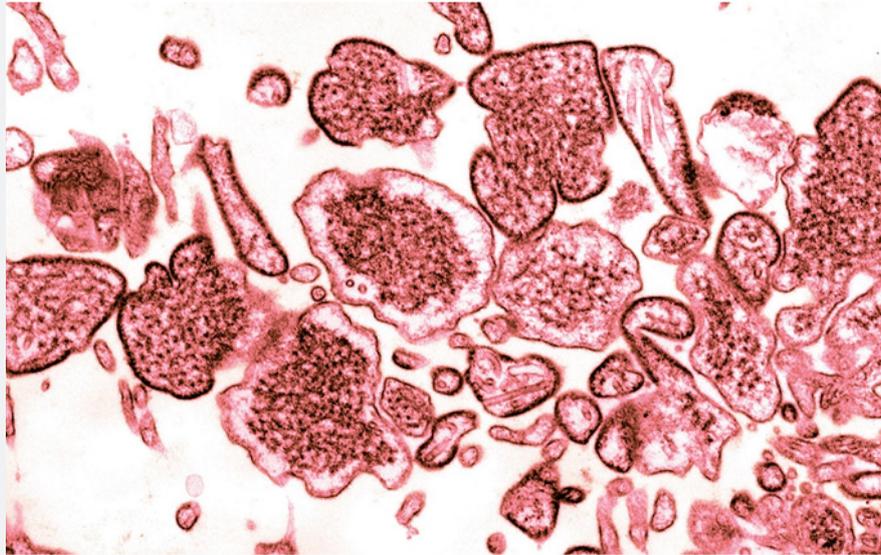


**Nipah Virus Infection across the Globe!**

- a. According to a 2013 ICMR.
- b. Bangladesh recorded several Nipah outbreaks in humans almost every year from 2001 to 2013.
- c. The virus has been detected in Cambodia, Thailand,

Indonesia and Madagascar in Southern Africa and Ghana in West Africa on fruit bats or bats seropositive to NiV antibodies.

**Diagnosis:** The disease is difficult to diagnose based on clinical signs alone, confirmation can be made through prescribed laboratory tests (OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals) (Figure 5) [3].



Credit: BSIP/UIG/Getty

**Figure 5:** The Nipah virus in a sample of cerebrospinal fluid from an infected patient.

### Nipah Virus Recent Outbreak in Kerala May-2018, India

Kerala's Kozhikode is on high alert as a deadly virus called 'Nipah' (NiV) claimed six lives in the state. The fast-spreading virus Nipah reported has a high mortality rate of 70%.

#### Kerala Records 10 Deaths Due to Suspected Nipah Virus Infection

**Kozhikode:** "The death toll due to contagious fever has risen to ten, including three confirmed Nipah cases and seven suspected deaths following symptoms of the contagious viral disease". The death of three members of a family in Changaroth panchayat during the last fortnight was confirmed as due to Nipah virus in the tests conducted at National Virology Institute, Pune, on Sunday. The latest victim suspected to have died due to Nipah infection is Lini, 31, a nurse of the Perambra Taluk Hospital. Lina, hailing from Peruvannamuzhi, had tended to one of the patients, who was later confirmed to have had Nipah infection, at the Perambra hospital [4].

#### Treatments for Nipah Virus

- According to WHO, there is no particular vaccine currently available for either humans or animals and NiV-infected patients are currently limited to supportive care only.
- People have also been informed that they should not consume fruits that have fallen on to the ground [2].

#### Preventive Measures

- Mainly the prevention focus on immediate eradication by mass culling of infected and in-contact pigs.
- After culling, the burial sites are disinfected with chlorinated lime.

- Use sodium hypochlorite (bleach) to disinfect the contaminated areas and equipment.
- Strict Ban on transporting pigs within the countries affected, a temporary ban on pig production in the regions affected,
- Improvement of biosecurity practices.
- Health Education and use of personal protective equipment (PPE) by persons exposed to potentially infected pigs is highly recommended.
- Improved hygiene at pig operations is suggested.

### Summary

Nipah virus infection is an emerging zoonotic disease that causes severe disease in humans and animals. Zoonosis means a disease which transmit to humans from animals. The natural host of the virus is fruit bats of the Pteropodidae Family, Pteropus genus. Mode of spread: Nipah virus takes place through direct contact with infected bats, pigs, or from other NiV-infected people. Symptoms includes: fever and headache within three-14 days of exposure an Incubation period of five to 14 days. The clinical signs are fever, headache, dizziness and vomiting, followed by drowsiness, disorientation and mental confusion. More than 50% of the patients faced a decreased/altered level of consciousness and prominent brain- dysfunction. The fast-spreading virus Nipah reported has a mortality rate of 70%. "Treatments for Nipah virus: there is no particular vaccine currently available for either humans or animals and NiV-infected patients are currently limited to supportive care. People have also been cautioned that they should not consume fruits that have fallen on to the ground. Preventive measures: mainly it focus on immediate eradication by mass culling of infected and in-contact pigs. After culling, the burial sites are disinfected with chlorinated lime" [5].

### Acknowledgement

I would like to thank our beloved management of SND College of Nursing.

### References

1. (2018) BS Web Team.
2. [www.business-standard.com/article/current-affairs/nipah-virus-in-](http://www.business-standard.com/article/current-affairs/nipah-virus-in-kerala-nipah-symptoms-treatment-several-dead-in-kozhikode-cm-pinarayi-vijayan-all-you-need-to-know-118052100997_1.html)
3. (2014) Nipah Virus Distribution Map, CDC.
4. [www.oie.int](http://www.oie.int).
5. <https://timesofindia.indiatimes.com/city/kozhikode/kerala-records-10-deaths-due-to-suspected-nipah-virus-infection/articleshow/64254147.cms>.



This work is licensed under Creative Commons Attribution 4.0 License  
DOI: [10.19080/JOJNHC.2018.08.555729](https://doi.org/10.19080/JOJNHC.2018.08.555729)

### Your next submission with Juniper Publishers will reach you the below assets

- Quality Editorial service
- Swift Peer Review
- Reprints availability
- E-prints Service
- Manuscript Podcast for convenient understanding
- Global attainment for your research
- Manuscript accessibility in different formats  
( Pdf, E-pub, Full Text, Audio)
- Unceasing customer service

Track the below URL for one-step submission

<https://juniperpublishers.com/online-submission.php>