

# Nipah virus: impacts and prevention strategies



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## Introduction

Nipah virus (NiV) may not be something you hear much about in the United States, but it is a growing issue overseas. Nipah Virus is a part of the Paramyxoviridae family with the genus HeniPavirus (Nipah Virus (NIV), CDC). It is considered a zoonotic virus that can be transmitted from contaminated food, or it can spread from person to person (Nipah virus infection, 2018). The virus is believed to have originated from a certain species of fruit bats. This species of fruit bats is the main reservoir. The virus may have no to little effect on them, or even other animals, but humans can become infected with NiV when they have contact with infected bat saliva, feces, or other infected animals (Davis, 2018). Symptoms of the virus can vary anywhere between asymptomatic, acute respiratory infections, to fetal encephalitis with the case fatality rate estimated at 40-75% (Nipah Virus (NIV), CDC). Even if you survive the virus, it doesn't mean you are out of the water. 20% of patients who survive NiV have residual neurological effects such as seizure disorders or even personality changes (Nipah virus infection, 2018). At this time, there is no vaccine or drugs to treat Nipah virus infections. With that being said, the World Health Organization does realize the potential magnitude of this virus had has identified it as, " a priority disease for the WHO Research and Development Blueprint (Nipah Virus Infections, 2018)." Since there is no medication to treat for Nipah Virus, the best way to control the virus is to spread awareness and provide surveillance and education (Sharma, 2019). This can be achieved by expanding surveillance to monitor bats behaviors in eastern countries where outbreaks have already been reported and educated locals of the importance of preventive measures.

## Background

Nipah virus was named after the village, Kampung Sungai Nipah, where it was first discovered in 1999 (Davis, 2018). The virus was discovered when an increase of pig farmers were identified suffering from respiratory illness and encephalitis. During this outbreak, 300 human cases were identified with over 100 deaths reported. With so little known about the disease, to stop the outbreak, over a million pigs were euthanized (Nipah Virus(NiV), CDC). The virus was then reported in Bangladesh and India in 2001 with Bangladesh having nearly annual outbreaks since then. The most recent outbreak was reported on May 2018 in India. This outbreak resulted in 17 deaths (Sharma, 2019). Trends in these countries show that outbreaks tend to happen by coming in contact with infected pigs or by eating contaminated date palm sap. And even though human to human contact can spread the virus, it is less common in these areas. We still have much to learn about NiV and research is being done to find the best treatment method. Some researchers believe the antiviral drug ribavirin may be beneficial in treating Nipah Virus but little research has supported that theory (Davis, 2018).

## Methods

There is currently no effective therapeutics for the treatment of Nipah Virus. Laboratories and Universities are currently working on developing a vaccine, but most studies are still in preliminary stages. To date, no clinical trials have begun for a NiV vaccine. To prevent further outbreaks, surveillance, supportive care, education, and prevention measures need to be a priority (Status of vaccine research and development of vaccines for Nipah virus,

2016). This is especially true in at risk areas. Education should include the importance washing their hands often and disinfecting farm equipment as well as the use of personal protection equipment including masks, goggles, gloves, and gowns when working with animals that could potentially carry the virus. Farms should also focus on the prevention of overcrowding. This is due to the fact that having multiple animals packed into a small space would increase the rate at which a virus spread. It is also important that trees that attract bats are not planted near farm animals (Brenda, 2018).

## Conclusion

Nipah virus emerged 20 years ago and is still causing morbidity and mortality to both humans and animals. There continues to be yearly outbreaks of NiV and the risk of additional outbreaks is increasing. To help stop future outbreaks, we not only need to teach prevention measures and spread continuous awareness in at risk areas, but we also need to better understand how the virus patterns and how it originated. To do this, a few studies are being done to observe bat's behaviors and migration patterns but more needs to be done to help us answer this question.

## References

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