






# URGENT NEED FOR ENHANCED SURVEILLANCE AND RESEARCH ON NIPAH VIRUS

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Due to the COVID-19 pandemic, novel viral pathogens are now a global concern, and many epidemics continue. These outbreaks can become global threats due to globalization. In economically weaker nations, infectious diseases remain the leading cause of death, putting local healthcare systems under pressure and fostering new threats [1]. Nipah virus, an animal-transmitted pathogen, has a high mortality rate and can harm public health. Nipah is a Paramyxoviridae virus-like parainfluenza, measles, and mumps. Although less well-known than other infectious diseases, the Nipah virus poses a serious threat that requires global attention and intervention [2].

The Nipah virus was initially discovered during a disease outbreak in Malaysia in 1998. This outbreak led to 265 cases of acute encephalitis, resulting in 105 deaths between September 1998 and May 1999. The case fatality rate (CFR) during this period was 39% [3]. Subsequent outbreaks, primarily in Bangladesh, Malaysia and India, have demonstrated even higher mortality rates, ranging from 40% to 70% depending on the region. In Bangladesh, where the virus has caused near-annual outbreaks since 2001, the CFR has often exceeded 70% [4]. Between

1998 and 2018, over 600 cases of Nipah virus infection were reported, with significantly higher case fatality rates of 43–100% [5]. The Nipah virus was classified as a priority pathogen by the World Health Organization in 2022 because of its high mortality rate, lack of targeted treatment, absence of a vaccine, and frequent occurrence of outbreaks. The Nipah virus continues to be a significant concern in 2024. In January, two individuals from Bangladesh were diagnosed with Nipah virus infection, and regrettably, both of them died from the illness [6]. In July, a 14-year-old boy passed away, and 60 individuals belonging to the high-risk category were identified in Kerala, India [7].

The Nipah virus is transmitted to humans through direct contact with infected animals such as bats and pigs, or by consuming food that has been contaminated. In Malaysia, the primary cause of infection for the majority of human cases during an outbreak was contact with pigs. Furthermore, there have been confirmed cases of transmission of the virus from human to human, particularly in healthcare settings [4, 8]. This has raised significant concerns about the virus's ability to cause larger outbreaks. The clinical symptoms

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of Nipah virus infection vary from absence of symptoms or mild respiratory illness to severe encephalitis, frequently resulting in fatality. The time required for incubation is typically shorter than two weeks. In the beginning, Nipah infection manifests as fever and headache, along with symptoms such as dizziness and vomiting. As the disease progresses, it can develop into severe encephalitis, which is marked by drowsiness, changes in consciousness, and coma. In addition to neurological symptoms, patients experience symptoms related to respiratory infection. Long-term neurological complications can have a significant impact on the quality of life of survivors [5, 9, 10]. Furthermore, the lack of targeted antiviral therapies or an approved vaccine renders the Nipah virus particularly concerning for public health.

Bats, the virus's natural hosts, can spread Nipah virus to humans, according to recent research [4]. Increased bat-human interactions, which increase spillover events, may be caused by land use, urbanization, and climate change. Not to be overlooked is the Nipah virus's ability to adapt and evolve, which could improve human transmission. Considering these factors, the international health community must prioritize Nipah virus research to develop effective diagnostic tools, treatments, and vaccines. Public health authorities must also improve surveillance systems, especially in outbreak-prone areas, and promote wildlife-human interaction reduction. The Nipah virus is a stark reminder of the threat of emerging infectious diseases. To prevent the Nipah virus from becoming a global health emergency, proactive strategies based on scientific research and international cooperation are needed.

### Article information and declarations

#### Author contributions

Julia Krotofil — conceptualization, writing;  
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#### Conflict of interest

The authors declare no conflict of interest.

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