

# Hendra virus in a Nutshell

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## ***A guide for journalists prepared by the AusSMC***

This is part of the *Science in a Nutshell* series produced by the AusSMC and verified by an independent expert. This document provides simple explanations of Hendra virus and some of its controversial aspects.

*Hendra virus in a Nutshell* is correct as at the time of writing, January 2012.

If you need help finding an expert on Hendra virus, please contact the AusSMC by email ([info@aus-smc.org](mailto:info@aus-smc.org)) or call us on 08 7120 8666.

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### **What is Hendra virus?**

Hendra virus is an infectious disease that can be transmitted from animals to people. It is not easily transmitted, but once infected it has a high death rate. In all cases to date, the infection has been transmitted to humans from horses. The horses themselves are thought to have become infected through contact with flying foxes. There is no evidence of direct infection from flying foxes to humans.

### **What are the symptoms of Hendra virus in people?**

- An influenza-like illness with symptoms including fever, cough, sore throat, headache and tiredness, and/or
- Encephalitis (swelling of the brain) with symptoms such as headache, high fever and drowsiness, which progressed to convulsions and/or coma and death.

### **How quickly can you be infected?**

The time from being in contact with a sick horse until the start of symptoms in people has been between five and 21 days in cases so far.

### **How many cases have there been?**

There have been seven cases of Hendra virus infection in people. Four of these people died; three soon after exposure and the fourth appeared to have recovered but relapsed with swelling of the brain over a year later and died.

### **Can you carry the virus and not know it?**

There have been no known cases of people having the virus and not showing symptoms.

### **What are the symptoms of Hendra virus in horses?**

The early signs include fever, increased heart rate and restlessness. Other common features include difficulty breathing and/or weakness and neurological signs such as uncoordinated gait and muscle twitching, quickly leading to death in most cases.

### **Can other animals be infected?**

Only flying foxes, horses and humans are known to have been infected naturally. At the time of writing there is evidence of one dog having antibodies to the infection but it did not show any symptoms nor could the actual virus be detected.

Hendra virus is genetically stable, and there is no evidence that the virus has changed significantly since it was first investigated in 1994.

### **What is the treatment for Hendra virus?**

There is no known effective treatment for Hendra virus infection in people. Clinical management is based on treating symptoms as they arise. When a person has been exposed to large amounts of body fluids of infected horses, the person can be given an experimental human antibody, which has been shown to be effective in primates even if given after exposure and in ferrets if given within 12 hours of exposure. However, this product has not yet been trialled for safety or efficacy in humans.

### **Is there a vaccine against Hendra virus?**

There is currently no vaccine to prevent Hendra virus in people. The greatest promise for controlling Hendra virus outbreaks in people is a vaccine for horses that CSIRO's Australian Animal House Laboratory has developed, in collaboration with scientists in the US. This vaccine has been shown to be effective experimentally and is undergoing trials. It is expected to be ready for use in 2013.

### **How is the virus spread?**

Horses are thought to be infected by consuming food or water contaminated by flying fox urine, saliva or birth products. The infection has been shown to spread between horses in close contact through infected secretions or blood. Horses have been shown to excrete virus up to 72 hours before showing clinical signs.

People usually need to be exposed to a large amount of the secretions or blood from an infected horse in order to become infected. All seven humans infected with Hendra virus to date had high levels of exposure to body fluids of infected horses, such as when performing autopsies without protective gear or by direct contact with respiratory secretions or blood. Not all people with high-level exposure to infected horses have contracted the infection.

There is no evidence that the virus can spread directly from flying fox to people, from dogs to people, from the environment to people, or can float in the air. It has not been spread from person to person.

### **Should we be culling bats to stop the spread?**

There is no evidence that culling bats will get rid of the problem and this could exacerbate the risk as bat populations are likely to redistribute following a cull.

### **What can we do to prevent it spreading?**

Horses and their troughs should be kept away from trees with flowers and fruits. Vets should wear appropriate personal protective equipment when attending a sick horse or when performing procedures on any horse that are invasive or generate aerosols. Sick horses should be isolated.

Standard hygiene practices are critical in all contact with horses because animals may be infectious even though they aren't presenting symptoms. Whilst there has been no transmission of Hendra between people, standard hygiene and cleaning practices (droplet precautions) are advised.

### **Where does it occur?**

The majority of Hendra virus infection cases have been in Queensland with a number in northern New South Wales.

### **When is the Hendra virus season?**

Hendra virus infection cases have been reported in most months of the year, but with increased frequency from June to September.

### **When was the virus first seen?**

Hendra virus was first described after an outbreak of severe respiratory disease in horses that led to the deaths of 14 out of 20 infected horses and the death of a horse trainer in the Brisbane suburb of Hendra in 1994.

Hendra virus and Nipah virus are the only known members of a new genus, Henipavirus, within the family Paramyxoviridae.

## Acknowledgments

Professor Martyn Jeggo, Director of CSIRO's Australian Animal Health Laboratory.

## References

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## Further information

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*Hendra virus is a notifiable disease. If you suspect Hendra virus, please contact Biosecurity Queensland immediately on 13 25 23 or the Emergency Disease Watch Hotline on 1800 675 888.*

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