

Hendra virus

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What is Hendra virus?

Hendra virus is a virus carried by flying foxes that inhabit Australia, Papua New Guinea, and surrounding islands. So far, clinical disease due to Hendra virus infection has only been recognised in Australia. Flying foxes appear to be unaffected by the virus.

Rarely, Hendra virus spreads from flying foxes to horses, (spillover events) causing severe disease, and may then spread to people or animals in close contact with infected horses.

What should I do if I suspect Hendra virus in a horse?

If you suspect your horse has Hendra virus keep everyone away from the horse and call your private veterinarian immediately. Hendra virus is a notifiable disease, and the vet will notify the Local Land Services (LLS) or an inspector with [Department of Primary Industries \(NSW DPI\)](#), if they consider the case highly suspect for Hendra.

If your vet is unavailable you can call a District Veterinarian with the LLS or the Emergency Animal Disease Watch Hotline on 1800 675 888.

When and where does it occur?

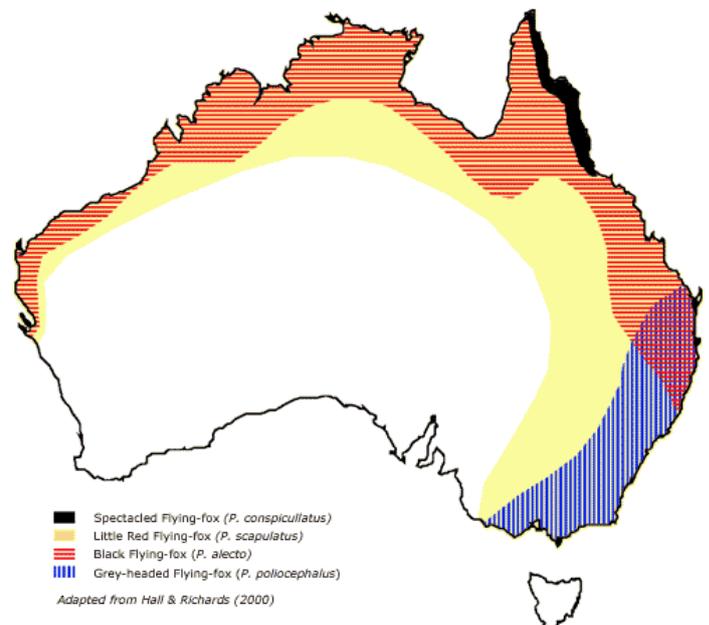
Hendra virus was first detected in 1994 in the suburb of Hendra, Brisbane. Since then cases have been reported from Cairns in north Qld down to Kempsey on the NSW Mid North Coast. The majority of cases have occurred east of the Great Dividing Range, with only a single outbreak in July 2011 west of the range in Chinchilla, Queensland.

Most incidents have occurred between May and August but cases have occurred in other months and the importance of seasonality is undetermined.

Incidents while sporadic sometimes occur in clusters. In 2011 there were 18 incidents in northern NSW and SE Qld while in 2012 cases occurred north of Rockhampton.

Hendra virus spillover events are possible wherever there are flying foxes. The distribution of the four species of flying fox present in Australia is shown in Figure 1. All four species have been shown to carry the virus.

Figure 1 Distribution of flying foxes in Australia



Hendra virus and flying foxes

Flying foxes are protected species and are critical to the Australian environment. They pollinate native trees and spread seeds to preserve the health of native eucalypt forests and rainforests.

Unauthorised attempts to disturb flying fox colonies are illegal and also ineffective as:

- Flying foxes are widespread in Australia and are highly mobile.
- There are more effective strategies to reduce the risk of Hendra virus infection in animals and people (see below).
- Attempts to cull flying foxes could make the problem worse by further stressing them and causing increased excretion of the Hendra virus.

For more information about flying foxes see <http://www.environment.nsw.gov.au/animals/flyingfoxes.htm>.

Symptoms in horses

Hendra virus can cause a wide range of symptoms in horses; they are not specific and may vary. It should be considered in any sick horse (that has potentially been exposed to Hendra virus) where the cause of illness is unknown, particularly where there is rapid onset and deterioration associated with either respiratory or nervous signs.

The following signs have been associated with Hendra virus cases:

- rapid onset of illness,
- increased body temperature (fever),
- increased heart rate,
- discomfort/weight shifting between legs that may mimic colic,
- depression,
- rolling and sweating with absent gut sounds
- rapid deterioration with either respiratory and/or nervous signs.

Not all of these signs will be found in any one infected horse.

Respiratory signs may include:

- laboured breathing,
- increased respiratory rate,
- nasal discharge (initially clear, progressing to stable white froth and/or stable blood-stained froth).

Additional nervous signs may include:

- wobbly gait,
- loss of vision,
- aimless walking in a dazed state,
- head tilting and circling,
- muscle twitching,
- inability to rise, and

- straining to urinate or dribbling urine,

Disorientated horses may become caught in fences and be mistaken for trauma cases.

Some infected horses have been found dead with no signs observed so Hendra virus infection should be considered when investigating unexplained sudden deaths in horses from areas where flying foxes occur.

In some cases the onset of signs is more gradual, and horses have survived for several days before being euthanased on welfare grounds.

Occasionally a horse will survive the infection. The reported mortality rate in infected horses is greater than 70%.

Hendra virus in humans

A small number of people have been infected with Hendra virus. These infections resulted from very close contact with infected horses (either sick horses or during autopsies).

There have been no reported cases of human-to-human, bat-to-human, or human-to-horse spread of Hendra virus.

In humans, Hendra virus infection may cause a flu-like illness that can progress to pneumonia, and/or encephalitis (inflammation of the brain). Encephalitis may cause confusion, headache, high fever, and drowsiness, which can progress to convulsions or coma. As August 2013, four of the seven people who are known to have been infected have died.

People who have apparently recovered from Hendra virus infection may relapse, with one person dying from encephalitis that recurred after 13 months. Relapses have also been reported in 7.5% of people infected overseas with the closely related Nipah virus. (Nipah virus has not been found in Australia.)

If you develop any concerning symptoms and your horse has been ill recently, contact your doctor or NSW Health urgently.

Hendra virus in other animals

As of 6 August 2013, Hendra virus infection has been confirmed in two dogs on properties where horses had been infected with the Hendra virus. Neither dog was showing signs of illness.

Cats, pigs, ferrets, and guinea pigs have been shown to develop clinical disease after experimental infection.

All domestic animals should be kept away from horses and any areas contaminated by their body fluids or wastes e.g. urine or manure.

Research is being conducted to determine the risks posed by other animals in relation to Hendra virus.

Incubation period

The incubation period in horses is 5–16 days. In humans the incubation period has ranged from 5–21 days.

Hendra virus survival

The Hendra virus is very fragile. It is easily killed by heat, soap or detergents and by desiccation (drying out). It may survive in the environment from several hours to several days depending on environmental conditions. Survival is longer in cool moist conditions where the pH is close to neutral.

Managing Hendra virus risk in the workplace

All workplaces where there is occupational contact with horses should implement work health and safety measures for Hendra virus.

Hendra virus requires careful risk management. Workplace managers should develop a written plan for managing suspect or confirmed cases of Hendra virus in their workplace. The plan should outline how to minimise the risk to all who work in or visit the workplace. Workers should be trained in how to implement the plan.

Sound hygiene and biosecurity measures should be adopted as a routine work practice for all horse contact. These should include:

- regular hand washing,
- maintaining standards of cleanliness and stable hygiene, and
- cleaning and disinfecting equipment that has been in contact with horses' body fluids.

Vaccination

A Hendra virus vaccine for horses produced by a commercial manufacturer was released on Thursday 1 November 2012. Vaccination is the single most effective way of reducing the risk of Hendra virus infection in horses. Vaccinating horses is an important measure to prevent human infection due to exposure to infected horses and provides a public health and workplace health and safety benefit.

Reducing the chance of infection in horses

Hendra virus vaccination is the single most effective step horse owners can take to reduce the chance of infection. Your veterinary adviser can provide details of the vaccination protocol.

Additional actions to reduce risk include:

- Do not place feed and water under trees.
- Cover feed and water containers with a shelter so they cannot be contaminated from above.
- Do not leave food lying about that could attract flying foxes, such as apples, carrots, or molasses.
- Inspect paddocks regularly and identify trees that are flowering or fruiting,
- Remove horses from paddocks where fruiting or flowering trees have temporarily attracted flying foxes.
- If the horse(s) cannot be removed from the paddock, erect temporary or permanent fencing to keep horses from grazing under trees.
- If these measures are not practical, consider stabling horses, or removing them from the paddock before dusk and overnight, when flying foxes are most active.
- Clean up any fruit debris under the trees before horses are returned to the paddock.

Additional information on minimising Hendra risks can be found in the Queensland Horse Industry Council Guidelines: [Property Design](#) and [Bats and Trees](#).

Preventing the spread of Hendra virus

Horses may be infectious before they show any sign of illness. Sound hygiene and biosecurity (animal disease control) measures should be used routinely for all horse contact.

If you have handled a sick horse, before you contact other horses:

- wash off any contamination with plenty of soap and water
- shower and wash your hair
- disinfect your footwear and wash your clothes. To minimise the risk of Hendra virus spreading to people or other animals:
- Implement high work health and safety standards (see Managing Hendra virus risk in the workplace)
- Isolate sick horses or suspect horse carcasses from other horses, people and animals until a veterinarian's opinion is obtained. Generally it is best to move the healthy animals away. Separate by a solid barrier or at least five metres.
- Always handle healthy animals before handling sick animals.
- Practise good hygiene (cover cuts and abrasions, regularly wash your hands with hot soapy water, especially after contacting the horse's mouth or nose)
- Only handle sick horses after taking appropriate precautions including using Personal Protective Equipment (PPE)
- Make sure all equipment exposed to any body fluids from horses is cleaned and disinfected before it is used on another horse. This includes halters, lead ropes and twitches. Ask your veterinarian about which cleaning agents and disinfectants to use.
- Do not travel with, work on or take sick horses to other properties or equestrian events.
- Do not allow visiting horse practitioners (e.g. farriers) to work on sick horses.
- Seek veterinary advice before bringing any sick horse onto your property.

Follow the procedures outlined in '[Guidelines for veterinarians handling potential Hendra virus infection in horses](#)'.

Personal protective equipment (PPE)

Everyone handling a sick horse or a horse on which procedures such as dentistry or stomach tubing is being conducted should wear full PPE. PPE must be fitted correctly.

When using PPE:

- Cover cuts and abrasions with a water-resistant dressing.
- Put on PPE before approaching the horse.
- After handling the horse, remove and dispose of PPE carefully into waste bags, making sure there is no contact with your face, particularly your eyes, mouth and nose.
- Carefully remove any clothing contaminated with the horse's body fluids.
- Wash your hands thoroughly after removing PPE.

Horse owners should always have a PPE kit on hand. Items for a PPE kit can be purchased from most hardware stores.

Your PPE kit should contain:

- hand cleansers/soap
- disinfectants
- waste disposal bags
- disposable gloves
- overalls
- rubber boots
- facial shields or safety glasses
- P2 particulate respirators (Note surgical masks do not provide respiratory protection, and P2 respirators are only effective for clean shaven people).

Your veterinarian can also help you obtain PPE.

Waiting for Hendra virus test results

If your veterinarian considers your horse may have Hendra virus, they will take samples from your horse for testing. See the fact sheet: [Waiting for Hendra test results](#) for more information.

Managing confirmed Hendra virus cases

Where Hendra virus has been confirmed as the cause of illness or death in horses, DPI in conjunction with the local LLS and NSW Health will manage the situation. Urgent measures will be taken to minimise the risk to people and other animals, and to track the likely cause and extent of the infection. See the Factsheet: [Management of Hendra quarantined properties](#) for further information.

More information

See the Queensland Department of Agriculture, Fisheries and Forestry Hendra virus page at <http://www.daff.qld.gov.au/animal-industries/animal-health-and-diseases/a-z-list/hendra-virus>.

Contact details for [NSW Public Health Units](#) are available at http://www.health.nsw.gov.au/Infectious/factsheets/Pages/Hendra_virus.aspx

Contact Paul Freeman, Senior Veterinary Officer, Wollongbar on 02 6626 1214 or paul.freeman@dpi.nsw.gov.au.

For updates go to www.dpi.nsw.gov.au/factsheets

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