

Hendra virus: Response to infection in animals

July 2017, Primefact 1567, first edition
Animal Biosecurity, NSW DPI

Introduction

Flying foxes (large fruit bats) are the natural hosts for Hendra virus. They appear to be unaffected by Hendra virus infection.

Occasionally Hendra virus can spread from flying foxes to horses. Very rarely, the virus can then spread from horses to other mammal species, including people where it can cause very serious illness or death. Two dogs have been infected on properties with Hendra virus infected horses but clinical signs were not reported. Other animals which can be infected by Hendra virus under laboratory conditions include cats, pigs, ferrets, rabbits and guinea pigs.

Definitions

Close contact animal means an animal that has been exposed or potentially exposed to Hendra virus infection.

Contamination Area means an area that is potentially contaminated with Hendra virus. It includes the area where an infected animal was located and an area holding close contact animals or sick animals.

Companion animal includes domestic dogs, cats, pigs, ferrets, rabbits and guinea pigs.

Responsibilities

Where infected companion animals are identified, the NSW Department of Primary Industries (DPI), the Local Land Services (LLS), NSW Health and the person responsible for the affected property need to work in partnership to prevent the spread of Hendra virus to humans and other animals

NSW Health will:

- work closely with NSW DPI/LLS to identify people who might be at risk and contact them to assess their exposure.
- Local Public Health Unit staff will organise medical treatment as required to reduce the chance of disease developing in people who are assessed to be at high risk for Hendra virus infection.

NSW DPI and LLS will:

- restrict the movement of known infected animals, sick animals, close contact animals and other listed items from your property
- identify animals that may have been infected
- direct you to isolate infected or sick animals and segregate close contact animals from sick animals on your property
- provide advice on selection and use of Personal Protective Equipment (PPE) to be used if you need to enter a Contamination Area
- demonstrate to you how to put on, take off and dispose of the PPE
- provide you with illustrated material on the use and disposal of PPE
- issue legally enforceable instructions or instruments to assist in the management of the case
- arrange sampling of close contact animals to establish their Hendra virus status
- establish health monitoring protocols for close contact animals on the property
- ensure Contamination Areas and other items are decontaminated.

NSW DPI/LLS will appoint a key contact person to liaise with you for all planned activities we

need to conduct on your property. This person should be your first point of contact for any queries.

The person in charge

The person in charge of the infected, sick or close contact animals remains responsible for their day to day care including providing food, water, shelter and veterinary care.

The person in charge of the property is also responsible to ensure that any visitors coming into a property under biosecurity restrictions are aware of the risks of being exposed to infected, sick or close contact animals and the biosecurity measures in place.

These responsibilities will be covered in any biosecurity directions given by NSW DPI or LLS authorised officer.

Legal directions

NSW DPI or LLS can manage the response to Hendra virus by using legal powers under Section 128 of the *NSW Biosecurity Act 2015*.

A NSW DPI or LLS veterinarian or authorised officer will give legally enforceable direction using a biosecurity direction.

The biosecurity direction is used to prevent, eliminate or minimise the biosecurity risks associated with Hendra Virus infection in animals and because it is an emergency situation will apply to animals, humans and items such as products and machinery.

Biosecurity directions remain in force until they are revoked and several biosecurity directions may be given during the restriction period. While initially they can be given verbally they must also be given in writing.

For a Hendra incident a biosecurity direction will give instruction about:

- what animals, land, vehicles or other items the biosecurity direction applies to
- movement restrictions
- how different animal risk groups must be managed (fed, housed, exercised, confined etc)
- PPE requirements for entering contaminated areas
- where to enter and exit contaminated areas
- health monitoring of close contact animals
- decontamination procedures
- record keeping requirements

- the consequences or penalties involved for a breach of the conditions will also be explained to you.

Once all sick or close contact animals have been shown not to be infectious, decontamination protocols are completed and a risk assessment indicates that infection is unlikely to be present on the property the biosecurity direction will be revoked. This usually takes about 30 days however it may vary (for example, if further animals develop infection).

Movement restrictions

When Hendra virus infection is confirmed, movements of horses, other susceptible animals and associated items on the property will be restricted by a biosecurity direction under Section 128 of the *NSW Biosecurity Act 2015*.

A sign indicating movement restrictions are in place will be fixed somewhere on the entrances to your property in a conspicuous place (e.g. all external gates).

Conditions on the biosecurity direction will be explained to you at the time an authorised officer gives the biosecurity direction. These conditions are designed to ensure that infectious animals or items do not leave the property and potentially spread Hendra virus.

Investigation

The NSW DPI or LLS authorised officer will ask questions to identify:

- the likely source of the infection
- other animals on the property that may have had close contact with an infected animal
- items e.g. feed, vehicles, fittings etc. that may be contaminated, and if they have been removed from the property
- movements of animals on or off the property in the past 16 days (and where they went)
- if the neighbours' animals could have had contact with the infected animal
- animals that may have strayed onto the property
- people who have had, or may have had, contact with any infected animals. This may include neighbours or members of the public.

Contamination Area

Land that is potentially contaminated with Hendra virus is called a Contamination Area. It includes the area where the infected animal was located

while it was sick and in the 10 days prior to the onset of disease. It also includes land contaminated with body fluids and stable waste from the infected animal.

An area holding sick or close contact animals is also called a Contamination Area. A safety buffer of five metres is included in a Contamination Area holding horses, and a one metre safety buffer is included in a Contamination Area holding other animals, unless a solid barrier is in place.

A NSW DPI or LLS authorised officer will identify a Contamination Area boundary with hazard tape and/or warning signs. People should avoid entering a Contamination Area where possible.

A log must be kept to record details of people entering any Contamination Area, see [Form Hendra virus entry and exit log for the Contamination Area](#).

Anyone who enters a Contamination Area must use appropriate Personal Protective Equipment (PPE).

Personal protective equipment

PPE is equipment that reduces the risk of infection to the person using it, and can help to prevent spread of infection. PPE needs to be fitted and worn correctly. All cuts and abrasions need to be covered before putting on PPE.

The following PPE is required to be worn before entering a Contamination Area, such as when caring for sick or close contact animals:

- P2 respiratory protection (mask). People who have beards require specialised respiratory protection provided by powered rebreathing units
- rubber boots or covered shoes that can be disinfected
- disposable overalls
- eye protection (e.g. safety glasses or goggles)
- latex or rubber gloves

For further information on how to put on, take off and dispose of PPE see [Personal Protective Equipment \(PPE\) and decontamination procedures for property owners](#).

After removing PPE, wash your hands with soap and water before leaving a Contamination Area.

Animal segregation

A NSW DPI or LLS veterinarian will assess the animals on the property and determine their level

of exposure. Animals with similar exposure levels will be grouped together where possible e.g. infected, sick or close contact animals. Each animal must be easily identifiable.

Animals that have been exposed or potentially exposed to infection are classified as '**close contact animals**'. Close contact animals should be housed, fed and watered separately from all other animals to prevent further spread of infection. They should be held away from where the infected animal was kept.

Close contact companion animals need to be confined separately from humans and other animals until monitoring and testing is complete e.g. dogs should be held in a secure yard or run or tied up and cats confined to a cage or other secure area.

Children should be kept away from all infected, sick or close contact animals and only a limited number of adults should have contact with these animals, and only for essential animal welfare tasks, e.g. feeding, watering, veterinary care and essential exercise. PPE should be worn for all these tasks.

Animals that have not been exposed to infection need to be restrained to keep them away from any Contamination Areas. These animals should be observed and managed as usual.

Infected, sick, and close contact animals

Infected animals, sick animals and close contact animals must be moved away from the boundary fence as soon as possible.

A five meter exclusion zone must be established inside any boundary fence where infected, sick, or close contact horses are held using temporary fencing. A one meter exclusion zone is required for other animals.

Monitoring

Close contact animals need to be monitored for health and behaviour daily during the restriction period which is a minimum of 20 days after their last known or potential contact with Hendra virus. Any abnormalities in behavior must be reported immediately to NSW DPI or LLS.

Monitoring should preferably be done from *outside* the Contamination Area by someone who knows the animals' normal behavior. PPE must be worn if monitoring occurs within the Contamination Area.

Vaccination

Unvaccinated horses including close contact horses may be vaccinated to help prevent Hendra virus disease.

Horses who have previously been vaccinated are likely to experience the quickest immune response compared to those who are getting their first dose of vaccine. Any costs for vaccination are at the owner's expense.

Testing of close contact animals

Close contact animals will usually be tested as soon as practical after Hendra virus is confirmed on the property. Additional testing will be done if the animals show signs of Hendra virus infection. Testing may also be done at the end of the incubation period (20 days) to confirm that the animals are not infectious.

Additional information on testing is found in the [Primefact Hendra virus, waiting for test results](#).

Euthanasia and disposal

If an infected animal dies or is euthanased the body needs to be disposed of in a way that minimises the risk of spread of Hendra virus. Options may include burial on the property or moving the carcass to another disposal site.

Anyone in contact with the carcass must wear PPE and take steps to minimise the spread of infection.

If a machine is used, push/pull the carcass using the blade so that only the blade will need decontaminating. If chains are attached full PPE must be used. Items such as ropes, slings or tarpaulins that cannot be decontaminated must be disposed of with the carcass.

Decontamination

Contaminated Areas and items need to be decontaminated by isolation (such as no human or animal contact) for 10 days or by disinfection as directed by an authorised officer.

All items and people leaving the Contamination Area must be decontaminated using the disinfection method advised by the NSW DPI or LLS authorised officer.

Human health concerns

This experience may be stressful for you and your family. If you feel anxious or have concerns about your health or about possible exposure to a horse infected with Hendra, contact your local

public health unit (PHU) on **1300 066 055**. For more information on Hendra virus infection in humans see: [Hendra virus fact sheet](#).

More information

- Visit the websites of the [NSW Department of Primary Industries and NSW Health](#).
- [Primefact Hendra virus, waiting for test results](#).
- [Personal Protective Equipment \(PPE\) and decontamination procedures for property owners](#).
- [Form Hendra virus entry and exit log for the Contamination Area](#).

Acknowledgments

This primefact has been reviewed by NSW Health.

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

© State of New South Wales through the Department of Industry, Skills and Regional Development, 2015. You may copy, distribute and otherwise freely deal with this publication for any purpose, provided that you attribute the NSW Department of Primary Industries as the owner.

Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (June 2017). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of the Department of Primary Industries or the user's independent advisor.

ISSN 1832 6668

INT16/156405