

Hendra Vaccination Advice Document

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This document has been prepared as general advice only, and specific advice should be sought from your veterinary practitioner. The aim of this document is to advise Pony Club Association of SA (PCASA) members of their risks when competing at events in the Hendra endemic regions (Queensland & northern NSW), or events with horses who originated from the endemic regions, and how to best minimise those risks.

Background

Hendra virus (HeV) is a serious, potentially fatal virus that is spread from flying foxes to horses, and from infected horses to humans. 4 out of 7 people (57%) who have contracted Hendra virus have died, while the survivors experience ongoing debilitation. 100% of horses infected with Hendra virus have died (any 'survivors' are euthanised due to human health risks). Hendra outbreaks have been confirmed in Queensland and northern NSW and this is considered the endemic region (where Hendra infection naturally occurs).

The clinical signs of Hendra virus in horses are varied and may include the following; fever, increased heart and respiratory rates, nasal discharge, colic, ataxia, muscle twitching, recumbency, blindness and sudden death. Due to these varied signs, diagnosis of Hendra virus is impossible without laboratory confirmation which may take 2-4 days for a result.

The Equivac HeV vaccine has been developed and shown to provide complete protection from Hendra infection. There is no virus present in the vaccination, it is made using a protein unique to the virus, and contains the same adjuvants as those found in common tetanus and strangles vaccines. As such, your horse cannot contract the virus from the vaccine. The confirmed adverse reactions are also the same rate and type as those of the other common vaccines.

The most common adverse event is an injection site reaction in 0.18% of cases (or approx. 1:550 horses), while all other adverse events occur in less than 0.09% of cases (or approx. 1:1,100 horses). The Australian Pesticides and Veterinary Medicines Authority (APVMA) handles all adverse events to veterinary medicines (not vets, not the manufacturer, but the government regulatory body). The APVMA classifies adverse events in three categories; unlikely, possible, and probable.

Unlikely is self-explanatory. Possible means it might be the agent in question, or any number of other possible differential diagnoses. Probable means it was likely that agent that caused the adverse event. Of the 7 reported deaths to the APVMA of horses questionably from Equivac HeV, NONE have been found probably linked to the vaccine. All have been found as possible, meaning it could have been the vaccine, or any number of equally likely scenarios that resulted in the sad passing of those horses. More information can be found here: <https://apvma.gov.au/node/12871>

Hendra endemic region events

When performing a risk assessment, there are two aspects to consider; the likelihood of exposure, and the severity of the outcome. Risks are then categorised as; trivial, tolerable, moderate, substantial, intolerable. Given the severity of any Hendra infection, no risk assessment concerning Hendra is less than moderate, while any events in the endemic region should be considered to have a substantial to intolerable risk assessment.

Obviously, we still want to run and enjoy events in the endemic region, and provided certain precautions are considered, we would encourage members to attend these events. Vaccination is the single most effective mechanism of preventing HeV infection. It isn't simply a matter of veterinarians needing to wear more personal protective equipment (PPE), no PPE is 100% effective, and it doesn't prevent exposure to owners and riders who aren't wearing it.

There are a number of considerations for members entering the endemic region with an unvaccinated horse, the most pertinent are:

- **Treatment access:** a sick horse at the competition (i.e. travel sickness, colic, etc.) will have to be treated as a suspect Hendra case, due to Hendra's varied clinical signs. Veterinarians reserve the right to refuse treatment to unvaccinated suspected Hendra patients, as confirmed by the recent Queensland parliamentary enquiry. This may mean that your horse may not be able to get veterinary attention on the way to, during, or on the way home from the event.
- **Exclusion testing:** Hendra testing takes 2-4 days for a result to be returned, which means in the case of a sick horse, treatment may be sub-optimal or delayed altogether for 48 hours or more. This is in order to comply with the workplace health and safety laws and may result in suffering that could be avoided by prior vaccination.
- **Human exposure:** In the devastating event of an actual Hendra outbreak, exposure to the lethal virus may have occurred to both horses and humans before the full magnitude of the situation is known. Horses can be infected with HeV for 5-16 days before showing any signs of illness. This may place your child's horse, your child, or yourself at risk.
- **Outbreak quarantine:** In the event of an outbreak, regardless of human exposure or risk, the entire event will be placed on lockdown for a minimum of 30 days. Any humans exposed to infected horses will have to undergo monoclonal antibody treatments, while sick horses may be euthanised. However unexposed people, with vaccinated horses who were also not exposed, may be able to leave the quarantine zone earlier.
- **PIRSA restrictions:** Primary Industries and Regions South Australia (PIRSA) do not allow any horses showing signs of a notifiable disease (i.e. Strangles, Hendra, etc.) back into the state while the horse is showing clinical signs or until it has had a negative laboratory test. This means simple cases like colic, or mild respiratory infections, may not be allowed back into the state for a period of time.

These risks can all be mitigated by use of the safe, highly effective, and accessible Hendra vaccine.

Events with horses from endemic regions

While the risk of infection directly from flying foxes is reduced outside the endemic regions, there is still a risk of infected horses travelling from the endemic region to the event. Hendra virus incubation period (the time from exposure to displaying clinical signs) in horses can be anywhere from 5-16 days (potentially up to 31 days). This means horses can be infected for two weeks before anyone realises, meaning more than enough time to travel to the event.

An outbreak at the event will trigger all the above risks, regardless of whether it's in the endemic region or not. It's also important to note that the 'endemic' region is not static, with a recent outbreak of Hendra virus in Scone (2019), outside the recognised endemic region.

Recommendation

It is my recommendation that all competitors' horses entering the Hendra endemic region for competition, or competing at an event also containing horses having originated from the endemic region, be vaccinated prior to entering the region/event.

Vaccination

It should be noted that an unvaccinated horse requires two doses of vaccine 3-6 weeks apart (similar to tetanus vaccination), with onset of immunity 3 weeks after the second dose (i.e. minimum 42 days from first vaccination to full coverage). If the second dose is administered more than 6 months before the competition, a 6-month booster must be given. For any horses that have received this primary course of three doses, an annual booster is sufficient to maintain immunity.

All horses must be microchipped to receive the vaccines as they will be entered onto the national database to allow event organisers and veterinarians to check vaccination status. The vaccine is fully registered with the Australian Pesticides and Veterinary Medicine Authority (APVMA), and is a safe, highly effective means of preventing Hendra virus infection in horses, and subsequent transfer to humans.

Other Vaccinations

It is assumed that all horses are previously vaccinated for Tetanus & Strangles. It is recommended that all horses be up to date with this coverage, regardless of their Hendra vaccination status.

Recent Media Coverage

A study published in April 2018 looked at Thoroughbred racing performance 3 months prior and 3 months post Hendra vaccination in 755 horses and found "no evidence of an effect of Hendra virus vaccination on racing performance".

<https://www.ncbi.nlm.nih.gov/pubmed/29399777>

After the recent 2019 outbreak of Hendra virus in Scone, NSW (outside the previously recognised 'endemic region'), the Hunter Thoroughbred Breeders Association announced that nine of the largest Thoroughbred breeding studs in the area would require mares entering for breeding (and those horses already on site) to be vaccinated for Hendra virus, with the decision supported by all three veterinary clinics in the region.

<http://www.newgate.com.au/articles/htba-press-release-regarding-hendra-virus-protocols.html>

Biosecurity

The following measures should be followed during the event to minimise the risk of exposure to infectious diseases (not just Hendra), but do not replace the importance of vaccination:

- **Avoid horse-to-horse contact:** Avoid unnecessary interaction and contact between horses. Nose-to-nose contact, or people touching your horse, are key ways for disease to spread from horse-to-horse. Contact with unvaccinated horses from the endemic region, and *any* sick unvaccinated horses should be minimised.
- **Monitor horse health:** Keep an eye on your horse's health throughout the event so that you will notice any changes in health or behaviour. Take their temperature daily, and record on a chart on your stable door, ensuring that the temperature stays below 38.5 degrees Celsius (it's what the Olympians and Three Day Eventers do at events).
- **Keep sheltered:** Horses should be kept stabled during the early morning and night (peak bat travelling times). All feed and water containers should remain under shelter at all times to prevent contamination with bat bodily fluids.
- **Do not share feed and water:** Do not allow your horse to drink from shared water buckets or troughs or eat from shared feed bins. Do not allow strangers to feed your horse. If you arrange someone else to feed your horse while at the event, make sure they do not use the same equipment on other horses first.
- **Wash your hands between horses:** Wash your hands, or disinfect with waterless hand sanitiser, between handling horses.
- **Bring your own equipment:** Do not borrow equipment from other attending horse owners or from event facilities. If in an emergency you need to borrow equipment, then clean and disinfect it thoroughly before use.
- **Report disease signs:** If you notice strange behaviour or signs of disease in your horse, or any horse, report it immediately to the event organiser and/or event veterinarian so they can determine the risk to other horses. Do not move the horse.
- **Healthy horse signs:**
 - Clear eyes, normal stance, no nasal discharge
 - Temperature: 37.0-38.5°C
 - Heart rate: 24-40 beats per minute
 - Breathing: 8-12 breaths per minute
 - Capillary refill time: 1-2 seconds

References

Australian Veterinary Association 2016, '*Hendra virus*', accessed: <http://www.ava.com.au/node/72182>
Department of Agriculture and Food 2016, '*Keeping horses healthy: a biosecurity checklist for horse owners, trainers and service providers*', accessed: <https://www.agric.wa.gov.au/livestock-biosecurity/keeping-horses-healthy-biosecurity-checklist-horse-owners-trainers-and-service>
Primary Industries and Regions South Australia 2019, '*Hendra virus*', accessed: https://pir.sa.gov.au/biosecurity/animal_health/horses/hendra_virus