

Hendra Virus – should we be vaccinating?

With the recent release of a vaccine effective against the deadly Hendra Virus, there has been much talk as to whether or not we should all be vaccinating against the disease. Here, we aim to answer a few questions about the virus and the vaccine in order to help you decide whether vaccination is right for you and your horse.

Background

Hendra virus is an emerging disease that was first identified in Australia in 1994. Since then, it has been responsible for about 80 known horse fatalities, with more than 30 of these deaths recorded in the last two years. There have been 7 confirmed cases of Hendra Virus infection in humans, with four of these people dying from the disease.

The virus occurs naturally in flying fox populations and is thought to be transferred to horses through contaminated flying fox urine, faeces or birthing products. Humans can become infected through close contact with infected horses. There has been no evidence of direct infection from flying foxes to humans or from humans to other humans, however infected horses can pass the disease to other horses as well as to humans. All secretions and excretions from infected horses can contain the virus and be infective, including respiratory secretions, blood, urine, saliva and faeces.

Currently, all cases of Hendra Virus infection have occurred in Queensland and Northern New South Wales but it is not known why cases have only occurred in these areas. Surveillance of flying fox populations in Victoria has revealed that some Victorian flying foxes carry antibodies against the virus, indicating that they have been exposed to Hendra at some point in time. Victorian flying foxes have not been detected to be shedding Hendra virus particles, however we cannot guarantee that they will never begin to do so.

Up until a few years ago, Hendra Virus only occurred in Queensland and did not occur in NSW. A few years before that, the virus did not occur at all. Whilst Hendra virus does not occur in Victoria at present, it is important to remember that this is an emerging disease whose behavior we do not fully understand. If we are unlucky enough to have the disease in Victoria in the future, up until the day beforehand, we will still be claiming that Hendra does not occur in Victoria and for the hypothetically infected horse/horses (and potentially human/humans) in question, it will be too late.

Clinical signs of Hendra Virus infection in a horse can be initially subtle and non-specific. In addition, an infected horse can shed the virus and infect other horses or humans for up to three weeks before the horse shows signs of being unwell. This means that horses traveling from higher prevalence areas such as Queensland could theoretically pick up the disease before being transported to areas such as Victoria for competitions and not show any signs of illness until after they arrive.

Horses infected with Hendra will initially appear very depressed with a high rectal temperature. For recently traveled horses, this presentation is virtually identical to those horses suffering from travel sickness (pneumonia), which is a common disease after prolonged transport. The disease quickly progresses from this point, usually involving respiratory and/or neurological signs with death often occurring within 48 hours after the onset of initial signs.

Current DPI protocols for managing suspected Hendra Virus cases involve quarantining the area, limiting human and horse contact with the affected animal and collecting samples using full personal protective equipment (full body suit, eye wear, face mask etc) with subsequent decontamination. It is current policy that confirmed cases of Hendra Virus infection be euthanized.

The Vaccine

With the increasing number of Hendra Virus infections in the last two years, much work has gone in to developing a vaccine against Hendra Virus, which was released late last year. Equivac® HeV is a new vaccine that is effective at protecting horses against infection with Hendra Virus. It interrupts the cycle of transmission from flying foxes to horses and from infected horses to other horses. By preventing infection of horses, the vaccine also helps protect humans as we can only contract the disease from an infected horse.

The current vaccination protocol states that horses will initially be vaccinated with two doses, 3 to 6 weeks apart. Horses are then immune to the disease 21 days after the second dose. Current work has shown that the vaccine affords at least 6 months protection. Due to the accelerated release of the vaccine, we are still awaiting data to determine whether horses are still protected 12 months after vaccination. This data will be released in the next few months and it is expected that boosters will then be able to be given 12 monthly. Vaccinated horses must be microchipped and are identified as being vaccinated by a certificate that is sent to the owner. The horse's details are also placed on a national database that records the vaccination status against the microchip number.

Safety studies have been conducted in horses greater than 4 months of age and showed no significant adverse reactions associated with the use of the vaccine. Minor side effects that have been reported include small injection site reactions (lumps) that are not painful and persist for a few days. Equivac® HeV is not a live vaccine and cannot cause Hendra disease.

It is important to note that at present, vaccination can affect suitability for export to Hong Kong, China, Singapore, Malaysia, Indonesia and the UAE. However, export to Great Britain, Europe and America is not currently affected. It is possible to distinguish between vaccinated and infected horses via a blood test however it will take time before overseas quarantine authorities change their policies. Alternatively, it is likely that some regions will implement a policy that requires vaccination as a condition of export.

Vaccination is currently strongly recommended for horses that live or spend time in areas of QLD or NSW where there have been previous outbreaks. However, any horse exposed to either flying fox populations or to other horses

traveling after exposure to flying foxes, particularly from Northern NSW and QLD, is potentially at risk.

Vaccination should be used in conjunction with paddock management and personal hygiene to minimize the risk of disease transmission. Horse feed and water troughs that are beneath trees should be moved under shelter to avoid possible contamination with flying fox fluids. Horses should also be restricted from accessing areas under trees where flying foxes are known to roost. Increasing hand hygiene and minimizing contact with horses' blood, nasal discharge and other body fluids, especially in the case of *any* sick horse, will also help minimize risk.

At this stage vaccination is not compulsory but it is likely that equine organisations will require vaccination for registration or competition in the future. It has recently been made compulsory that any horse competing at the 2013 Royal Queensland Show be vaccinated with Equivac® HeV.

The decision on whether or not to vaccinated your horses in Northern Victoria requires careful consideration as to the risk that Hendra Virus poses to yourself, your horses and the people in contact with them. Although veterinarians treating sick horses are at the greatest risk of being exposed to the virus, infection risk also exists for horse owners, their families and staff that may be in contact with an infected horse. It is unlikely that a human vaccine will be produced in the future so the only real form of human protection we have is to vaccinate our horses.

Dr Sarah Bolton BVSc (Hons)