Parliamentary Committees

Hendra virus EquiVac® vaccine and its use by veterinary surgeons in Queensland

Report No. 24, 55th Parliament
Agriculture and Environment Committee
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Chair's foreword

This Report presents the findings of the Agriculture and Environment Committee's inquiry into the HeV EquiVac® vaccine and its use by veterinary surgeons in Queensland.

I thank committee members for their work on the inquiry. I would also like to acknowledge the assistance provided by officers of the Department of Agriculture and Fisheries, Queensland Health and Workplace Health & Safety Queensland.

We heard from many equestrian groups, horse owners and veterinarians during the inquiry. We sincerely thank everyone who contributed their views.

I commend this Report to the House.

Glenn Butcher MP
Chair

October 2016

Abbreviations and acronyms

AERP	Adverse Experience Reporting Program
APVMA	Australian Pesticides and Veterinary Management Authority
AVA	Australian Veterinary Association
BQ	Biosecurity Queensland
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAF	Department of Agriculture and Fisheries
EVA	Equine Veterinarians Australia
HeV	Hendra virus
OIR	Office of Industrial Relations, Queensland Treasury
PPE	Personal protective equipment
WH&S	Workplace health and safety

Executive summary

On 25 February 2016, the Legislative Assembly referred an inquiry to the committee in relation to the Hendra virus EquiVac® vaccine and its use by veterinary surgeons in Queensland. The committee was asked to consider a range of issues concerning:

- the development, trials and approval processes for the Hendra vaccine
- the incidence and impact of adverse reactions by horses following vaccination, and the reporting of adverse reactions
- economic impacts of the vaccine, and
- the guidelines for veterinarians attending horses that are not vaccinated against HeV.

For the inquiry the committee invited written submissions, received expert briefings and held a series of hearings in coastal and hinterland areas where horses and flying-foxes, the reservoir species for the virus, are common.

The committee's findings reflect its consideration of the 283 written submission accepted, the hearing transcripts, additional submissions and other information presented during the inquiry.

The committee has made eleven recommendations for the Government to implement. Most importantly, the committee has recommended that vaccination against HeV not be made mandatory. The committee has also supported the right of veterinarians to choose not to treat unvaccinated horses. In other recommendations, the committee has sought to improve:

- the turnaround times for exclusion testing for the virus in horses
- the safe storage and handling of the vaccine in the field
- the information provided to horse owners about the vaccine
- the integrity of the reporting of adverse reactions to the vaccine, and
- the government guidelines for veterinarians and others who work with at-risk horses.

The committee has also recommended the inclusion of equine industry representatives in future meetings of the Hendra Virus Inter Agency Technical Working Group that provides technical advice on Hendra virus to the government. Finally, the committee has recommended changes to the workplace health and safety regulations to limit the obligations of veterinarians and their staff whilst treating horses on clients' properties.

In accordance with section 107 of the *Parliament of Queensland Act 2001*, Ministers are required to provide written responses to the Parliament to the committee's recommendations. Interim responses must be tabled within three months, and final responses within six months of the tabling of the report.

Inquiry recommendations

Recommendation 1

Improving timeframes for exclusion testing

That the Department of Agriculture and Fisheries investigate the feasibility of a Hendra virus exclusion test capability in Townsville or Cairns to process samples from North Queensland more quickly than sending samples to Brisbane for analysis.

Recommendation 2

Development and evaluation of a stall side test

That the Department of Agriculture and Fisheries support the development of a rapid stall-side test for Hendra virus as a further aid to check the Hendra virus status of horses in the field, and determine whether a rapid stall side test could negate the need for HeV exclusion testing.

Recommendation 3

Temperature indicators for vaccine packs

That the Department of Agriculture and Fisheries request the Australian Pesticides and Veterinary Management Authority to consider whether temperature indicators should be required to be included with Hendra virus vaccine packs given the importance of maintaining cold storage of the vaccine, including while in the field.

Recommendation 4

Advising owners of vaccine information and 'off label' risks

That the Department of Agriculture and Fisheries, in conjunction with the Australian Veterinary Association, remind veterinarians of their obligations to provide Hendra vaccine information to horse owners and to advise owners of the risks to horses before administering the vaccine 'off label'. This includes administering the vaccine with other medicines.

Recommendation 5

Raising awareness of processes for self-reporting adverse reactions to the Hendra vaccine

That the Department of Agriculture and Fisheries explore options to raise awareness among horse owners and equestrian groups of processes for horse owners and others to self-report adverse reactions to vaccines and chemicals.

Recommendation 6

Revision of Biosecurity Queensland guidelines

That the Biosecurity Queensland guidelines for the treatment of horses be revised to: include information on high risk areas for Hendra virus; reflect the latest research into risks for Hendra virus, and how best to manage those risks; clarify the requirements for veterinarians to wear personal protective equipment while giving Hendra vaccine to horses in accordance with workplace health and safety requirements; and clarify specific guidelines for horse care professionals other than veterinarians in accordance with standard precautions, as developed by the AVA, for all contact with horses.

Recommendation 7

Workplace health and safety guidelines for both low risk and high risk treatments

That as part of the revision, WH&S Queensland provide information for veterinarians and other horse care professions about Hendra virus risks and how to fulfil WH&S responsibilities while providing low risk as well as high risk treatments to horses.

Recommendation 8

Equine industry representatives on the Hendra Working Group

That the Minister invites equine industry representatives to participate in future Hendra Virus Interagency Technical Working Group meetings to ensure guidelines regarding the treatment of horses suspected of having Hendra virus meet the needs of the equine industry.

Recommendation 9

Hendra virus vaccination not to be mandatory

That Hendra virus vaccination not be made mandatory but left to the discretion of equestrian event organisers to require as a condition of entry and for horse owners to decide based on risk.

Recommendation 10

Promoting Hendra vaccinations of horses

That the Department of Agriculture and Fisheries promote to horse owners and equestrian groups the vaccination of horses against Hendra virus to encourage vaccination.

Recommendation 11

Changes to veterinarians' workplace health and safety responsibilities

That workplace health and safety legislation be amended so that veterinarians are not responsible for creating a safe workplace for any person other than their staff and themselves when treating a horse suspected of being, or known to be, infected with Hendra virus.

1 Introduction

1.1 Role of the committee

The Agriculture and Environment Committee is a portfolio committee appointed by a resolution of the Legislative Assembly on 27 March 2015. The committee's primary areas of responsibility are: Agriculture, Fisheries, Environment, Heritage Protection, National Parks and the Great Barrier Reef.[1]

1.2 The inquiry

On 25 February 2016 the Legislative Assembly agreed to a motion that the Agriculture and Environment Committee inquire into and report on the Hendra virus (HeV) EquiVacc® vaccine and its use by veterinary surgeons in Queensland.

1.3 Terms of reference

In undertaking the inquiry, the committee was required to consider:

1. the development, trials and approval processes
2. the incidence and impact of adverse reactions by horses following vaccination and the reporting of adverse reactions and economic impacts of the HeV EquiVacc® vaccine
3. who bears the risks of HeV infection and who incurs the costs and receives the benefits from each risk mitigation option
4. whether the guidelines/procedures required for veterinarians attending horses that are not vaccinated against HeV are proportionate to the consequences
5. impacts on the equine industry and the economy arising from veterinarians applying a policy not to treat unvaccinated horses, and
6. the impact of Workplace Health and Safety actions on the decision by veterinarians not to attend unvaccinated horses and results of previous Workplace Health and Safety HeV investigations where there have been human infections.

The motion agreed by the House required the committee to report on the inquiry by 22 August 2016. On 16 August, the House agreed to extend the committee's reporting deadline to 22 October 2016.

1.4 The committee's inquiry processes

For the inquiry the committee:

- wrote to stakeholders inviting written submissions. The committee accepted 293 written submissions. A list of submitters is at **Appendix A.** The submissions the committee has agreed to publish are available from the committee's website
- sought expert briefings from the Biosecurity Queensland within the Department of Agriculture and Fisheries (DAF), the Australian Veterinary Association (AVA), Equine Veterinarians Australia and the Office of Industrial Relations (OIR) within Queensland Treasury. The officers who provided these briefings are listed at **Appendix B.** The transcript

[1] Schedule 6 of the Standing Rules and Orders of the Legislative Assembly of Queensland.

of the briefings and copies of the PowerPoint presentations provided by DAF and AVA are available from the committee's website.[2]

- held seven public hearings in Cairns, Jimboomba, Redlands, Brisbane (two hearings), Nambour and Rockhampton. The committee held a further two private hearings. The transcripts of the public hearings are available from the committee's website. A list of witnesses who appeared at the hearing is at **Appendix C**, and
- sought further written advice throughout the inquiry from DAF, OIR, AVA, the Australian Pesticides and Veterinary Management Authority (APVMA) and Zoetis Australia Pty Ltd, the manufacturer of the Equivac Hendra virus vaccine.

[2] See http://www.parliament.qld.gov.au/aec

2 Hendra virus

2.1 Background

Hendra virus (HeV), originally called *Equine Morbillivirus Pneumonia*, is a serious zoonotic disease (meaning that it can be transmitted from animals to humans) that can, and has, resulted in a number of animal and human fatalities. HeV is a BSL-4 virus in the same category as Ebola, but is not highly contagious. HeV was first identified in a 1994 incident at Hendra in Brisbane in which horse trainer, Mr Vic Rail, and 20 horses died.

Research has shown that HeV is probably an ancient virus. All four species of flying-foxes found in Australia carry HeV, though infected flying-foxes show no clinical signs of the disease. The virus is predominantly detected in and shed by populations of the black flying-fox (*Pteropus Alecto*) and the spectacled flying-fox (*Pteropus conspiccillatus*), with lower rates in the grey headed flying-fox (*Pteropus poliocephalus*) and the little red flying-fox (*Pteropus scapulatus*).

HeV is transmitted from infected flying-foxes to horses, and then from infected horses to humans. Exactly how the transmission occurs is not clear. Horses are thought to become infected by ingesting or inhaling the virus from the environment, most likely when they feed in areas contaminated by flying fox urine and/or virus-contaminated fruits and spats (fibrous plant material that remains after chewing by bats).[3] The virus can survive on mango flesh for more than two days depending on rain, wind, temperature and humidity. Research indicates that virus can be shed in the nasal passages of infected horses for up to 72 hours prior to clinical signs being exhibited. The shedding of the virus increases exponentially as clinical symptoms of the disease progress, and peaks immediately prior to the infected horse's death.

HeV is a member of a family of viruses carried by flying foxes that includes Nipah virus, not found in Australia, and Cedar virus. The emergence of bat-related viral infections communicable to animals and humans has been linked to the loss of bat habitats and increased contact between flying foxes and humans.

HeV is relatively rare and difficult to catch. However, if a horse or human does contract the virus, there is no cure and they will most likely die. The only available human treatment is an experimental monoclonal antibody therapy the effectiveness of which is unproven.

The combination of a very low incidence of infections and high mortality rates from infections that do occur make HeV a particularly difficult challenge for safety authorities to address.

2.2 Risks to horses

As noted above, HeV can be transmitted from flying foxes to horses. Field evidence indicates that HeV can spread from horse to horse through direct contact with infectious body fluids or indirect contact with contaminated equipment such as shared veterinary instruments. There have been six occasions where one or more companion horses have become infected after close contact with an infected horse. However, HeV infection is more likely to occur in a single horse than in a number of horses.

If infected with the virus, the mortality rate for horses is very high. HeV infected horses usually experience brief, severe respiratory or neurological illness causing death.[4] The symptoms are also

[3] The Center for Food Security & Public Health 2015, *Hendra virus infection*, p.2.

[4] The Center for Food Security & Public Health 2015, p.1.

unremarkable and could easily be mistaken for symptoms of other illnesses in horses. There have been 55 HeV incidents since 1994 with 97 HeV infected horses in total. All occurred in Queensland and New South Wales. Seventy-seven (79 per cent) of the 97 cases died, though, the mortality rate for horses is effectively 100 per cent due to national euthanasia policies. All horses with signs of having been exposed to Hendra are euthanized. Most HeV infections in horses have occurred during drier and cooler months of the year.

Although HeV is present in flying fox populations, wherever they are found in Australia, the likelihood of horses or other animals becoming infected is very low.

2.3 Risks to other animals

HeV has been transmitted experimentally to dogs, cats, ferrets, green monkeys and guinea pigs, though there is no evidence of natural infection in these species.

In 2011 and 2013, HeV was detected in dogs (one animal in each incident) thought to have been exposed to body fluids from infected horses. Both dogs were euthanized, though, they showed no symptoms of the disease.

2.4 Risks to humans

There have been seven known cases of HeV infections in humans. Four of the victims (57 per cent) died. All human infections occurred in Queensland from very close contact with respiratory secretions such as mucus and/or blood from infected horses. All human infections were in people working closely with horses, principally veterinarians and veterinary nurses. Veterinarians, veterinary nurses, other horse care professionals and stable hands who work regularly in close contact with body fluids from sick horses are most at risk of contracting the disease.

There have been many cases of people who have reported having some contact with infected horses and who have remained well and showed no signs of HeV infection when tested. There have been no reported HeV infections in owners of horses.

There have been no cases of HeV transmitted directly from flying foxes to human. There is also no evidence of humans being infected through contact with other species.

There have been no reports of human to human infections with HeV or from contact with flying foxes. Despite very close exposure to flying-foxes, no flying-fox carers have been reported with HeV infections.

2.5 Risk mitigation options

Biosecurity Queensland (BQ) and other agencies advocate a range of measures to reduce the risk of HeV infection in horses and humans. They include, in no particular order:

- testing of horses for signs of the virus
- vaccination of horses against the virus
- limiting horse and flying fox interaction
- limiting contact between horses that may be infected with HeV and other horses, and
- managing human and horse interactions to minimise the risk of infection.

Testing for the virus

The Biosecurity Sciences Laboratory at Coopers Plains in Brisbane which is part of BQ, performs Hendra virus testing. Exclusion testing is performed on samples from horses that are unwell and

show clinical signs of possible infection. This testing is provided at no cost to the submitter. The laboratory also offers fee-for-service health testing for HeV in horses that do not show clinical or other signs of infection.

On weekdays, samples submitted by 2.00pm are tested the same afternoon and results are available after 5.30pm. Testing on other days is dependent on demand and urgency. On weekends and public holidays, there is no scheduled testing service. Non-urgent tests submitted after 2.00pm on Friday and prior to 2.00pm on Monday will be available 5.30pm on the Monday – taking at least three days for a sample submitted late on a Friday. Travel time to transport the sample by road to the Coopers Plains laboratory in Brisbane adds further time delays.

The establishment of a second testing facility in the north of the State and the possibility of offering testing every day of the year were canvassed during the inquiry.

Further in relation to testing, an alternative form of test commonly referred to as a 'stall-side test' has been developed as a further aid in the diagnosis of HeV infected horses. The test is designed to provide a quicker indication of the presence of HeV. A 'stall-side test' may be useful for testing for HeV in potentially unvaccinated horses needing emergency treatment. The term 'stall side test' is a misnomer as no test is being developed that could be used in the field. Several groups are developing these tests including a group headed by Dr Joanne Macdonald, Senior Lecturer in Molecular Engineering, Inflammation and Healing Research Cluster and Genecology Research Centre, at the University of the Sunshine Coast. In testing of archived test samples, Dr Macdonald's test performed as well as BQ's tests, but could be performed in a much faster manner in a location much closer to the horse than the in a central test facility in Brisbane.

Vaccination

Three Queensland Government guidelines support the vaccination of horses against HeV. According to DAF in its *Guideline for veterinarians handling potential Hendra virus infection in horses*:

> Vaccination is the single most effective way of reducing the risk of Hendra virus in horses.

Similarly, Workplace Health and Safety Queensland state in their fact sheet, *Hendra virus – information for veterinarian*s:

> The vaccine is the single most effective way of reducing the risk of Hendra virus infection in horses and provides a work health and safety and public health benefit.

The Hendra Virus Interagency Working Group guideline published by Queensland Health states:

> Widespread uptake of the horse vaccine has the potential to significantly reduce the number and risk of human exposures.

In clinical testing of the vaccine, all vaccinated horses were protected from the disease, infection with HeV did not establish, and the virus was not shed or transmitted from vaccinated horses to other horses or humans.

There is no human vaccine against HeV at this stage.

Limiting horse and flying-fox interaction

All HeV infections in horses have occurred in areas where flying-foxes are active. Flying-foxes are attracted to non-native fruiting trees that are common in paddocks used for horses in urban and peri urban areas. Interactions between flying foxes and horses can be limited through:

- moving horse feed and water containers from under trees to under a shelter
- removing horses from paddocks in which there are flowering or fruiting trees and shrubs

- fencing to restrict horses' access to affected areas
- stabling of horses during times of peak flying-fox activity (usually at dusk and during the night).

Limiting horse and flying-fox interaction also includes relocating horses to areas where flying foxes are not active.

Limiting horse to horse contact

Nationally agreed protocols for the management of Hendra virus infection (version 3.5, 2013) provides instructions for dealing with HeV horses, and other horses categorised as 'close contact animals' and 'low interest animals'. Animals considered to have had close contact with an infected horse and quarantined and subject to testing. All human contact is limited to essential activities.

Low risk animals do not require testing and may be moved if required.

Managing human and horse interactions

There are a range of actions that horse owners, veterinarians and others can take to reduce the risk of exposure to HeV contaminated body fluids from horses:

- minimising close contact with the mouth and nose of a horse
- wearing personal protective equipment (PPE) during procedures that require exposure to horse body fluids
- handwashing
- washing of contaminated clothing
- isolating sick horses from other horses, humans and other animals. This includes not taking sick horses to equestrian events
- cleaning and disinfecting gear such as halters, lead ropes and twitches that are exposed to body fluids from sick horses before the gear is used on other horses
- wearing gloves when cleaning contaminated equipment from sick horses
- covering cuts and wounds
- not allowing horse practitioners such as farriers and equine dentists to work on sick horses, and
- seeking veterinary advice before bringing a sick horse onto a place.

3 The Equivac® HeV vaccine for horses

Equivac® HeV virus vaccine for horses is a 1mL vaccine that is injected intramuscularly. Its indication of use is as an aid in the prevention of clinical disease caused by Hendra virus in horses four months of age or older. The Equivac® vaccine is the only vaccine available for HeV. The vaccine is a 'subunit' vaccine, meaning it contains only a small part of the protein from the virus's surface. The active constituent is the G-Protein (sG) of Hendra virus.

3.1 Development of the vaccine

The HeV vaccine was developed through a partnership between:

- the CSIRO's Australian Animal Health Laboratory
- Pfizer Health (now Zoetis), an arm of the world's largest drug company Pfizer, and
- international research partners including the Henry M Jackson Foundation for the Advancement of Military Medicine (USA) and Uniformed Services University of the Health Sciences (USA).

The vaccine is manufactured and marketed by Zoetis. The HeV vaccine remains the only equine vaccine developed in Australia.

In recognition of the research that underpinned the development of the vaccine, the Hendra Virus Research Team (Australian Animal Health Laboratory) was awarded the 2013 CSIRO Chairman's Medal, honouring the very best in CSIRO research which is of national or international importance. In the following year, the CSIRO Team was also awarded the 2014 Australian Infectious Diseases Research Centre Eureka Prize for Infectious Diseases Research - one of the country's most comprehensive national science awards. This award also recognised the achievement of the provision, through the vaccine, to Australia and the world of a targeted tool to protect people and animals against this deadly virus.[5]

The vaccine became available to veterinarians on 1 November 2012 under a Minor Use Permit. The Australian Pesticides and Veterinary Medicines Authority's (APVMA's) safety and efficacy requirements under the Minor Use Permit were the conditions imposed under registration plus the mandatory recording of vaccinations and the mandatory reporting of adverse events. It was a condition of the Minor Use Permit for all accredited veterinarians to report all adverse events to Zoetis within 48 hours of them being made aware of them. These requirements remained in place for almost three years until the vaccine achieved registration on 4 August 2015. The vaccine was identified as EQUIVAC HEV HENDRA VIRUS VACCINE FOR HORSES (APVMA product number: 68996).

The APVMA varied the registration on 20 January 2016 to provide additional information on the use for foals and pregnant mares. The registration was amended again in July 2016 following assessment by the APVMA of an application from Zoetis for annual boosters following field trials supporting the 12 month duration of immunity following vaccination.

Detailed advice and warnings have been provided by Zoetis with each dose of the vaccine as a condition of the APVMA permit and registration.

[5] Middleton, D. 2016, *Submission No*. 54, pp.8-9.

3.2 Approval of the vaccine for use in Australia

The APVMA has been the statutory authority responsible for the regulation of agvet chemicals since 1993. Before agvet chemical products can be legally sold, supplied or used in Australia, they must be evaluated and registered by the APVMA through the National Registration Scheme for Agricultural and Veterinary Chemicals. The APVMA is responsible for assessing and registering agricultural and veterinary chemical products proposed for supply and use in Australia, and for controlling them up to the point of retail sale. State and territory primary industries departments (including DAF in Queensland) are responsible for regulating and managing the use of agricultural and veterinary chemical products once they are sold.

The APVMA evaluate the safety and performance of chemicals intended for sale in Australia using a systematic, scientific, evidence-based approach, to ensure that the health and safety of people, animals, crops and the environment are protected.

In granting registration of the Hendra vaccine, the APVMA assessed the chemistry and manufacturing aspects of G-Protein (sG) of Hendra virus (the active constituent) and the product, and was satisfied that they meet APVMA criteria. The assessment considered data for information about starting materials for the vaccine, master seeds (source, identity, and purity), culture media, vaccine production, quality control, shelf life and batch release analysis. The adjuvants and other components of the vaccine were already present in several vaccines registered for use in Australia and were determined by the APVMA to be safe based on previous assessment.

In relation to the assessment of safety in horses the APVMA reviewed 21 separate efficacy and safety studies and ten chemistry and manufacture studies, including peer reviews, which supported two separate applications by the registrant. Before granting registration of the product the APVMA was satisfied that the product— when used in accordance with the approved instructions —would be effective as an aid in the prevention of clinical symptoms of the disease caused by Hendra virus in horses four months of age or older.

In its submission, the APVMA explained the efficacy of the vaccine as follows:

> Efficacy studies in horses demonstrate that the vaccine is effective as an aid to alleviate the clinical symptoms of disease caused by the Hendra virus, conclusive data is not yet available to demonstrate that vaccinated horses which become infected with Hendra cannot continue to shed live virus and may present a source of infection to unvaccinated horses or people. The approved label and the APVMA website recommend people take the same steps to protect vaccinated horses from exposure to infection as are recommended for unvaccinated horses. Personal protective equipment should be worn whenever infection is suspected even in vaccinated horses.[6]

The Department of Agriculture and Fisheries accepts the safety and efficacy of the HeV vaccine as determined by the APVMA.[7]

Despite the assurances from the APVMA, the Department of Agriculture and Fisheries and others, horse owners have questioned the vaccine's efficacy and safety. They argue that further testing of the vaccine is warranted on a wider range of horse breeds with differing genetic backgrounds. Horse owners have also claimed that veterinarians have not consistently provided them the manufacturer's warnings and advice provided with the vaccine. It also appears that some veterinarians have deviated from the manufacturer's guidelines and administered the vaccine together with other medicines and to sick horses. The administration of the vaccine contrary to the instructions is

[6] Australian Pesticide and Veterinary Medicines Authority, 2016, *Submission No.197*, p.8.
[7] Department of Agriculture and Fisheries, 2016, *Submission No.218*, p.12.

classified as 'off label'. Where the off label use of the vaccine results in adverse reactions, those reactions are not classified as adverse reactions to the vaccine by Zoetis or the APVMA.

3.3 How the vaccine works

The Hev vaccine works by stimulating a horse's immune system to produce protective antibodies and to recognise a future challenge with the virus. If the horse is subsequently exposed to Hendra, the antibodies will bind with and neutralise the viral particles, preventing them from establishing active infection in the horse. The viral particles bound to the antibody are then further eliminated by the immune system.

3.4 Administration of the vaccine

Only accredited veterinarian are permitted to administer the HeV vaccine. This is a significant departure from other equine medicines that owners may purchase and administer to their horses. Requiring that only veterinarians administer the vaccine may help to ensure the vaccine is properly stored and administered, that horses are clinically assessed before vaccination, that any adverse reactions can be monitored and responded to in a timely manner and that vaccination records are promptly added to the vaccination database.

Vaccination requires a course of two vaccinations three weeks apart followed by 12 monthly boosters. The costs of vaccination in the first year is approximately $300 plus the veterinarians' travel costs. The cost reduces to approximately $100 plus travel costs after the first year.

Horses are microchipped at the time of the first injection as a vaccination record that can be checked with Zoetis using the horse's identification number retrieved from the microchip using a scanner. Correct records of the vaccination status of individual horses is critical to differentiate vaccinated horses from infected horses. Both will return a positive exclusion test for HeV.

3.5 Handling of the vaccine

Like other vaccines, the HeV vaccine is susceptible to damage if stored at temperatures outside the range of 2-8 degrees Celsius. Exposure to heat or freezing temperatures has a cumulative effect on vaccine viability, and veterinarians and horse owners have no way of knowing if this damage has occurred. Once damaged, the potency of vaccines cannot be restored. Maintaining cold storage temperatures for vaccines may be particularly difficult for Queensland veterinarians working in the field and potentially storing vaccine stocks at home. In evidence to the committee, Zoetis representatives advised:

> **Dr L'Estrange:** Vaccines all have storage requirements placed upon them, and these are outlined on the label and are subject to regulatory approval. I guess for a practising veterinarian it would be expected that a veterinarian would carry the vaccine in a cooler container—perhaps with ice bricks, perhaps even in a car fridge—between the clinic and the horse and administer it properly without breaking that cold chain. Having said that, there are differences between various vaccines in their ability to withstand temperature fluctuations. This vaccine would be more robust than a live vaccine. This vaccine is a dead vaccine, and those vaccines are considered to be a little more tolerant than a living vaccine would, which may die if it is subject to heat and whatnot. Having said that, we would expect that veterinarians would comply with the cold chain requirements as outlined on the label.
>
> **CHAIR:** If it was not kept at that temperature what would be the impact? Is it just that it would not work, or would there be other effects?
>
> **Dr L'Estrange:** Potentially it may not work or potentially there may be some increased risk of side-effects.

> **Dr Lehrbach:** That is correct. Under normal circumstances in an individual case we would recommend that sample of the vaccine be replaced.[8]

The committee considered options that would reduce the risks of damaged vaccines being utilised in the field. They include propriety cold chain products that actively monitor high and low temperature breaches throughout the supply chain, and provide a visual pass or fail confirmation of exposure to temperature excursions.

3.6 Requirements to vaccinate

There is no legal requirement to vaccinate horses for Hendra virus. However, many veterinarians have adopted a policy of not treating horses that aren't vaccinated against HeV. Other veterinarians may elect to provide services after assessing risks and conditions of the horse on a case-by-case basis.

Similarly, the organisers of equestrian events in HeV risk areas are increasingly requiring that horses must be vaccinated as a precondition of entry to the events. The motivations for these event entry requirements is often linked to insurance considerations and the difficulty of securing veterinary services for events involving unvaccinated horses. These entry requirements have impacted on the numbers of entrants to equestrian events.

The decision by horse owners not to vaccinate their horses, combined with the difficulties for veterinarians not to treat unvaccinated horses, remains a point of contention for many aggrieved horse owners who submitted or gave evidence to the inquiry. Depending on location and the availability of other veterinarians, owners of unvaccinated horses may be unable to find a treating veterinarian.

3.7 Vaccinations and adverse reaction events

The APVMA collect reports of adverse experience reports about the HeV vaccine through its Adverse Experience Reporting Program (AERP). The program assesses reports of adverse experiences associated with the registered use of a veterinary medicine or agricultural chemical product. Anyone can report an adverse experience to the AERP—ie, farmers, pet owners, gardeners, veterinarians or the public. According to the APVMA, an adverse event report may relate to an adverse reaction presenting in multiple horses. The APVMA submission provides a breakdown for 1,184 adverse event reports related to the HeV vaccine it recorded to 31 March 2016. The APVMA categorises each report as either: 'possible', 'possible/off-label', 'probable', 'probable/off-label', 'unknown' and 'unlikely'.[9]

According to the APVMA, 797 reports (67.3 per cent) were probable, 173 reports (14.6 per cent) were possible, 113 reports (9.5 per cent) were unknown and 93 reports (7.8 per cent) were categorised as unlikely. During the period the adverse events related to, the APVMA understood that 440,438 doses were administered. This suggests an average rate of suspected adverse event reports

[8] L'Estrange, R. & Lehrbach, P., 2015, *Brisbane hearing Transcript*, 7 July, p.5.

[9] 'Probable': a 'probable classifications is given when there is a reasonable association between exposure to a product and the onset of the reported adverse experience, and the description of the presenting signs is consistent (or plausible) with the known pharmacology and toxicology of the product and there is no other alternative explanation. A 'possible' classification is given where there is reasonable association between the exposure to the product and the onset of the reported adverse experience. An 'unlikely' classification is given when sufficient information exists to establish that the adverse experience was not likely to have been associated with the product. An 'unknown' classification apples when reliable data are unavailable or are insufficient to make an assessment of an adverse experience.

(either probable or possible) of one reported adverse event for every 450 vaccination doses administered.

Zoetis reported slightly different figures based on 1,255 reports it assessed as either 'probably' or 'possibly' related to the use of the vaccine. This translates to an approximate incidence for reaction reports of one in every 350 doses, or around 0.3 per cent of doses administered. Zoetis also advise that the vast majority of reported adverse reactions involve clinical signs listed within the vaccine label as potential side effects of the vaccine.

The APVMA's processing of adverse reactions reports appears to be slow. The authority hasn't released annual reports for the adverse event system since 2013. These delays combined with delays in the agency's investigation of adverse reaction reports may have weakened the APVMA's system. The fear of adverse reactions is a major factor in owners' decisions not to vaccinate their horses. It appears that many owners are also unaware that they can self-report adverse reaction events directly to the APVMA.

The APVMA published on its website a summary of adverse experience reports made to the APVMA about the HeV vaccine. This summary includes information about the numbers and 'reaction incidence' or risks of adverse reactions calculated using the numbers of doses administered. From the 440,438 doses of the vaccine administered to 31 March 2016, the APVMA classified only seven horse deaths as 'possibly' related to the vaccine. No deaths were classified as 'probably' related to the vaccine.

In their submission, Zoetis surmise that the mandatory reporting regime for adverse events imposed during the Minor Use Permit stage instead of the normal 'spontaneous' reporting requirement, made veterinarians and the public more aware of avenues for reporting adverse events, and may have resulted in increased reporting of adverse events.

Submissions from many of the horse owners who participated in the inquiry and evidence given by at the committee's hearings paint a different picture of adverse reactions to the vaccine. Rather than a statistical rarity, as the adverse reaction statistics provided by Zoetis and the APMVA would suggest, horse owners describe adverse events linked to the HeV vaccine as commonplace. Horse owners also describe their disagreements with veterinarians over the diagnosis of their horses' condition and, in some cases, the decision by veterinarians not to report their horse's condition as an adverse reaction to the vaccine.

To better understand how adverse reactions to the HeV vaccine have been reported and handled, the committee conducted a short survey of horse owners, veterinarians and others to identify horse deaths they believed to be connected to an adverse reaction to the HeV vaccine. Survey participants reported on 20 separate horse deaths since 2013, including sixteen deaths in 2015 and five in 2016. According to survey responses received:

- eight deaths occurred in New South Wales and twelve in Queensland
- two of the deaths were not previously reported as adverse reactions to the vaccine
- in four of the twenty deaths reported, the horse died more than a year after the vaccination, and
- necroscopies were performed on four of the horses, and blood tests were conducted on seven.

The survey results highlight some of the difficulties associated with the reporting and interpreting of adverse reactions to vaccinations.

3.8 Guidelines for veterinarians and others

The table below provides the details of three separate Queensland Government guidelines that provide advice to veterinarians and others in their dealings with Hendra risks:

Agency		
Department of Agriculture, Fisheries and Forestry	Queensland Health	Workplace Health and Safety Queensland
Guidelines		
Guidelines for veterinarians handling potential Hendra virus infection in horses. Version 5.1	Hendra virus infection prevention advice. Hendra Virus Interagency Working Group	Hendra virus – information for veterinarians
Aim/purpose		
"…specifically intended to assist veterinarians in the safe investigation of illness in horses where Hendra virus (HeV) is considered as a possible cause"	"…to prevent HeV infections in humans"	Not stated
Published		
2013	2014	2015

The DAF (Biosecurity Queensland) guideline, now three years old, is a substantial document targeted at veterinarians handling horses that may be infected with HeV. The Queensland Health guideline released in 2014 is also detailed, and has a clear focus on public health risks. It provides general infection control advice for veterinarians and animal handlers. The Workplace Health and Safety Queensland guideline is a short factsheet that discusses the virus and risks, PPE requirements and some precautions that treating veterinarians should follow. It also refers the reader to workplace health and safety precautions for HeV that are detailed in Biosecurity Queensland's guidelines. According to Workplace Health and Safety Queensland, the fact sheet about Hendra virus are under review.[10]

Guidelines for veterinarians dealing with unvaccinated horses

The BQ guidelines advise veterinarians to adopt standard precautions, as developed by the AVA, for all contact with horses. According to the guideline, this includes:

- Cover cuts and abrasions with a water-resistant dressing and adopt personal hygiene, including hand hygiene before and after horse contact, between horses and after removing PPE.
- PPE including disposable gloves for contact with blood, body fluids, excretions, non-intact skin and mucous membranes, and protective clothing and facial protection where there is a risk of droplets, splashes and sprays of blood and body fluids.
- Appropriate reprocessing of reusable veterinary equipment and horse gear after use and between horses.
- Safe handling, transport, storage and disposal of clinical waste (including sharps).
- Safe handling, transport, storage and cleaning of contaminated clothing and other laundry.
- Safe handling, transport, storage and disposal of pathology specimens.
- Safe handling and disposal of animal excreta and stable manure.

[10] Goldsborough, P., 2016, *Brisbane Hearing Transcript*, 6 July, p.32.

- Stable hygiene and environmental cleaning using appropriate cleaning agents and disinfectants.
- Management of blood/body fluid spills and accidental blood/body fluid exposures and sharps injuries.[11]

The guidelines also advise veterinarians:

> Adopt standard precautions plus airborne precautions for high risk procedures on clinically normal horses (e.g. necroscopy, aerosol-generating procedures involving nasopharyngeal secretions) and for contact with potential or confirmed HeV. This includes PPE as detailed in section 8.[12]

Section 8 of the guidelines titled 'Infection control and biosecurity precautions' includes a section on PPE. It states:

> Work health and safety legislation requires the person conducting a business or undertaking to ensure that PPE provided to workers is suitable having regard to the nature of the work and any hazard associated with the work, and is of a suitable size and fit and reasonably comfortable for the worker who is to use or wear it. The PPE must be maintained, repaired or replaced so that it continues to minimise risk, including by ensuring that it is clean and hygienic, and in good working order. The person must also ensure, so far as is reasonably practicable, that the PPE is used or worn by the worker or any other person at the workplace.[13]

For veterinarians, the property where they treat a horse is a 'workplace' for the purposes of the obligations under the *Workplace Health and Safety Act 2011*. This part of the guideline makes veterinarians liable for providing suitable PPE to workers, the horse owner and any other person at the workplace "…having regard to the nature of the work and any hazard associated with the work". The veterinarian is also responsible for "…ensuring, so far as is reasonably practicable, that the PPE is used or worn by the worker or any other person at the workplace."[14]

Later the guidelines state:

> People in close proximity must wear the same PPE as the veterinarian.[15]

The Workplace Health & Safety guidelines stipulate the minimum standard of face mask that must be worn for disposal to bio-aerosols:

> The minimum level of respiratory protection for exposure to bio-aerosols is a disposable P2 respirator and it is important to note that surgical masks do not provide respiratory protection.[16]

The BQ and Workplace Health & Safety Queensland guidelines also provide advice for veterinarians if there is a potential case of HeV in a horse on the premises.

Problems with the guidelines

Veterinarians raised concerns about the guidelines for PPE which they consider to be impractical, the importance of allowing veterinarians to exercise their clinical judgement and the critical importance that guidelines must not be given the status of mandatory requirements. They also raised concerns that the guidelines do not cover common scenarios.

[11] Department of Agriculture and Fisheries, 2013, *Guidelines for veterinarians handling potential Hendra virus infection in horses,* pp.18-9.
[12] Department of Agriculture and Fisheries, 2013, p.19.
[13] DAF, 2013, p.21.
[14] Department of Agriculture and Fisheries, 2013, p.21.
[15] DAF, 2013, p.42.
[16] Workplace Health & Safety Queensland, 2015, *Hendra virus – information for veterinarians*, p.2.

The AVA submitted to the committee that the guidelines, originally provided as recommendations for action, are now used to mandate the responses of veterinarians when faced with a suspect Hendra virus case, and to condition insurance policies. The association's submission explains:

> …legal charges are being laid against veterinarians who are alleged to have not complied with particular aspects of the guidelines. The primary veterinary insurer will cover veterinarians for professional indemnity and liability in the event of a confirmed Hendra virus case if they can demonstrate full compliance with the government guidelines in handling the case. As a result of the changed environment, and due to difficulties applying these guidelines in practical field situations, these guidelines should be combined into a single set of clear guidelines for veterinarians and the general public.[17]

The Queensland Endurance Riders Association raised concerns about the complexity of the guidelines and people's inability to interpret and follow them. The association's president said:

> At any single event we have a whole bunch of people down a line that are volunteering their services as officials throughout an event. If by chance an incursion of Hendra was at an event, all these people—who are just ordinary, everyday people not trained in specific biosecurity protocols—have to follow a set of guidelines that they do not properly understand. It is incredibly difficult to ask these people to put their—I am not going to say their lives on the line, but it just becomes incredibly difficult for these people to fulfil their obligations of the Biosecurity Act and Workplace Health and Safety when they are unclear on the outcomes that may befall them.[18]

[17] Australian Veterinary Association, 2016, *Submission No. 186,* P.7.

[18] Bou, G., 2015, *Brisbane Hearing Transcript*, 6 July, p.29.

4 The findings of the inquiry

4.1 Hendra risks

Hendra virus infection is a relatively uncommon, yet usually fatal, disease risk for horses in coastal and hinterland areas where populations of flying foxes are active, particularly black and spectacled flying foxes. Horse to horse transmission of the virus through contamination of equipment or surfaces with infectious body fluids, is also is possible though uncommon. Human infections from HeV infected horses are even less common than horse infections, but are usually fatal.

Veterinarians and others who work in close contact with body fluids from horses that are, or may be, infected with HeV are most at risk. Given that horses may shed the virus for three days before clinical signs of the disease become evident, veterinarians and other horse care professionals need to be alert to their risk of infection whenever performing high risk procedures on horses.

4.2 Costs of risk mitigation measures

Some measures to limit horse-flying-fox interactions are inexpensive. They include moving water and feed under cover and fencing off paddock areas near trees. Other measures such as night stabling and relocating horses could involve significant costs to horse owners.

Vaccinating a horse with the HeV vaccine costs approximately $300 per annum plus travel costs for the veterinarian. The cost reduces to approximately $100 plus travel costs annually after the first year.

Limiting horse-human interaction and infection risks also involve a range of measures that generally have little or no cost to the horse owner. They include handwashing and washing veterinary equipment after use. Others such as wearing PPE involve higher costs.

All mitigation measures benefit horse owners, veterinarian and other horse care professionals.

Reducing the health risks associated with HeV infections will also reduce costs to government associated with the treatment of human HeV cases.

4.3 The development, trial and approval processes for the HeV vaccine

The development of the HeV vaccine was the product of award-winning research led by the CSIRO.

The HeV vaccine has been appropriately and extensively tested for safety and efficacy, based on the evidence provided by government and other experts. Regardless of the testing, the path to registration of the vaccine was atypical and this may have led some people to question if the vaccine was thoroughly tested prior to being released.

The APVMA's registration of the vaccine was predicated on its satisfaction that that the vaccine—when used in accordance with the proposed instructions—would:

- not be an undue hazard to the safety of people exposed to it during its handling or people using anything containing its residues, and
- not be likely to have an effect that is harmful to human beings, and
- not be likely to have an unintended effect that is harmful to animals, plants or the environment.

The vaccine has now been in use for four years with over 440,000 doses administered in this time.

The APVMA continues to monitor and track adverse reports of reactions and other issues that may arise with the vaccine.

The Department of Agriculture and Fisheries has accepted the APVMA's determinations regarding the efficacy and safety of the vaccine.

4.4 The incidence and impact of adverse reactions to the vaccine

The APVMA, Zoetis and the AVA have argued that the levels of adverse reactions to the HeV vaccine are low and well within the normal acceptable range. The APVMA has reported only seven deaths of horses 'possibly' linked and no deaths 'probably' linked to vaccinations to date.

Despite these statics, many horse owners are adamant that adverse reactions to the vaccine are more prevalent and under-reported (by vets to Zoetis to APVMA, and then reported by APVMA), and that vets and Zoetis have clear vested interests in not reporting adverse reactions.

The committee's own survey of horse deaths highlighted challenges with adverse event reporting.

4.5 Whether the guidelines/procedures required for veterinarians attending horses that are not vaccinated against HeV are proportionate to the consequences

The Biosecurity Queensland guidelines provide standard precautions, as developed by the AVA, for all contacts by veterinarians with horses. They include covering cuts and abrasions, personal hygiene, and PPE including disposable gloves, and protective clothing and facial protection where there is a risk of droplets, splashes and sprays of blood and body fluids. The guidelines also advise the veterinarian to adopt further precautions with more extensive PPE for high risk procedures on clinically normal horses and for contact with potential or confirmed HeV.

The guidelines are proportionate to the consequences and should be observed by veterinarians regardless of whether a horse is vaccinated for HeV.

4.6 Impacts on the equine industry and the economy from veterinarians applying a policy not to treat unvaccinated horses

It is impossible to estimate the impacts on the equine industry from veterinarians applying a policy not to treat unvaccinated horses. The number or proportion of veterinarians who no longer offer treatment to unvaccinated horses is unknown. There are potentially positive and negative impacts to consider.

4.7 The impacts of Workplace Health and safety actions on the decisions by veterinarians not to attend unvaccinated horses and results of previous WH&S investigations where there have been human infections

The fear of being prosecuted by Workplace Health & Safety Queensland for breaching guidelines for the handling of potential Hendra virus infections in horses has been raised by veterinarians throughout the inquiry as one of several factors in their decision not to treat unvaccinated horses.

Investigations of the seven recorded human HeV infections have concluded that all seven cases had very close contact with sick horses and/or contaminated body fluids from HeV infected horses.

Appendices

Appendix A – List of submitters

- 1 - Ms Carol Smith
- 2 - Confidential submission
- 3 - Louisa Wood
- 4 - Anna Collis
- 5 - Simone McArdle
- 6 - Vere Nicolson
- 7 - Brian Kennedy
- 8 - Gemma Antrobus
- 9 - Marion Harriott
- 10 - Ginny and Major Wilson
- 11 - Southwood Saddlery and SW Equestrian Wholesalers
- 12 - Rockhampton Veterinary Clinic
- 13 - Valley Vet Surgery Pty Ltd
- 14 - EQUATHON Holdings
- 15 - Susan Cunningham
- 16 - Elizabeth Gooch
- 17 - Jennifer Crane
- 18 - Wendy Sullivan
- 19 - Heidi Grimson
- 19 - Heidi Grimson - Supplementary submission
- 19 - Heidi Grimson - Supplementary submission
- 20 - Kallon Park Equestrian Centre
- 21 - Pauline Fawcett
- 22 - Dennis Richardson
- 24 - Tanya Dearden
- 25 - Kylee Chandler
- 26 - Chris Bailey
- 27 - Kevin Squire
- 28 - Marion Carrick
- 29 - Julie Lannen
- 30 - Sarah Allen
- 30 - Sarah Allen - Supplementary submission
- 31 - Dr Edith Hampson
- 32 - Madeline Horne
- 33 - Australian Endurance Riders Association
- 34 - Lisa Hayes
- 35 - Derina McLaughlin
- 36 - Jared Lacco
- 37 - Manly Road Veterinary Hospital
- 38 - Helen Stokes
- 39 - Jodie Greer
- 40 - Rebecca Porter
- 41 - Dr Steve Dennis
- 42 - Trish Clarke
- 43 - Dee Bilbrough
- 44 - Catherine Angus

- 45 - Colleen Elson
- 46 - Nicola Wright
- 47 - Kathryn Anderson
- 48 - Linn Edstrom
- 49 - Sally Cooper
- 50 - Abigail Vaughan
- 51 - Ianuk Athien
- 52 - Maree Lococo
- 53 - Amanda Gallen
- 54 - Dr Deborah Middleton
- 55 - Zoe Bobbermein
- 56 - Daisy-May Denny
- 57 - Robert J Fitzgerald
- 58 - Jeromy Pangrazio
- 59 - Michelle Ryan
- 60 - Dr Damien McGinley
- 61 - Sharon Ciranni
- 62 - Paula Pangrazio
- 63 - Kylie Thurlow
- 64 - Danyell Grainger
- 65 - Tasmiya Hussein
- 66 - Saskia Smith
- 67 - Vicki Henderson
- 68 - Patricia Jeffrey
- 69 - Andrew Vermenten
- 70 - Sharon Wheatley
- 71 - Glass House Holistic Veterinary Services
- 72 - Scone Equine Hospital
- 73 - Manly Road Veterinary Hospital
- 74 - Kathryn Wilson
- 75 - Shona Olsen
- 76 - Manly Road Veterinary Hospital
- 77 - Deborah Holloway-Hill
- 78 - Dr Tanya Berube
- 79 - Noel Riley & Associates Pty Ltd
- 80 - Dr Rebecca Bannan
- 81 - Dr Serena Sabourin
- 82 - Dr Fraser Galloway
- 83 - Dr Kylie Ewart
- 84 - Dr Charles Bunce
- 85 - Jennie Lea
- 86 - Mobile Vet
- 87 - Livestock Veterinary Services
- 88 - Dr Lloyd Varga
- 89 - EBB Veterinary Services
- 90 - Confidential submission
- 91 - Christine Lee
- 92 - Dr Doug English
- 93 - Dr Cristy Secombe
- 94 - Ballarat Veterinary Practice Equine Clinic

- 95 - Emily Baxter
- 96 - Dr Leanne Begg
- 97 - Dr Rosemary Craig
- 98 - Agnes Banks Equine Clinic
- 99 - Jeany Heague
- 100 - Jackie Bratley
- 101 - Vivien Butler
- 102 - Craig Simon
- 103 - Dr Jennette O'Rielly
- 104 - Marina Samuels
- 105 - Catherine Macleod
- 106 - Dr Bob Mason
- 107 - M.T.N. Equine Reproduction Services
- 108 - Confidential submission
- 109 - Anna Kettlewell
- 110 - Sharon Kent
- 111 - Beaudesert Cutting & Western Performance Club
- 112 - Australian Lot Feeders' Association
- 113 - Ruth Gough
- 114 - The Royal Society for the Prevention of Cruelty to Animals Queensland Inc (RSPCA Qld)
- 115 - Thoroughbred Breeders Queensland Association Inc
- 116 - Jennifer Thake
- 117 - Taylor Snowdon
- 118 - Scenic Rim Veterinary Service
- 119 - Confidential submission
- 120 - Confidential submission
- 121 - North Queensland Equine Clinic
- 122 - Brookfield Horse and Pony Club Inc
- 123 - Dr Kate Savage
- 124 - Jacqueline Stocker
- 125 - Kilcoy Vet Practice
- 126 - Confidential submission
- 127 - Confidential submission
- 128 - Tableland Veterinary Service Pty Ltd
- 129 - Scone Equine Hospital
- 130 - Caiwen Cusworth
- 131 - Manly Road Veterinary Hospital
- 132 - Pacific Animal Consulting
- 133 - Dr Sarah Van Dyk
- 134 - Felicity Boughen
- 135 - Dr Andrew Morley
- 136 - Kate Hutchinson
- 137 - Confidential submission
- 138 - Roderick G Dunn
- 139 - Manly Road Veterinary Hospital
- 140 - Queensland Endurance Riders Association Inc
- 141 - Racing Queensland
- 142 - Carmen Broderick
- 143 - Warwick Vet Clinic
- 144 - Janet Stephens

- 145 - Wilson Veterinary Services Pty Ltd
- 146 - Robyn O'Brien
- 147 - Darling Downs Vets
- 148 - Esk Veterinary Services
- 149 - Dr Jenna Poppitt
- 150 - Dr Kylie Crawford
- 151 - Queensland Horse Council Inc.
- 152 - Confidential Submission
- 153 - Stabler and Howletter Veterinary Services
- 154 - Peak Crossing Veterinary Services
- 155 - Kuranda and Mureeba Veterinary Services
- 156 - Dr Asher Dessaix
- 157 - Confidential Submission
- 158 - Joanne Osborn
- 159 - Wyong Equine Clinic
- 160 - Confidential Submission
- 161 - Sunrise Dressage Stables
- 162 - Dr Linda Dillenbeck
- 163 - Tableland Veterinary Service
- 164 - Flash Veterinary Clinic
- 165 - Tenterfield Veterinary Clinic
- 166 - Confidential Submission
- 167 - Sonia Jones
- 168 - Confidential Submission
- 169 - Frances Dubickas
- 170 - Jeff Huxtable
- 171 - Melissa Huxtable
- 172 - Eumundi Equine Veterinary Practice
- 173 - Dr Katelyn McNicol
- 174 - Leanne Cartwright
- 175 - Chris Nichols
- 176 - Willandra Park Warmbloods Trust
- 177 - Paul Cassidy, General Manager, Guild Insurance
- 178 - Kerry Morley
- 179 - Pauline Drew
- 180 - Tracey Huenerberg
- 181 - Dr R L Mason
- 182 - Hobart Equine Practice
- 183 - School of Veterinary Science
- 184 - Confidential Submission
- 185 - Dr C P Johnson
- 186 - Australian Veterinary Association Ltd
- 187 - Confidential Submission
- 188 - Redlands Veterinary Clinic
- 189 - Confidential Submission
- 190 - Confidential Submission
- 191 - Anne Barnes
- 192 - Dr Tessia Salmond
- 193 - Alan Francis Guilfoyle
- 194 - Dr Brendan Brieffies

- 195 - Brookleigh Stud
- 196 - Liz Vansleve
- 197 - APVMA
- 198 - Confidential Submission
- 199 - Confidential Submission
- 200 - Dr P A Reid
- 201 - QHIA
- 202 - Annabel Sidebottom
- 203 - Confidential Submission
- 204 - DG Westerner Riding Apparel
- 205 - North Coast Equine Veterinary Services
- 206 - Dr Joan MacDonald
- 207 - Confidential Submission
- 208 - Pastoral and Veterinary Services
- 209 - Confidential submission
- 210 - Samford Valley Veterinary Hospital
- 211 - Equestrian Queensland
- 212 - Kirani Heeremans
- 213 - Derek Major
- 214 - Confidential Submission
- 215 - Confidential Submission
- 216 - Zoetis Australia Pty Limited
- 217 - Frank John Low
- 218 - DAF
- 219 - Confidential Submission
- 220 - Caroline Payne
- 221 - Caroline Payne
- 222 - Confidential Submission
- 224 - Abbey Lovell
- 225 - Dr Keith Law
- 226 - Dr Kate Averay
- 227 - Ulrich Klatte
- 228 - Heather Bowditch
- 229 - Confidential Submission
- 230 - Confidential Submission
- 231 - Confidential Submission
- 232 - Confidential Submission
- 233 - Confidential Submission
- 234 - Jennie Lea
- 235 - Confidential Submission
- 236 - Pauline Williams
- 237 - Silkbridge Equine Services
- 238 - Dr Caroline Spelta
- 239 - Leigh Pearson
- 240 - Office Industrial Relations, Queensland Treasury
- 241 - Dale Anderson
- 242 - Marian Williams
- 243 - Kate Taylor
- 244 - Marni Baker
- 245 - Dennis and Lin Richardson

- 246 - George Vaughn
- 247 - Dr Margaret Williams
- 248 - Confidential Submission
- 249 - Dawn Heath
- 250 - Donna Anderson
- 251 - Donna Anderson
- 252 - Donna Anderson
- 253 - Pam Haysom
- 254 - Ruth Brown
- 255 - Sara Calliss
- 256 - Confidential Submission
- 257 - Debbie Hage
- 258 - David Perry
- 259 - Michelle Ross
- 260 - Bev McAulay
- 261 - Kerry Scott-Yardley
- 262 - Confidential Submission
- 263 - DVM Christophe Detourmignies
- 264 - Sydney Wide Equine Service
- 265 - Tremayne Stud
- 266 - Kellarni Downs Equestrian
- 267 - Lyn Danastas
- 268 - Trent Jorgensen
- 269 - John Wallace
- 270 - Vanessa Starkey
- 271 - Kelly Hinton
- 272 - Wanda Lyon
- 273 - Townsville Vet Clinic
- 274 - Marianne Irvine
- 275 - Confidential Submission
- 276 - Confidential Submission
- 277 - Confidential Submission
- 278 - AHIC
- 279 - Confidential Submission
- 280 - Louise Cable-Tuck and David Frazer
- 281 - Nichole Thompson
- 282 - Roberta and Niels Lochtenberg
- 283 - Natalie Beohm
- 284 - Donna McSweeney
- 285 - Dr Megan Devlin
- 286 - Confidential Submission
- 287 - Suartholme School
- 288 - Confidential Submission
- 289 - Wendy Kiemann
- 290 - Confidential Submission
- 291 - RNA
- 292 - Emma Flegman
- 293 - Suzanne Benn

Appendix B – List of witnesses at the public briefing held on 22 March 2016

Witnesses	
Department of Agriculture and Fisheries	
1	Dr Allison Crook, General Manager, Animal Biosecurity and Welfare and Chief Veterinary Officer, Biosecurity Queensland
2	Dr Jim Thompson, Chief Biosecurity Officer, Biosecurity Queensland
Equine Veterinarians Australia	
3	Dr Nathan Anthony, Hendra Virus Spokesperson and Past President
4	Dr Ben Poole, State Representative for Queensland
Queensland Treasury	
5	Mr Paul Goldsbrough, Executive Director, Policy and Workers Compensation Services, Office of Industrial Relations
6	Ms Julie Nielsen, Executive Director, Compliance and Business Engagement, Office of Industrial Relations

Appendix C – List of witnesses at public hearings

Cairns - 4 July 2016
Dr Jamie Wearn, Equine Clinical Studies Coordinator, Senior Lecturer and Specialist in Large Animal Internal Medicine, James Cook University
Dr Mick Ruppin, Veterinarian, Tablelands Veterinary Service, Malanda
Mr Dennis Richardson, Private capacity
Dr Stephanie Williams, Veterinarian, Tableland Veterinary Service, Malanda
Dr Peter Lynch, Veterinarian, Livestock Veterinary Service, Toowoomba
Ms Sheila Tait, Private capacity
Jimboomba 5 July 2016
Mr Dale Anderson, Private capacity
Mr Rob Kerslake, President, Queensland Horse Council
Dr Doug English, Private capacity
Dr David Ahern, Veterinarian, Scenic Rim Veterinary Service
Ms Jacqueline Huppert, Private capacity
Ms Natalie Elizabeth Beohm, Private capacity
Dr Donna McSweeney, Private capacity
Mr David Manuel, Private capacity
Brisbane 6 July 2016
Mr Alan Norden, Executive Director, Registration Management and Evaluation, Australian Pesticides and Veterinary Medicines Authority
Dr Phillip Lehrbach, Regulatory Affairs Manager, Zoetis Australia Pty Ltd
Dr Richard L'Estrange, Veterinary Operations Manager, Zoetis Australia Pty Ltd
Dr Nathan Anthony, Australian Veterinary Association, Equine Veterinarians Australia
Ms Marcia Balzer, Australian Veterinary Association, Equine Veterinarians Australia
Dr Peter Reid, Australian Veterinary Association, Equine Veterinarians Australia
Mr Mat Helmers, CEO, Equestrian Queensland
Mr Kent Wells, President, Queensland Horse Industry Alliance
Ms Ros Macdonald, Brookfield Horse and Pony Club
Professor Nigel Perkins, School of Veterinary Science, University of Queensland
Dr Peter Reid, Private capacity
Ms Carol Smith, Private capacity
Ms Jennie Lea, Private capacity
Mr Gerard Bou, President, Queensland Endurance Riders Association
Dr Allison Crook, General Manager, Animal Biosecurity and Welfare, Department of Agriculture and Fisheries
Mr Paul Goldsbrough, Executive Director, Workers Compensation and Policy Services, Office of Industrial Relations, Queensland Treasury
Redlands 6 July 2016
Dr David Lovell, Veterinarian, Redlands Veterinary Clinic
Ms Sharon Carroll, Private capacity.
Dr Kevin Squire, Veterinarian, Byron Bay Equine Practice
Dr Derek Major, Veterinarian, Agnes Banks Equine Clinic
Ms Donna Anderson, Private capacity
Dr Patricia Clarke, Veterinarian, Manly Road Veterinary Hospital
Dr Christine Kidd, Practice Principal, Manly Road Veterinary Hospital
Mr Robert Allen, Private capacity

Mrs Sarah Allen, Private capacity
Nambour 7 July 2016
Dr Steve Dennis, Veterinarian, Private capacity
Dr Tony Doherty, Veterinarian, Private capacity
Dr Ben Poole, Veterinarian, Private capacity
Dr Margaret Williams, Private capacity
Dr Joanne Macdonald, Senior Lecturer in Molecular Engineering, Inflammation and Healing Research Cluster and Genecology Research Centre, University of the Sunshine Coast
Ms Madeline Horne, Private capacity
Dr Robert Mason, Private capacity
Ms Heather Bone, Private capacity
Ms Amanda Clifford, Private capacity
Mr Brian Kennedy, Private capacity
North Rockhampton - 7 July 2016
Dr Tessia Salmond, Veterinarian, Clermont Veterinary Surgery
Ms Marni Baker, Private capacity
Dr Jim Kerr, Veterinarian
Brisbane 31 August 2016
Dr Allison Crook, Chief Veterinary Officer and General Manager, Animal Biosecurity and Welfare, Biosecurity Queensland, Department of Agriculture and Fisheries
Dr Phil Lehrbach, Director, Regulatory Affairs, Zoetis Australia Pty Ltd
Dr Richard L'Estrange, Veterinary Operations Manager, Zoetis Australia Pty Ltd
Dr John Messer, Director, New Product Development, Regulatory and Scientific Affairs, Zoetis Australia Pty Ltd
Dr Maria Neale, Sales and Marketing Manager, Zoetis Australia Pty Ltd
Ms Kareena Arthy, Chief Executive Officer, Australian Pesticides and Veterinary Medicines Authority
Mr Alan Norden, Executive Director, Registration Management and Evaluation, Australian Pesticides and Veterinary Medicines Authority
Dr Nathan Anthony, President, Equine Veterinarians Australia
Dr Peter Reid, Equine Veterinarians Australia
Mr Jeffrey Wilkinson, Executive Officer, Equine Veterinarians Australia
Mr Bradley Bick, Director, Work and Electrical Safety Policy, Workplace Health and Safety Queensland Dr Heidi Carrol, Medical Director, Communicable Diseases Branch, Prevention Division, Queensland Health
Ms Debra El Saadi, Manager, Notifiable Diseases Prevention & Control, Communicable Diseases Branch, Prevention Division, Queensland Health
Mr Paul Goldsbrough, Executive Director, Workers' Compensation and Policy Services, Workplace Health and Safety Queensland

Statement of Reservation

PO Box 1968
Mount Isa QLD 4825

Mount Isa
74 Camooweal Street
P: 07 4730 1100

Cloncurry:
27 Ramsay Street
P: 07 4410 4100

Robbie Katter MP
Member for Mount Isa

Thursday October 20 2016

RE Statement of Reservation on Report No 24, Hendra virus EquiVacc® vaccine and its use by veterinary surgeons in Queensland.

I write to lodge a Statement of Reservation to the Agriculture and Environment Committee on the Report No 24, Hendra virus EquiVacc® vaccine and its use by veterinary surgeons in Queensland.

It is accepted that the committee was required to consider a number of factors in preparing its report, including (amongst other things);

- whether the guidelines/procedures required for veterinarians attending horses that are not vaccinated against HeV are proportionate to the consequences, and
- the impact of Workplace Health and Safety actions on the decision by veterinarians not to attend unvaccinated horses and results of previous Workplace Health and Safety HeV investigations where there have been human infections.

Although I'm generally supportive of the way in which the committee has conducted this inquiry and the recommendations it has made, I would like to express my concern at a number of factors related to the practical implications of these recommendations for veterinarians in regional and remote areas.

My concerns specifically relate to the application of Workplace Health and Safety Queensland and Biosecurity Queensland (BQ) guidelines on the use of Personal Protective Equipment (PPE) and the workplace health and safety requirements. A number of the committee's recommendations pertain to these issues, including;

Recommendation 6

That the Biosecurity Queensland guidelines for the treatment of horses be revised to: include information on high risk areas for Hendra virus; reflect the latest research into risks for Hendra virus, and how best to manage those risks; clarify the requirements for veterinarians to wear personal protective equipment while giving Hendra vaccine to horses; and clarify specific guidelines for horse care professionals other than veterinarians.[1]

Recommendation 7

That as part of the revision, WH&S Queensland provide information for veterinarians and other horse care professions about Hendra virus risks and how to fulfil WH&S responsibilities while providing low risk as well as high risk treatments to horses.[2]

As noted in the report, "individual veterinarians raised concerns that the WH&S Queensland and BQ guidelines do not cover every possible scenario"[3]. It is reasonable to expect that scenarios which are not contemplated by the guidelines are more likely to arise in regional and remote areas. In such cases veterinarians, and other directly affected parties, will be required to exercise discretion in the actions they take to minimise risk to human and animal welfare.

[1] Report No. 24, 55th Parliament, Agriculture and Environment Committee, October 2016, p. 1
[2] Report No. 24, 55th Parliament, Agriculture and Environment Committee, October 2016, p. 1
[3] Report No. 24, 55th Parliament, Agriculture and Environment Committee, October 2016, p. 14

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