



Research Director
Agriculture and Environment Committee
Parliament House
George Street
Brisbane Qld 4000

Re: Hendra virus (HeV) EquiVacc[®] vaccine and its use by veterinary surgeons in Queensland

22/4/16

Dear Agriculture and Environment Committee,

I write in reference to the Inquiry into the Hendra virus (HeV) EquiVacc[®] vaccine and its use by veterinary surgeons in Queensland. I understand that this vaccine minimises the risk of Hendra virus exposure to veterinarians and horse owners. I also understand that not all horse owners are able to vaccinate their horses for a variety of reasons, and that in these cases other measures are used to reduce the risk of Hendra virus transmission. I have also read the transcript of proceedings for the “Public briefing – Hendra virus (HeV) EquiVacc[®] vaccine and its use by veterinary surgeons in Queensland,” which occurred on March 22, 2016.

The primary reason for my letter is to respond to a comment made by Dr Anthony Nathan (Hendra virus spokesperson and Past president, Equine veterinarians, Australia) where he says <Page 11> “The big issue for us is the fact that we cannot simply, quickly and efficiently identify a Hendra horse. If we could, we would not be here having this discussion; it would be easy to manage our risk.”

I would like to inform the committee of some new research that has been performed in my research group at the University of the Sunshine Coast. We have developed a method for rapid detection of Hendra virus. The method analyses the same molecular marker (RNA) that the current real-time PCR protocol used by Biosecurity Queensland uses, and appears to be of equal performance to the Biosecurity Queensland method. The method detects HeV RNA in less than 10 minutes, and requires only simple equipment to perform the test – equipment that is standardly available in any vet clinic. In collaboration with the Department of Agriculture and Fisheries (Dr. Craig Smith), we have demonstrated this method can be used to detect Hendra virus in horses known to be infected, and does not detect Hendra virus in horses known to be absent of the disease. We are now preparing the data from our rapid Hendra virus test for publication in the scientific literature. I believe that this method could be relatively easily adapted for use by vets in their vet clinics, and am actively seeking regulatory advice and funding to implement and trial the test for veterinarian use. I thought it was important for the committee to realise that there are now new technologies that might allow for easy detection of Hendra virus in horse samples, that does not require a delay in obtaining the

results due to having to ship the samples to Brisbane. It also minimises the risk of Hendra virus accidents that might be associated with the shipment of samples between cities.

In addition to my above primary submission, I would also like to make the following observations, based on discussions I have had with horse owners and veterinarians, as well as a review of the literature.

- *Biosecurity risk in vets not attending sick horses:* I understand that veterinarians sometimes exercise the right to not visit/treat a horse if the horse is unvaccinated. I am quite concerned by this practice from a biosecurity risk point of view. If these unvisited unvaccinated horses turned out to have Hendra virus, wouldn't this lead to a risk of an outbreak occurring unbeknownst to Biosecurity Queensland? If no PPE is supplied and no containment protocols are implemented, this would increase the risk of transmission to other horses and horse owners, which could lead to a much larger outbreak before it is detected and contained by Biosecurity Queensland.
- *Confusion over risk of transmission to humans.* In the transcript of proceedings, several of those speaking indicate the virus is spread from horses to humans by close contact with bodily fluids. However, Ms Julie Nielsen (Executive Director, Compliance and Business Engagement, Office of Industrial Relations, Queensland Treasury) states that <page 25> "the virus is transmitted by fluids or aerosols." I performed a thorough review of the scientific literature, and determined that all of the human cases point to infection only when directly exposed to high levels of infected horse secretions, and not all humans who are exposed end up getting infected, with a possible infectivity rate of 10%. There is no evidence at all of aerosol transmission. Indeed, there is no evidence that a person who was not actively involved in an invasive medical procedure with a horse has been infected to date. I can supply a more detailed literature analysis upon request.
- *Confusion over risk of transmission from horse to horse.* The question of horse to horse transmission was also discussed in the proceedings document. There is also mention of facilities being closed down for quarantine reasons for up to 20 to 30 days, and mandating of vaccination in event management to reduce risks. I conducted a thorough review of the literature, and determined that while horse to horse transmission is a possibility, it is limited to transmission between horses that are closely connected with each other, or through contamination of equipment shared between horses. Simply sharing a paddock or stall is not an indicator that horse-to-horse transmission will occur, as several situations in the literature are described where horses shared stalls or paddocks and no horse-to-horse transmission was detected, despite active surveillance for this occurrence. I can supply a more detailed literature analysis upon request.
- *Negative image for Biosecurity Queensland due to division of priorities:* In the transcript of proceedings, Dr. Allison Crook (General Manager, Animal Biosecurity and Welfare and Chief Veterinary Officer, Biosecurity Queensland) describes the current exclusion testing performed as a secondary concern (compared to the primary concern of managing positive

cases in animals). This division of roles appears to be creating a negative image for Biosecurity Queensland. I have spoken with two horse owners who were told by their vets to drive suspected HeV positive samples to Brisbane themselves, to minimise the delay in testing. Upon arrival, receiving staff at the facility made the comment “we will test this unless something more high priority comes up.” This confused the horse owners as they were unsure of what could be more high priority compared to a potential Hendra virus infection. Some public relations training at the point of receipt may help alleviate these problems.

- *Negative image for Zoetis, the manufacturer of the vaccine.* The horse owners that are not vaccinating are concerned of negative effects of the vaccine on their horses. There is a lack of transparency in the reporting of negative vaccine effects that is causing a negative image of Zoetis and the vaccine to be perpetuated. It is quite common in repeated vaccination protocols that adverse reactions occur due to allergic responses to the components in the vaccine. The HeV vaccine requires administration every 6 months, which increases the chance of these allergic reactions. New vaccination study designs could be implemented that directly follow up with horse owners (e.g. by SMS) that ask them to directly report adverse outcomes. It would be great if this data could be made accessible to the public, to help relieve their concerns.

I hope that these submissions are found to be relevant and useful to the enquiry. I am more than happy to answer questions in regards to any of the information provided.

Yours sincerely

[Redacted signature]

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