Ministry for Primary Industries
Manatū Ahu Matua

# Review of Submissions

Draft Import Health Standard for Equids

Draft Risk Management Proposal for Equids

[Document Date]

*Growing and Protecting New Zealand*

**Agriculture & Investment Services**

**REVIEW OF SUBMISSIONS**

# Review of Submissions Equids

[Document Date]

Approved for general release

Howard Pharo

Manager Import and Export Animals
Ministry for Primary Industries

Contact for further information
Ministry for Primary Industries (MPI)
Agriculture & Investment Services
Animal Imports
PO Box 2526
Wellington 6140

Email: animal.imports@mpi.govt.nz

# Contents

# 1 Introduction

The draft import health standard for the importation into New Zealand of equids was notified for consultation on 22 December 2018.

The Ministry for Primary Industries (MPI) received submissions from the following:

| | |
|---|---|
| International Racehorse Transport, Dr Amy Little | 22 January 2019 |
| New Zealand Equine Health Association, Dr Patricia Pearce | 11 February 2019 |

This document summarises the issues raised in the submissions, and presents the MPI response to each.

## 1.1 Acronyms Used in the Document

| | | | |
|---|---|---|---|
| MPI | Ministry for Primary Industries | EI | Equine influenza |
| IRA | Import Risk Analysis | CEM | Contagious equine metritis |
| IRT | International Racehorse Transport | EIA | Equine infectious anaemia |
| NZEHA | New Zealand Equine Health Association | FEI | International Federation for Equestrian Sports |
| PAQ | Post-arrival quarantine | BHA | British Horseracing Authority |
| PEI | Pre-export isolation | EDFZ | Equine disease free zone |
| AAEP | American Association of Equine Practitioners | CTO | Chief Technical Officer |

# 2 Summary of Amendments

As a result of comments made, the following is a summary of amendments to be made to the *Review of Submissions Equids*.

Copies of all external stakeholder submissions in their entirety are presented in Appendix 1.

## 2.1 Clause 1.7(6)f) – Notification during PEI

**Requirement in draft IHS for consultation**

MPI must be notified of any illness, injury, deaths, treatments, or other conditions associated with equids in the PEI facility. If any equid in the consignment tests positive to any pre-export test, is removed from the consignment for any reason, or isolation has been breached, MPI must be notified and give clearance for the importation to proceed.

**Requirement in final draft IHS (amended after consultation)**

Other than inspection, visits and treatments required for certification, all veterinary visits, health problems, tests, test results, treatments and reasons for removal from PEI of any equid, must be reported by the Official Veterinarian to MPI within 48 hours. If any equid in the consignment tests positive to any pre-export test, if any equid is removed from the consignment for any reason, or if isolation has been breached, MPI must provide confirmation that the importation can proceed.

## 2.2 Clause 1.8 – Disease freedom and residency

This section is a new addition. The following has been added for clarification:

(1) Equids must be free from all quarantine restrictions prior to export to New Zealand.

(2) Equine disease free zone (EDFZ) freedom requirements will be specific to a particular organism/organisms. EDFZs must already be approved by the exporting country's Competent Authority prior to seeking MPI approval. EDFZs must be approved by the CTO before the option for a zone free from disease can be certified.

## 2.3 Clause 1.9(1) – Official inspection

**Requirement in draft IHS for consultation**

Equids must be inspected by an Official Veterinarian within 24 hours of export and be found free of clinical signs of disease, ectoparasites, and seeds, and be fit to travel.

**Requirement in final draft IHS (amended after consultation)**

Equids must be inspected by an Official Veterinarian within 24 hours of export and be found free of clinical signs of infectious or contagious disease of biosecurity concern to New Zealand, ectoparasites, and seeds, and be fit to travel.

## 2.4 Clause 1.10(8) – Vaccine information

**Requirement in draft IHS for consultation**

Where vaccines required by this IHS have been administered all vaccine names, whether they are inactivated or modified live virus, and the virus types and strains included in the vaccine, and date of the treatment must be recorded on the veterinary certificate.

**Requirement in final draft IHS (amended after consultation)**

Where vaccines required by this IHS have been administered all vaccine names, and the virus types and strains included in the vaccine (where applicable), and date of the vaccination(s) must be recorded on the veterinary certificate.

## 2.5 Clause 1.11(4) – Combined shipping

**Requirement in draft IHS for consultation**

Combined shipping of equids from multiple countries/locations with equivalent health status must be approved by MPI prior to import and will be recorded on the import permit. Only equids that require post-arrival quarantine can be co-shipped together.

**Requirement in final draft IHS (amended after consultation)**

Combined shipping of equids from multiple approved countries or multiple locations within a country must be approved by MPI prior to import and will be recorded on the import permit. Only equids that require post-arrival quarantine can be co-shipped together

## 2.6 Clause 1.11(8) – Feed

**Requirement in draft IHS for consultation**

Only sterile peat, soft board, treated wood shavings, shredded paper, or other inert products may be loaded for use as bedding during transportation. All feed and bedding used during transportation must be free from seeds. Any unused feed, bedding, and faecal material that falls from the container must be disposed of as biosecurity waste according to MPI standard Transitional Facilities for General Uncleared Risk Goods, TFGEN.

**Requirement in final draft IHS (amended after consultation)**

Only sterile peat, soft board, treated wood shavings, shredded paper, or other inert products may be loaded for use as bedding during transportation. All bedding used during transportation must be free from seeds. Any unused feed, bedding, and faecal material present in the transport containers on arrival, or that falls from the container must be disposed of as biosecurity waste according to MPI standard Transitional Facilities for General Uncleared Risk Goods, TFGEN.

## 2.7 Clause 1.13.2(1)h) – Vaccine information

**Requirement in draft IHS for consultation**

All products and vaccines administered to meet specific disease import requirements, including the generic name, active ingredient, dose rate, and date of treatment.

**Requirement in final draft IHS (amended after consultation)**

All products and vaccines administered to meet specific disease import requirements and date of treatment.

## 2.8 Clause 1.13.3(1)a) – Animal identification on lab results

**Requirement in draft IHS for consultation**

Unique identification for each animal, consistent with the veterinary certificate.

**Requirement in final draft IHS (amended after consultation)**

Guidance: A transition period for reports to be identified by a microchip number +/- the name of the equid will be given until 1 July 2020 during which time reports only identified with a name will still be accepted. After 1 July 2020, all reports must have microchip identification on them.

## 2.9 Clause 2.7(1)a) – Ectoparasite treatment

**Requirement in draft IHS for consultation**

Be treated within 24-48 hours prior to travel with a product highly effective against ectoparasites and applied in accordance with the recommendations of the manufacturer.

**Requirement in final draft IHS (amended after consultation)**

Be treated within 24-48 hours prior to travel with a broad-spectrum ectoparasiticide registered in the country of export as effective against ticks and applied in accordance with the recommendations of the manufacturer.

## 2.10 Clause 2.7(2)d) – Ectoparasite treatment

**Requirement in draft IHS for consultation**

Be treated twice with an acaracide prior to entry into PEI and within 48 hours prior to travel with a product highly effective against ectoparasites and applied in accordance with the recommendations of the manufacturer.

**Requirement in final draft IHS (amended after consultation)**

Be treated twice with a broad spectrum ectoparasiticide registered in the country of export as effective against ticks applied in accordance with the recommendations of the manufacturer, the first treatment prior to entry into PEI and the second treatment within 48 hours prior to travel.

## 2.11 Clause 2.7(3)c) – Ectoparasite treatment

**Requirement in draft IHS for consultation**

The product(s) used must be highly effective against ectoparasites and applied in accordance with the recommendations of the manufacturer.

**Requirement in final draft IHS (amended after consultation)**

The product(s) used must be a broad-spectrum ectoparasiticide registered in the country of export as effective against ticks and applied in accordance with the recommendations of the manufacturer.

## 2.12 Clause 2.8(1) – Endoparasite treatment

**Requirement in draft IHS for consultation**

Equids that do not require any PEI must be treated within 24-48 hours prior to travel with a product highly effective against endoparasites and administered in accordance with the recommendations of the manufacturer.

**Requirement in final draft IHS (amended after consultation)**

Equids that do not require any PEI must be treated within 24-48 hours prior to travel with a broad spectrum anthelmintic registered in the country of export for this use and administered in accordance with the recommendations of the manufacturer.

## 2.13 Clause 2.8(2) – Endoparasite treatment

**Requirement in draft IHS for consultation**

Equids that require PEI must be treated twice for endoparasites:

a) The first treatment must be given within 24 hours after entry into PEI; and
b) The second treatment must be given within 24-48 hours prior to export; and
c) The product(s) used must be highly effective against endoparasites and applied in accordance with the recommendations of the manufacturer.

**Requirement in final draft IHS (amended after consultation)**

Equids that require PEI must be treated within 24 hours of entry into PEI with a broad spectrum anthelmintic registered in the country of export for this use and administered in accordance with the recommendations of the manufacturer.

## 2.14 Guidance 2.12 – Equine influenza testing during PEI

**Requirement in draft IHS for consultation**

The additional security recommendation for EI is sampling for agent identification testing for EI on samples collected on two occasions:

- In the 7-14 days prior to the second sample collection; and
- In the 4 days prior to export.

**Requirement in final draft IHS (amended after consultation)**

The additional security recommendation for EI is sampling for agent identification testing for EI on samples collected on two occasions:

- In the 5-7 days after entry into PEI; and
- In the 4 days prior to export.

## 2.15 Clause 2.17(2) – Rabies vaccination

**Requirement in draft IHS for consultation**

Equids must be permanently identified with an implanted microchip and the microchip number stated in the certificate; and

a) Must be kept for the 180 days prior to export on premises where there has been no case of rabies for at least 1 year prior to export; or
b) Must be vaccinated or revaccinated in accordance with the recommendations of the manufacturer:
    i) In the case of a primary vaccination, the vaccine must be given not less than 180 days and no more than 1 year prior to export; or
    ii) In the case of a booster vaccination, the vaccine must be given no more than 1 year prior to export.

**Requirement in final draft IHS (amended after consultation)**

Equids must meet the recommendations in the Code chapter for *Infection with rabies virus*.

## 2.16 Clause 2.19(2) – Contagious equine metritis

**Requirement in draft IHS for consultation**

The equid is a gelding;

**Requirement in final draft IHS (amended after consultation)**

The equid is a gelding or a foal less than 180 days old accompanied by their dam;

## 2.17 Clause 2.19(3)(c) – Contagious equine metritis

**Requirement in draft IHS for consultation**

Must be subjected to a test for CEM in the 30 days prior to export, with negative results;

i) Stallions and colts must be sampled two times at intervals of 4-7 days. Sampling sites are the urethra, urethral fossa and its sinus, and the penile sheath;
ii) Mares and pubertal fillies must be sampled two times at intervals of 4-7 days. Sampling sites are the clitoral fossa and sinuses;

**Requirement in final draft IHS (amended after consultation)**

The test interval period was reviewed by the MPI Animal Health Laboratory and it was determined that the interval could be increased from 4-7 days to 4-14 days.

Must be subjected to a test for CEM in the 30 days prior to export, with negative results;

i) Stallions and colts must be sampled two times at intervals of 4-14 days. Sampling sites are the urethra, urethral fossa and its sinus, and the penile sheath;
ii) Mares and fillies must be sampled two times at intervals of 4-14 days. Sampling sites are the clitoral fossa and sinuses;

## 2.18 Clause 2.19(4) – Contagious equine metritis

**Requirement in draft IHS for consultation**

The equids are less than 731 days of age and do not require testing, but must be accompanied by equivalent testing of their dam corresponding to the pre-breeding test for the season the foal was born.

**Requirement in final draft IHS (amended after consultation)**

Clause removed.

## 2.19 Clause 2.20(1) – Equine piroplasmosis

**Requirement in draft IHS for consultation**

Equids must be kept, since birth or for at least the 30 days prior to export, in a country recognised by MPI as free from equine piroplasmosis, that does not import seropositive equids, and where no case of equine piroplasmosis has been reported in the 2 years prior to export; or

**Requirement in final draft IHS (amended after consultation)**

Equids must be kept, since birth or for at least the 30 days prior to export, in a country recognised by MPI as free from equine piroplasmosis, that does not import seropositive equids (with the exception of horses temporarily imported for competition purposes), and where no case of equine piroplasmosis has been reported in the 2 years prior to export.

## 2.20 Clause 4.1(2)d) – Endo- and ectoparasite treatment in PAQ

**Requirement in draft IHS for consultation**

A single treatment for endoparasites with a fully effective endoparasiticide, administered according to the recommendations of the manufacturer.

**Requirement in final draft IHS (amended after consultation)**

A single treatment for endoparasites with a broad spectrum endoparasiticide, administered according to the recommendations of the manufacturer.

## 2.21 Clause 4.2(1), (2), and (3) – Diagnostic testing in PAQ

**Requirement in draft IHS for consultation**

(1) Equids imported from countries where equine influenza is considered present must be subject to an agent identification test (with negative results) on nasopharyngeal swabs collected at least 5 days after entering PAQ.

(2) Equids imported from countries where equine infectious anaemia is considered by MPI as moderately to highly prevalent must be subject to an OIE prescribed test or one listed in MPI-STD-TVTL for international trade (with negative results) during PAQ.

(3) Equids imported from countries where Venezuelan equine encephalomyelitis (VEE) is considered present must be subject to virus isolation (with negative results) on blood samples collected from any equid showing a significant rise in temperature during PAQ.

**Requirement in final draft IHS (amended after consultation)**

(1) Equids that require PAQ for equine influenza must be subjected to an agent identification test (with negative results) on nasopharyngeal swabs collected at least 5 days after entering PAQ.

(2) Equids that require PAQ for equine infectious anaemia must be subjected to an OIE prescribed test or one listed in *MPI-STD-TVTL* for international trade (with negative results) during PAQ.

(3) Equids that require PAQ for Venezuelan equine encephalomyelitis (VEE) must be subjected to virus isolation (with negative results) on blood samples collected from any equid showing a significant rise in temperature during PAQ.

## 2.22 Definitions – Highly effective

**Requirement in draft IHS for consultation**

For the purposes of the standard when referencing endo- and ectoparasiticides; with claims registered as highly effective (>98%) for use in horses, at the manufacturer's prescribed doses and intervals of administration.

**Requirement in final draft IHS (amended after consultation)**

Removed.

## 2.23 Summary of amendments made to the RMP: Equids

Based on submissions, the RMP has been amended to add a summary of the changes that have occurred in previous amendments. Under Section 8: Recommendations for identified risk organisms, the risk management options presented in the IRA 2000 have been removed and replaced by the risk management options in the most current issued IHS. This was done to provide a more meaningful insight into the amendments being made to the current measures. Where further information was assessed for submissions, amendments were made to the individual risk organism sections where needed.

# 3 Internal Submissions

According to MPI process an internal review period is available to staff of MPI to comment and recommend changes prior to public consultation on an import health standard. No internal submissions was received after the internal review deadline.

# 4 Review of Submissions

## 4.1 IRT, Dr Amy Little

### 4.1.1 IDENTIFICATION ON REPORTS

Can MPI please confirm IRT's interpretation that all laboratory reports would be required to include the microchip number of each horse?

IRT understands that microchip is the gold standard for animal identification. However, microchipping is not widely practiced in all sectors of the horse industry. As such, it is not routine practice for all laboratories world-wide to include microchip numbers on equine laboratory reports – it is more common that the horse's name is the form of identification. As such, IRT is concerned there may be some initial problems in changing practices for laboratories conducting export testing.

During this interim period - will MPI consider other forms of identification on laboratory reports e.g. hose names?

**MPI Response**

Microchip numbers should be added to laboratory reports moving forward. However, with the understanding that this is not an industry standard, we will continue to accept laboratory tests with horse names as the identification on these reports during a transition period until 1 July 2020. Further guidance has been added to the IHS.

### 4.1.2 NOTIFICATION OF ISSUES IN PEI

Can MPI please advise if there is a prescribed timeframe by which this notification must occur. For example, should any treatments be notified immediately, within 48 hours, or would a summary just before export be sufficient?

**MPI Response**

MPI will add further information on the timing of notification in clause 1.7.

### 4.1.3 PRE-EXPORT VETERINARY inspection

IRT recommends that the words 'infectious or contagious' be added prior to 'disease'. This would retain consistency with the current health certificate for export of horses from Australia to New Zealand which references freedom from clinical signs of infectious disease.

**MPI Response**

MPI agrees with this request. This clause will be amended to include those words.

### 4.1.4 WEED SEEDS IN TRANSPORTED FEED

It will be extremely difficult to source seed-free feed especially for longer journeys e.g. From the UK or USA.

Haylage is often used for export from the UK as it helps to keep dust levels down. But it is not guaranteed to be free from seeds. There are also circumstances where haylage cannot be used (horse won't eat it or has a veterinary reason why it needs to eat other forage e.g. history of colic). Lucerne/alfalfa hay is generally seed-free but would be unsuitable as a sole feed source for long journeys e.g. from the USA.

IRT would appreciate MPI reviewing this requirement. Other risk mitigation measure for exotic weed-seeds may be possible such as disposing of all imported feed as biosecurity waste and disposing of manure produced in the initial period of post-arrival quarantine as biosecurity waste.

**MPI Response**

MPI understands the issues with incoming feed and the inability to guarantee freedom from weed seeds. This can be managed by the current requirement that any unused feed, bedding and faecal material is to be treated as biosecurity waste and disposed of as such on arrival. The requirement for feed to be free from weeds/seeds has been removed.

### 4.1.5 EIA TESTING IN PAQ

Could MPI please clarify what is meant by 'moderately to highly prevalent' or, alternatively list countries that are considered by MPI to be moderately to highly prevalent for EIA?

**MPI Response**

As per the import risk analysis (IRA), moderately prevalent is defined as 0.011-0.50% prevalence, and highly prevalent is defined as 0.51-1.5% prevalence in an affected country. As PAQ for EIA is only required for these types of countries, all equids that currently require PAQ from countries infected with EIA have further EIA testing done in PAQ. MPI will change the wording for clarification.

### 4.1.6 ENDOPARASITE TREATMENTS

It is IRT's experience that many horses develop diarrhoea after being treated with an endoparasiticide. As such, the final treatment given 24-48 hours prior to export can be problematic and interfere with a veterinarian's ability to certify that the horse is free from clinical signs of disease and fit to travel.

Additionally, most manufacturers recommend that endoparasiticides are given at intervals of 4-6 weeks or greater, as such, administration twice within a 21-day period (for example for export from the UK) does not comply with manufacturer's recommendations.

Given there are no endoparasites identified as a risk organism in the draft IHS, and the PEI facilities are cleaned and disinfected prior to the consignment entering - would MPI consider a single treatment with an endoparasiticide within 24 hours of entry into PEI?

**MPI Response**

The endoparasites that are being managed by this IHS are the same parasites currently in New Zealand. Equids imported into New Zealand under the current requirements would be treated with a broad spectrum endoparasiticide three times in a 4-week period (two treatments in PEI, one in PAQ). The regular repeated treatment of horses is may promote drug resistance.

It is known that environmental control is also important to control internal parasites. As PEI premises are cleaned and disinfected prior to entry of horses, it reasonable to assume that environmental contamination would be extremely low. MPI agrees that a single treatment with an endoparasiticide within 24 hours of entry into PEI will effectively manage endoparasites.

### 4.1.7 EQUINE INFLUENZA VACCINATION TIMING

IRT will regularly need to seek dispensation/variation for the clause requiring horses to be vaccinated against EI in accordance with manufacturer's recommendations as this is not widely practiced for example in the UK.

Rather, veterinarians tend to follow the Federation Equestre Internationale (FEI) rules https://inside.fei.org/news/equine-influenza-vaccination or British Horse Racing Authority (BHA) Rules, with regards to administration of EI vaccinations available at: http://rules.britishhorseracing.com/Orders-and-rules&staticID=126683&depth=3.

In recognition of the above, Australia has adapted their rules to allow EI vaccination intervals in accordance with these BHA/FEI rules. This has greatly reduced the administrative burden in applying for and processing dispensation requests, without any increase in biosecurity risk. IRT requests that NZ MPI also consider allowing EI vaccination in accordance with the BHA/FEI rules.

**MPI Response**

It has been recognised that there is a lack of harmonisation and significant differences that exist between the mandatory vaccination regimes of different racing authorities, sporting bodies and importing authorities. Furthermore, many such regimes do not comply with the vaccine manufacturer's data sheets. MPI supports the use of the manufacturer's recommendations where at all possible and will maintain the requirement for equids to have the primary series and booster vaccinations done as per the manufacturer's recommendations. MPI will continue to evaluate equids individually and provide an equivalence where it is warranted. This requirement can be revisited and reviewed in the future if there are changes to such vaccination programmes that are scientifically based.

### 4.1.8 EQUINE INFLUENZA VACCINES

There is only one vaccine available in the UK that contains both Clade 1 and Clade 2 virus strains (ProteqFlu – Boehringer Ingelheim). As other EI vaccines are widely used throughout the world, IRT would likely need to regularly seek dispensation or variation from this clause as currently written.

Australian conditions require EI vaccines to contain the most up-to-date virus strains available.

Dr Richard Newton BVSc, MSc, PhD, DLSHTM, DipECVPH, FRCVS, of the Animal Health Trust, UK has advised IRT: "There continues to be no evidence from the field for significant failure of efficacy among any of the vaccines and there are very low levels of detection of EI generally although this situation may change at any time of course."

Would MPI consider amending this condition to align with the Australian policy which works to ensure horses are protected from EI but doesn't place such strict limitations on sourcing the correct vaccine?

While IRT agrees with Dr Newton's statements that the situation as regard to EI detection/vaccine failure can change at any time, the PEI and PAQ durations and testing regimen would adequately protect against the risk that vaccine failure would result in disease incursion in New Zealand.

**MPI Response**

In the Americas, clade 1 viruses of the Florida sublineage (FC1) viruses have typically predominated, whereas in Europe it is clade 2 of the Florida sublineage (FC2) viruses. However, there have been previous outbreaks in the UK, France and Ireland with FC1 viruses including the current EI outbreak in the UK and other EU Member States.

The OIE expert surveillance panel (ESP) makes recommendations for EI vaccines based on the worldwide EI strain surveillance programme. This programme characterises the antigenic differences between EI virus field strains and based on these test results, the ESP has recommended, since 2010, that both a FC1 and FC2 representative strain be included in EI vaccines. MPI supports the ESP recommendation and has been using this recommendation in the IHS since the previous amendment in 2015.

MPI does note that there is considerable variation in the numbers and different vaccine products administered to equids on a regular basis. Equids that have had a primary course and/or previous boosters with a vaccine that does not comply with the MPI vaccine strain requirements do not need to undergo a new primary course. It is expected that only the most recent booster vaccination done for export purposes will need to meet this requirement if the previous vaccinations do not. This information will be added to the guidance document.

Where a non-compliant vaccine is used and evidence can be provided by a Competent Authority to show cross-protection, MPI can carry out an assessment for a potential equivalence as per section 27(1)(d) of the Biosecurity Act 1993.

### 4.1.9 CONTAGIOUS EQUINE METRITIS TESTING

IRT would like to request that no CEM testing be required on un-weaned fillies and colts 6 months or younger.

We understand that clause (4) allows for horses 731 days old or younger to be imported without testing provided they are accompanied by equivalent testing of their dam corresponding to the pre-breeding test for the season the foal was born. However, we consider this testing will be very difficult to obtain for non-thoroughbred or standardbred horses.

**MPI Response**

Un-weaned fillies and colts 6 months or younger will be traveling with their dam which will be required to undergo CEM testing with negative results for import. The un-weaned fillies and colts can be considered to have the same health status as their dam. MPI agrees that un-weaned fillies and colts 6 months or younger do not require separate testing and an option for this will be included in the IHS.

### 4.1.10 PEI FACILITIES

Can MPI clarify whether this standard operating procedure (SOP) must be formally approved by MPI? Does the SOP need to be in a specified format? If yes, will MPI be providing a template or model document the SOP manuals should be based on?

**MPI Response**

The SOP for PEI facilities does not need to be formally approved by MPI, all facilities are required to be approved by the Competent Authority of the exporting country according the IHS requirements. There is no specified format for the SOP. It is up to the Competent Authority of the exporting country, and they must be satisfied that it meets the requirements set out in the IHS before they can certify.

### 4.1.11 APPLICATION OF DEFINITIONS

It can be difficult for shippers to obtain information regarding the registered claims for these products as this is not always stated on the label or publicly available.

Newmarket Equine Hospital (NEH) are the UK Department for Environment, Food and Rural Affairs (DEFRA) Official Veterinarians that are responsible for preparing many horses for export to New Zealand. They share IRT's concerns regarding the term 'highly effective' noting: "There are no claims of efficacy made for either Switch or Equimax on their datasheet. It would be unusual to find a manufacturer who would claim a specific % efficacy for either ecto- or endoparasite treatment in this country but there may be published scientific articles on this subject although all we can find at the moment is claims for 'satisfactory efficacy' or more than 90% for Equimax. There are no efficacy studies for Permethrin (the Veterinary Medicines Directorate claims they are unnecessary)"

Some more guidance as to acceptable products or active ingredients would be helpful in ensuring compliant products are used.

**MPI Response**

The efficacy of a parasiticide treatment may vary according to local conditions, including the availability of drugs and treatment methods, the presence of drug resistance and climatic conditions. There is also reliance on the experience of the veterinarians supervising equids during pre-export preparation and their knowledge of what is required to be able to confidently certify the parasite clauses. Based on this, MPI will change highly effective to broad spectrum.

### 4.1.12 TIMING OF VACCINATION FOR EXPORT

IRT notes this clause appears to have been removed from the revised draft IHS.

Can MPI confirm that it is now permissible to vaccinate a horse during PEI for instance if an EI booster falls during the PEI period?

**MPI Response**

While performing vaccination during the PEI period is not recommended due to possible vaccine reactions causing issues with certification, it is permissible.

### 4.1.13 MULTIPLE RESIDENCY

IRT welcomes this guidance as it is rare that a horse, particularly racing/competition horses, will be continuously resident in a single country.

Could MPI please provide some additional advice as to how this system will work from a certification perspective? For example will NZ MPI be implementing the Australian system and be negotiating separate residency certificates with each approved country that must be certified by the relevant country's competent authority and travel with the horse? Or will the export certificates referenced in (2) or some form of residency be sufficient?

As MPI is aware, competent authorities will not complete certification that is not produced by their government/on their letterhead and will not certify to the equine health situation in other countries.

**MPI Response**

This is covered in section 5.8 of the guidance document. Copies of the export certificates or a letter from the Competent Authority from the country or countries of residence should be provided at the time of import permit application for MPI to make an equivalence determination.

### 4.1.14 EQUINE DISEASE FREE ZONES

IRT would welcome an update from MPI as to the status of the assessment of the EDFZ in Conghua, China.

**MPI Response**

The EDFZ in Conghua was officially approved in June 2019.

### 4.1.15 VACCINE INFORMATION

IRT notes that this is a considerable increase in the amount of information required regarding vaccines.

We anticipate there will be an education process required for veterinarians being asked to include this more detailed information when completing health certificates. Could MPI please provide some justification as to why this information is now being requested, in order to assist with this process?

**MPI Response**

Upon further consideration during an amendment to the equine germplasm standard, MPI determined that not all vaccine information is needed. The specific information required for vaccines will be amended in this IHS as well.

## 4.2 NZEHA, Dr Patricia Pearce

### 4.2.1 DISEASE INTELLIGENCE SCANNING

The rising number of imports from other countries imply that to an extent, we are affected by the biosecurity standards and IHS adopted by these countries. In addition, pre-border biosecurity in the form of disease intelligence scanning for incursions occurring in these countries informs and motivates modifications to the IHS, and eventually the implementation of additional biosecurity measures. Some information on what system is in place for this, and how this is performed, would be helpful.

**MPI Response**

As a member of the OIE, we receive disease notifications of OIE notifiable diseases (19 listed diseases affect equids) as they occur. These disease notifications are also notified to us by our trading partners to ensure adequate measures are in place.

The equine infectious disease service of the Animal Health Trust (AHT) carries out disease surveillance and disseminates reports on the situation for equine diseases in certain countries through the international collating centre (ICC). 20 member countries submit disease reports every 3 months to the ICC and quarterly reports are sent out based on the submitted information. They also send out regular interim reports as they come in. Multiple people within MPI are signed up to the circulation list and receive these reports including members of the surveillance team as well as the imports team.

MPI has an Emerging Risk System (ERS) team which scans key alert sources (e.g. ProMed) for new information on changes in hosts, distribution, impacts of organisms, and the emergence of new ones. A rapid risk assessment to determine whether there is an increase in the risk profile for NZ can be carried out and any changes are communicated to the risk managers (Animal Imports team). They also carry out regular reporting.

### 4.2.2 DESCRIPTION OF AMENDMENTS

A document history is included in the IHS and the accompanying Guidance document, which indicates that regular review has taken place, to align with the Code recommendations. Some description can be retrieved from Surveillance magazine:

- 22 May 2014: “requirements for equine viral arteritis and contagious equine metritis, and removing requirements for West Nile virus.” (Anonymous, 2015b)
- 1 February 2013: “changes for the importation of live horses and align measures with the code. Negotiation for veterinary certificates under this IHS was postponed pending the outcome of the Australian Department of Agriculture’s consultation on reducing the testing requirements for contagious equine metritis.” (Anonymous, 2014)

However, other changes are less apparent and are merely listed by the dates; there is no description of which amendments or updates were made. This makes it more difficult to assess these changes. It is conventional to include such a description, so that the reader can assess the nature and extent of the modifications.

**MPI Response**

This has been noted and further information on previous changes has been provided within the RMP.

### 4.2.3 POTENTIAL HAZARD LISTING

In the Risk Management Proposal: Equids document, the Background and Options assessment sections clarify that the current IHS is based on the original IRA that was published by MAF – Biosecurity NZ in 2000 (MAF, 2000). In the Options Assessment of the RMP document, it is "concluded that risk management measures were justified", on the basis of potential hazards, for the 31 diseases that are still considered relevant. It is not clearly shown how the decision-making to result in this listing was carried out.

**MPI Response**

As per the IRA 2000, a process of hazard identification developed a list of the diseases of concern. The list comprised the infectious diseases affecting horses that constitute a risk during international trade in horses and equine products. Diseases endemic in New Zealand that are not subject to official control are not considered further, fulfilling the SPS Agreement obligation regarding consistency with national treatment. Please refer to Section 5 of the IRA 2000 for further information on the original hazard identification.

Further changes to this disease listing have occurred during amendments to this standard and the RMP has been updated to include this information (see response for 4.2.2 of ROS).

### 4.2.4 DIAGNOSTIC TESTS

As a general theme the NZEHA is concerned at the flexibility of choice for which tests can be used for a number of the diseases. This may be an interpretation issue but as a rule NZEHA seeks that countries utilise the most recommended method in their pre export testing and the code includes many tests that are deemed suitable or may be used that the code identifies are less sensitive or specific than others. Because these diseases are often endemic in the exporting countries but are exotic to New Zealand the NZEHA believes New Zealand can argue a strong case that the most accurate test regimes available are used.

**MPI Response**

The OIE Manual provides information on the test methods that are available for the diagnosis of a specific disease and their purpose. Each disease-specific chapter includes a table of the diagnostic tests available and in use for the disease graded against six purposes, and gives a concise guide as to which tests are appropriate for which purpose. Tests used for import purposes must be suitable for that purpose either as outlined by the OIE Manual or as assessed by MPI.

As per the IHS, all diagnostic tests must be agreed and approved by the CTO and listed in the document, Approved Diagnostic Tests, Vaccines, Treatments and Post-arrival Testing Laboratories for Animal Import Health Standards (MPI-STD-TVTL). Approved diagnostic tests must be performed in accordance with the approved methodology within the OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals (the OIE Manual), or a proposed test must have a validated methodology assessed by the MPI Animal Health Laboratory (AHL) as valid for diagnostic purposes in equids and be appropriate for surveillance for the identified risk organism. Tests listed in the OIE Manual that do not include a validated methodology must also be assessed by the AHL before approval by the CTO for listing in MPI-STD-TVTL.

### 4.2.5 COUNTRY ASSESSMENT

NZEHA seeks more understanding on the criteria MPI employs in determining if countries are free of the range of identified risk organisms as this determines if pre-import testing is required for many organisms listed in Part 2 of the IHS. In addition more transparency around the mechanisms to monitor this is sought.

**MPI Response**

As per the IHS, any new country that requests access must have their country exporting systems and certification assessed by MPI prior to the negotiation of a veterinary certificate. The evidence must include details about all of the following:

1. The ability of the exporting country's Competent Authority to verify the animal health status of equids in the exporting country, zone, or compartment, with respect to the risk organisms identified in the IHS.
2. The adequacy of the national systems and/or programmes and standards in the exporting country for regulatory oversight of the equine industry.
3. The capability of the exporting country's Competent Authority to support the issue of veterinary certificates as required by the IHS.
4. Where applicable, the pre-export isolation (PEI) facility and operating protocols.

The evidence will be obtained during evaluation of the Veterinary Services of the Competent Authority of the exporting country in accordance with Chapter 3 of the OIE Code.

The CTO must be satisfied with the exporting country systems prior to preparation of equids for export to New Zealand. MPI reserves the right to audit facilities from countries approved to export equids to New Zealand either during the approval process or anytime thereafter.

Country approval and veterinary certificate information is available on the MPI website including a guidance document for the recognition of export control and certification systems for animal and animal products: https://www.mpi.govt.nz/importing/overview/import-health-standards/requesting-a-new-ihs/.

Regarding monitoring of disease situations, please see 4.2.1. The official approval letter that is sent by MPI to the exporting countries notes that MPI expects any changes to the disease situation in the country or changes to certification be notified to MPI.

### 4.2.6 EQUINE INFECTIOUS ANAEMIA

We would propose that the following will be considered for the revised IHS:

1. The requirement for post-arrival quarantine plus testing of horses from medium to high prevalence EIA countries be retained. In practice, this is unlikely to have a major impact, as very few horses are imported from such countries. However, it does represent an additional safeguard.
2. Considering that a number of the suspect EIA cases that are reported in Surveillance magazine are foals, the availability of an antigen detection test – that is, the PCR – would be helpful. Such a test would also be useful for equivocal serological test results. This test is currently not in use at AHL.
3. For countries that are not free of EIA but are considered low to medium risk the option to use PCR should be made available.

**MPI Response**

1. This requirement has been retained, but has been moved elsewhere in the IHS. This requirement is now under clause 1.13 (3) of the amended IHS.

2. This sits outside of the IHS as investigations of suspect EIA cases are post-border and handled by the Incursion Investigation team and the Animal Health Lab in Wallaceville.

3. Approved exporting countries may submit a request for assessment of a test different from what is currently approved at any time, even for tests not listed in the OIE Manual. At this point in time, no such requests have been submitted for use of an EIA PCR. Also of note is that under the OIE Manual the PCR has been assessed as being potentially inappropriate or as having severe limitations for testing individual animal freedom from infection. There are currently no commercially available and approved PCR tests for EIA.

### 4.2.7 CONTAGIOUS EQUINE METRITIS

The requirements in the draft IHS are much more clearly presented, and we welcome the additional requirements regarding antibiotic treatment or mating with CEM untested animals in the pre-export period. However, we would wish the following to be considered:

1. Notwithstanding that the OIE appear to have not yet validated the PCR and/or the IFAT tests, we believe that these tests have benefits over bacterial culture, and should be considered at least as supplementary test options, and preferably as the preferred tests.
2. Given that germplasm has been mentioned as being infectious, is any testing done of imported semen?
3. Is there a published list of countries recognised by MPI to be free of CEM? Is this list regularly reviewed (incorporating disease events reported to WAHIS)?

**MPI Response**

1. Obligations with respect to measures in IHSs arise from New Zealand's membership of the World Trade Organization (WTO) and the *Agreement on the Application of Sanitary and Phytosanitary Measures* (SPS Agreement). One such obligation is harmonisation with the standards set by the World Organisation for Animal Health (OIE). The standards ensure that animals and animal products can be traded safely without the risk of spreading animal diseases, or zoonoses.

   The OIE Manual chapter for CEM was reviewed and updated in May 2018 with bacterial isolation and identification being identified as the recommended method and validated for the purpose of individual animal freedom from infection prior to movement. While PCR testing methods are available, these tests have been identified as being suitable but may require further validation. Where requests are made to use a PCR, validated test methods can be submitted to MPI for assessment and potential approval. The IFAT is noted to have factors that severely limit its application, no request has been made by any exporting country to use this test.

2. Yes, there are CEM requirements for equine germplasm which is covered under a separate IHS.

3. There is not a published list, but the negotiated veterinary certificates serve as a proxy. Information on the disease freedom claim is assessed during the negotiation of bilateral veterinary certificates and/or country assessment, and if agreed, disease freedom clauses will be present in the certificate. The Competent Authority of the exporting country has the responsibility to notify MPI in the case of any change in disease status.

### 4.2.8 HENDRA VIRUS

As for CEM, the requirements in the draft IHS are much more clearly presented. Combining Hendra and Nipah virus requirements is appropriate given the rarity and limited geographic distribution of these diseases.

However, given that the size of the Hendra affected area has been steadily increasing the likelihood of horses from Hendra-affected areas being imported into New Zealand in future is likely to increase. Bearing in mind the zoonotic risk and resulting health and safety issues, and possible adverse media attention that would result from a potential case occurring in New Zealand, in combination with the availability with a safe and effective vaccine, we would recommend that the draft proposal is amended such that horses in the 30 days prior to export that have resided or transited any geographical region in Australia in which the disease has occurred that vaccination for Hendra virus is required.

The latest information of the efficacy of the vaccine suggests that either two initial doses 21 days apart, or in previously vaccinated horses, a single booster dose in the previous 12 months should be sufficient evidence of vaccination.

**MPI Response**

During the process of amending this IHS, MPI consulted with the Australia Department of Agriculture (DA) about equids exported from Hendra virus areas. Vaccination and testing were both discussed in regard to human health and safety for Hendra virus in exported horses.

MPI consulted with the DA about the possibility of testing for horses that have resided in Hendra virus affected areas in the 16 days prior to export and whether these measures were justified. A teleconference with the Australian Department of Agriculture took place and testing and zoning/regionalisation was discussed. There are many difficulties with requiring the testing of horses for Hendra prior to export. It is near impossible to set up zones/regionalisation for Hendra because of the ecology of the disease and the natural host involved. Australia has previously tried to do this and has been unable to come up with a solution. Regarding testing, the feasibility of doing PCR testing on a much larger scale than currently occurs would be difficult. No horse intended for export to any country or jurisdiction has ever been infected with Hendra virus. From January 2006 to July 2018, a total of 11,551 horses travelled from Australia to New Zealand with no evidence of Hendra virus infection.

Hendra virus causes a rare sporadic infection of horses and humans that has currently occurred in a geographically restricted part of Australia (Queensland and New South Wales). Hendra virus belongs to the genus *Henipavirus*. Pteropid bats (flying foxes) are the reservoir hosts for the disease. In the past 25 years since the discovery of the disease in 1994, there have been 84 confirmed cases in a population of over one million horses (https://www.business.qld.gov.au/industries/service-industries-professionals/service-industries/veterinary-surgeons/guidelines-hendra/incident-summary). The disease has a restricted range of occurrence in Queensland and New South Wales and within this area, cases have occurred on just over 50 individual properties.

Due to the level of exposure required, although having significant consequences, the disease is not categorised as highly infectious to humans or horses. Transmission from horse to other horses or humans results from direct contact with infectious bodily fluids such as blood, urine, saliva or nasal discharge from an infected horse or by contact with surfaces or equipment contaminated with infectious material. Close direct contact is needed for transmission to occur.

A total of seven humans have contracted Hendra virus from infected horses, and four of these people did not survive. The seven confirmed human cases all became infected following high level exposures to respiratory secretions and/or blood of a horse infected with Hendra virus, following activities such as assisting with post mortem examination of a dead horse without adequate personal protective equipment (PPE), performing certain veterinary procedures or having extensive exposure to respiratory secretions without adequate PPE, usually when the horses were very ill during the peak viral shedding period (https://www.health.nsw.gov.au/Infectious/controlguideline/Pages/hendra-case-summary.aspx).

Other people have reported similar contact with infected horses but have remained well and their blood tests have shown no evidence of infection. No one with a lower level exposure (e.g. grooming, feeding, patting) has ever developed Hendra virus infection or shown evidence of infection in blood tests. Several hundred people have been exposed to Hendra virus infected horses but have not been infected. The last human case of Hendra virus infection occurred in 2009 and despite a large number of horse cases in 2011, no human cases were recorded.

Since the discovery of Hendra virus, Australia has provided educational information about the disease, proper hygiene and infection control which have been the mainstay of prevention of further human cases. The greatest risk is with clinically ill horses. The recommended prevention measures to take when horses are unwell are:

- Cover any cuts or abrasions on exposed skin before handling horses and wash your hands well with soap and water, especially after handling a horse's mouth or nose and before eating, smoking or touching your eyes, nose, mouth.
- Don't kiss horses on the muzzle (especially if the horse is sick)
- Use personal protective equipment to protect yourself from the body fluids of horses.

In Australia, horse owners or persons dealing with horses have a general biosecurity obligation to take all reasonable and practical measures to prevent or minimise the effects of a biosecurity risk. This means they are legally required to reduce the risk of Hendra virus infection and limit the spread of Hendra virus when dealing with horses and other possible carriers. This would include horse exporters and their staff. Persons dealing with horses should be taking the proper precautionary measures during the import of horses from Australia including having proper access to PPE and should discuss this with their employer.

Based on the evidence provided, MPI's final decision is to not include any further measures than what was presented in the consulted document.

### 4.2.9 EQUINE INFLUENZA

That 2.12 of the IHS be reworded to specify that only the OIE code recommended method being the Real-time RT- PCR test be used for agent identification testing for EI or make reference to MPI-STD-TVTL.

Either remove the Haemagglutination Inhibition test from the list of tests in MPI-STD-TVTL that may be used for EI or make it clear that it cannot be used for agent identification

**MPI Response**

The HI test is already due to be removed from the list of tests in MPI-STD-TVTL with this amendment.

### 4.2.10 EQUINE PIROPLASMOSIS

The NZEHA thus asserts that the impact of a single imported infected animal could be substantial and seeks to argue for more specific wording regarding which of the OIE described diagnostic tests must be undertaken.

The most recent scientific review (2013) of Equine Piroplasmosis states that the numerous publications on the distribution of infection should interpreted with caution because of the previous use of the complement fixation test and that abundant data shows the CFT to lack sensitivity in detecting persistent infection. It is not clear in the consultation documents available, the basis on which MPI will recognize country freedom for Equine Piroplasmosis. The guidance document includes summary information on approved countries but doesn't discuss their disease status with respect to piroplasmosis. The safeguard of ensuring a third country does not import seropositive equids is fragile if the country in question allows the use of the CFT. Requiring no case reports of equine piroplasmosis in the previous 2 years offers minimal protection given the "silent" re-emergence of infection world-wide.

The discussion in the Risk Management Proposal implies spread and establishment of piroplasmosis in New Zealand is a low likelihood low impact event. The NZEHA suggests that this may not necessarily be the case and raises the following points in support of an alternative view.

1. Delete 2.20 (1) or be specific as to the requirements to be met for MPI to recognise the country as Equine piroplasmosis free.
2. Reword 2.20(3) to state: Equids must meet the recommendations in the Code chapter for Equine piroplasmosis utilising only the cELIZA or the PCR diagnostic test options given and meet the ectoparasite requirements of this IHS.
3. Remove the CF test from MPI-STD-TVTL.

**MPI Response**

1. See response 4.2.5. MPI expects that exporting countries requesting recognition of a self-declaration for disease freedom have followed the OIE Code chapter *Procedures for self declaration and for official recognition by the OIE* in addition to meeting the other outlined requirements in the IHS (not allowing permanent importation of seropositive horses and no reported cases of equine piroplasmosis in the 2 years prior to export).

2. PCR tests have been developed and as per the OIE Manual, have been shown to be highly specific and sensitive and will likely play an increasing role in the diagnosis of infections in the future. The OIE Manual does not provide a methodology for PCR tests, so any PCR tests used must be considered by the MPI Animal Health Laboratory (AHL) as valid for diagnostic purposes in equids. In a recent paper about equine piroplasmosis status in the UK in Vet Record published 9 November 2018, it was noted that despite the description of many PCR protocols in the literature, a commercial PCR screening assay for EP is not readily available to UK practitioners. The commercial availability of a PCR elsewhere is unknown, but this may be a limiting factor for the use of this test. It has also been noted that the genetic variation reported between isolates of *T. equi* make the use of PCR on a global scale challenging. Current OIE guidelines recommend the indirect fluorescent antibody test (IFAT) and the competitive ELISA (cELISA) as the screening tests for international trade and MPI will continue to recognise and accept the use of both of these tests for this purpose.

   As per response 4.2.6 above, approved exporting counties may submit a request for assessment of a test different from what is currently approved at any time, but at this point in time, no such requests have been submitted for use of a PCR for equine piroplasmosis.

3. MPI recognises the limitations of the CFT and it is already due to be removed from the list of tests in MPI-STD-TVTL with this amendment.

### 4.2.11 STRANGLES

Infected horses can become shedders for up to 6 months post infection so the inclusion of a declaration that the horse being exported has been free from signs of infection with strangles and no outbreaks have occurred on the property of origin in the previous 6 months is sought. If this cannot be attested to a pre-export PCR test of guttural pouch washings could be offered as an alternative measure.

Currently horses in post arrival quarantine (PAQ) are swabbed and tested for EI using a PCR. As a further measure to prevent spread of a potentially new strain into the local population NZEHA seek to initiate a local discussion on the possibility of the PAQ including in its SOP a requirement to collect a concurrent nasopharyngeal swab to enable a PCR for S Equi to be undertaken. If the sample is positive the NZEHA support that the animal may be still be given it a Biosecurity Clearance if it has met all other biosecurity requirements but arrangements could be made for it to complete further isolation on its property of destination under supervision of NZEHA.

**MPI Response**

Obligations with respect to measures in IHSs arise from New Zealand's membership of the World Trade Organization (WTO) and the *Agreement on the Application of Sanitary and Phytosanitary Measures* (SPS Agreement). One such obligation is harmonisation with the OIE Code recommendations for sanitary measures to prevent spread of listed diseases during trade.

Under Article 2 of the SPS Agreement, Basic Rights and Obligation, "Members shall ensure that their sanitary and phytosanitary measures do not arbitrarily or unjustifiably discriminate between Members where identical or similar conditions prevail*, including between their own territory and that of other Members*. Sanitary and phytosanitary measures shall not be applied in a manner which would constitute a disguised restriction on international trade".

If strangles were to be added to the IHS, any testing, treatment, etc. would occur in the exporting country as MPI prefers to manage risks offshore. Strangles is not an OIE listed disease, and as strangles is endemic in New Zealand and is not subject to official control, it is not considered to be a risk organism under the IHS for which measures are imposed, thus fulfilling the SPS Agreement obligation regarding consistency with national treatment. Aside from not meeting MPIs obligations under the SPS Agreement, the inclusion of strangles as an identified risk organism would not allow horses that tested positive in PAQ to be given a biosecurity clearance.

Equids have been imported for a number of years with no specific strangles requirements, just with a general requirement that animals are certified to be free from clinical signs of disease and are fit to travel. The finding of only two strains of strangles in New Zealand despite the absence of specific requirements may further indicate that measures are not needed. Evidence that other strains found outside of New Zealand cause more severe disease than the present strains would be required to consider additional measures. It is not apparent that certain strains cause more severe clinical signs or increased morbidity/mortality, and no alerts of such issues have been raised through MPIs emerging risk system.

MPI welcomes the idea of the NZEHA working together with New Zealand equine importers to create SOPs that will help support the further development and implementation of the NZEHA code of practice for strangles.

# 5 Appendix 1: Copies of Submissions

## 5.1 IRT, Dr Amy Little

| Draft IHS/Guidance Document Reference | IRT Comment |
|---|---|
| IHS 1.6 Identification<br><br>(1) All equids must be permanently identified with an approved microchip.<br><br>AND<br><br>1.12.3 Laboratory and vaccination reports<br><br>(1) Original laboratory and vaccination reports, or copies of reports endorsed by the Official Veterinarian of all tests and vaccinations required by *Part 2* of this IHS, which must include:<br><br>a) Unique identification for each animal, consistent with the veterinary certificate. | Can MPI please confirm IRT's interpretation that all laboratory reports would be required to include the microchip number of each horse?<br><br>IRT understands that microchip is the gold standard for animal identification. However, microchipping is not widely practiced in all sectors of the horse industry. As such, it is not routine practice for all laboratories world-wide to include microchip numbers on equine laboratory reports – it is more common that the horse's name is the form of identification. As such, IRT is concerned there may be some initial problems in changing practices for laboratories conducting export testing.<br><br>During this interim period - will MPI consider other forms of identification on laboratory reports e.g. hose names? |
| IHS 1.7 Pre-export isolation<br><br>(5)(f) MPI must be notified of any illness, injury, deaths, treatments or other conditions associated with equids in the PEQ facility. | Can MPI please advise if there is a prescribed timeframe by which this notification must occur. For example, should any treatments be notified immediately, within 48 hours, or would a summary just before export be sufficient? |
| IHS 1.8 Pre-export veterinary inspection<br><br>(1) Equids must be inspected by an Official Veterinarian within 24 hours of export and found free of clinical signs of disease, ectoparasites and seeds and be fit to travel. | IRT recommends that the words 'infectious or contagious' be added prior to 'disease'. This would retain consistency with the current health certificate for export of horses from Australia to New Zealand which references freedom from clinical signs of *infectious* disease. |

| | |
|---|---|
| IHS 1.10 Transport<br><br>(8) All feed and bedding during transportation must be free from seeds. | It will be extremely difficult to source seed-free feed especially for longer journeys e.g. From the UK or USA.<br><br>Haylage is often used for export from the UK as it helps to keep dust levels down. But it is not guaranteed to be free from seeds. There are also circumstances where haylage cannot be used (horse won't eat it or has a veterinary reason why it needs to eat other forage e.g. history of colic).<br><br>Lucerne/alfalfa hay is generally seed-free but would be unsuitable as a sole feed source for long journeys e.g. from the USA.<br><br>IRT would appreciate MPI reviewing this requirement. Other risk mitigation measure for exotic weed-seeds may be possible such as disposing of all imported feed as biosecurity waste and disposing of manure produced in the initial period of post-arrival quarantine as biosecurity waste. |
| IHS 1.13 Post-arrival quarantine<br><br>(3)a) Equine infectious anemia (EIA) if considered by MPI as highly prevalent in the country of export (minimum 7-day PAQ).<br><br>AND<br><br>4.2 Diagnostic tests required<br><br>(2) Equids imported from countries where equine infectious anaemia is considered by MPI as moderately to highly prevalent must be subject to an OIE prescribed test or one listed in MPI-STD-TVTL for international trade (with negative results) during PAQ | Could MPI please clarify what is meant by 'moderately to highly prevalent' or, alternatively list countries that are considered by MPI to be moderately to highly prevalent for EIA? |
| IHS 2.8 Endoparasites<br>(1) Equids that do not require any PEI must be treated **within 24-48 hours prior to travel** with a product highly effective against endoparasites and **applied in accordance with the recommendations of the manufacturer**; or | It is IRT's experience that many horses develop diarrhoea after being treated with an endoparasiticide. As such, the final treatment given 24-48 hours prior to export can be problematic and interfere with a veterinarian's ability to certify that the horse is free from clinical signs of disease and fit to travel. |

| | |
|---|---|
| (2) Equids that require PEI must be treated twice for endoparasites: a) The first treatment must be given within 24 hours after entry into PEI; and b) The second treatment must be given within **24-48 hours prior to export**; and c) The product(s) used must be highly effective against endoparasites and **applied in accordance with the recommendations of the manufacturer.** | Additionally, most manufacturers recommend that endoparasiticides are given at intervals of 4-6 weeks or greater, as such, administration twice within a 21-day period (for example for export from the UK) does not comply with manufacturer's recommendations.<br><br>Given there are no endoparasites identified as a risk organism in the draft IHS, and the PEI facilities are cleaned and disinfected prior to the consignment entering - would MPI consider a single treatment with an endoparasiticide within 24 hours of entry into PEI? |
| IHS 2.12 Equine influenza virus (EI)<br><br>(1) Equids must meet the recommendations in the Code chapter for Infection with equine influenza virus including the additional security testing. Unweaned foals under 180 days of age are not required to be vaccinated if accompanied by their dam with documentation showing the dam has met all requirements for equine influenza.<br><br>Extract from relevant Code chapter:<br>Article 12.6.7.<br>Recommendations for the importation of domestic equid which will be kept in isolation (see Article 12.6.1.)<br>Veterinary Authorities should require the presentation of an international veterinary certificate attesting that the domestic equids:<br><br>1. came from an EI free country, zone or compartment in which they had been resident for at least 21 days; in the case of a vaccinated domestic equid, information on its vaccination status should be included in the veterinary certificate;<br>OR<br>2. showed no clinical sign of EI in any premises in which the domestic equids had been resident for the 21 days prior to shipment nor on the day of shipment; and<br>3. were immunised in accordance with the recommendations of the manufacturer with a vaccine complying with the standards described in the Terrestrial Manual; information on their vaccination status should be included in the veterinary certificate or the passport in accordance with Chapter 5.12.<br><br>ProteqFlu manufacturer's recommendations:<br>Equine: Administer a dose (1 ml) of vaccine by intramuscular injection preferably in the neck according to the following vaccination schedule: Primovaccination with | IRT will regularly need to seek dispensation/variation for the clause requiring horses to be vaccinated against EI in accordance with manufacturer's recommendations as this is not widely practiced for example in the UK.<br><br>Rather, veterinarians tend to follow the Federation Equestre Internationale (FEI) rules https://inside.fei.org/news/equine-influenza-vaccination or British Horse Racing Authority (BHA) Rules, with regards to administration of EI vaccinations available at: http://rules.britishhorseracing.com/Orders-and-rules&staticID=126683&depth=3<br><br>FEI extract below:<br><br>1 Primary course of vaccination - a primary course should always be given according to the manufacturer's instructions by injection or intranasal administration. This requires 2 doses of vaccine administered between a minimum of 21 to a maximum of 92 days apart (1-3 months). The first booster vaccination must be given no more than 6 months +21 days (see item 5) after the second vaccination of the primary course; a shorter vaccination interval is obviously permitted.<br><br>BHA Extract below:<br><br>18.4 The horse must have received two primary vaccinations which are given not less than 21 days and not more than 92 days apart.<br><br>18.5 If sufficient time has elapsed, the horse must also have received |

| | |
|---|---|
| ProteqFlu-Te: First injection from 5/6 months of age, second injection 4 to 6 weeks later.<br>Revaccination: 5 months after the primary vaccination with ProteqFlu-Te, followed by:<br>• Against equine influenza: injection of 1 dose every year, alternatively with ProteqFlu or<br>• ProteqFlu-Te, respecting a maximum interval of 2 years for the tetanus component.<br>In cases of epidemiological risk or insufficient intake of colostrum, an additional initial injection of ProteqFlu at 4 months followed by the full immunization program (primary vaccination at 5/6 months and 4/6 weeks after, followed by revaccination). | 18.5.1 a booster vaccination which is given not less than 150 days and not more than 215 days after the second component of the primary vaccination, and<br><br>18.5.2 further booster vaccinations at intervals of not more than a year apart (or such lesser time as the Authority may, in an emergency, decide).<br><br>In recognition of the above, Australia has adapted their rules to allow EI vaccination intervals in accordance with these BHA/FEI rules. This has greatly reduced the administrative burden in applying for and processing dispensation requests, without any increase in biosecurity risk.<br><br>IRT requests that NZ MPI also consider allowing EI vaccination in accordance with the BHA/FEI rules. |
| IHS 2.12 Equine influenza virus (EI)<br><br>(2) EI vaccines must contain equivalent strains of EI virus as recommended by the OIE Expert Surveillance Panel on Equine Influenza Vaccine Composition: http://www.oie.int/en/our-scientificexpertise/specific-information-and-recommendations/equine-influenza/<br><br>Extract from above link:<br><br>Vaccines should contain both clade 1 and clade 2 viruses of the Florida sublineage. | There is only one vaccine available in the UK that contains both Clade 1 and Clade 2 virus strains (ProteqFlu – Boehringer Ingelheim). As other EI vaccines are widely used throughout the world, IRT would likely need to regularly seek dispensation or variation from this clause as currently written.<br><br>Australian conditions require EI vaccines to contain the most up-to-date virus strains available.<br><br>Dr Richard Newton BVSc, MSc, PhD, DLSHTM, DipECVPH, FRCVS, of the Animal Health Trust, UK has advised IRT:<br><br>“There continues to be no evidence from the field for significant failure of efficacy among any of the vaccines and there are very low levels of detection of EI generally although this situation may change at any time of course.”<br><br>Would MPI consider amending this condition to align with the Australian policy which works to ensure horses are protected from EI but doesn’t place such strict limitations on sourcing the correct vaccine? |

| | |
|---|---|
| | While IRT agrees with Dr Newton's statements that the situation as regard to EI detection/vaccine failure can change at any time, the PEI and PAQ durations and testing regimen would adequately protect against the risk that vaccine failure would result in disease incursion in New Zealand. |
| IHS 2.19 Taylorella equigenitalis (contagious equine metritis)<br>(1) Equids must be kept, since birth or for at least the 60 days prior to export, in a country recognised by MPI as free from contagious equine metritis (CEM), and where no case of CEM has been reported in the 2 years prior to export; or<br>(2) The equid is a gelding; or<br>(3) Equids must:<br>a) Be kept, since birth or for at least 60 days prior to export on premises where no case of CEM has been reported during that period; and<br>b) Must have no contact with CEM directly, through breeding (naturally or via artificial insemination) with an infected equid, or indirectly by passing through an infected premises, during the 60 days prior to export; and<br>c) Must be subjected to a test for CEM in the 30 days prior to export, with negative results;<br>i) Stallions and colts must be sampled two times at intervals of 4-7 days. Sampling sites are the urethra, urethral fossa and its sinus, and the penile sheath;<br>ii) Mares and pubertal fillies must be sampled two times at intervals of 4-7 days. Sampling sites are the clitoral fossa and sinuses; and<br>d) Must not receive antibiotics within 7 days (systemic treatment) or 21 days (local treatment) before the first sample collection or during the CEM sampling period; and<br>e) Must not be naturally mated or inseminated with semen from a CEM-untested stallion since the date of first sampling for CEM; or<br>(4) The equids are less than 731 days of age and do not require testing, but must be accompanied by equivalent testing of their dam corresponding to the pre-breeding test for the season the foal was born. | IRT would like to request that no CEM testing be required on un-weaned fillies and colts 6 months or younger.<br><br>We understand that clause (4) allows for horses 731 days old or younger to be imported without testing provided they are accompanied by equivalent testing of their dam corresponding to the pre-breeding test for the season the foal was born. However, we consider this testing will be very difficult to obtain for non-thoroughbred or standardbred horses. |

| | |
|---|---|
| IHS Part 3: Pre-Export Isolation (PEI)<br><br>3.4 Facility<br>(1) The risk of airborne spread of equine contagious diseases must be managed and adequate distance must be maintained between quarantine and non-quarantine equids. **Standard operating procedures must include details of how this risk is managed.** | Can MPI clarify whether this standard operating procedure (SOP) must be formally approved by MPI? Does the SOP need to be in a specified format? If yes, will MPI be providing a template or model document the SOP manuals should be based on? |
| IHS Schedule 2 Definitions<br>Highly effective<br>For the purposes of the standard when referencing endo- and ectoparasiticides; with claims registered as highly effective (>98%) for use in horses, at the manufacturer's prescribed doses and intervals of administration. | It can be difficult for shippers to obtain information regarding the registered claims for these products as this is not always stated on the label or publicly available.<br><br>Newmarket Equine Hospital (NEH) are the UK Department for Environment, Food and Rural Affairs (DEFRA) Official Veterinarians that are responsible for preparing many horses for export to New Zealand. They share IRT's concerns regarding the term 'highly effective' noting: "There are no claims of efficacy made for either Switch or Equimax on their datasheet. It would be unusual to find a manufacturer who would claim a specific % efficacy for either ecto- or endoparasite treatment in this country but there may be published scientific articles on this subject although all we can find at the moment is claims for 'satisfactory efficacy' or more than 90% for Equimax. There are no efficacy studies for Permethrin (the Veterinary Medicines Directorate claims they are unnecessary)"<br><br>Some more guidance as to acceptable products or active ingredients would be helpful in ensuring compliant products are used. |
| Removal of clause from current IHS which states:<br><br>Vaccinations required for import of horses into New Zealand must be administered not less than 35 days before export (for adequate immunity prior to entering PEI), except where Venezuelan equine encephalitis (VEE) and African horse sickness (AHS) vaccines are required. | IRT notes this clause appears to have been removed from the revised draft IHS.<br><br>Can MPI confirm that it is now permissible to vaccinate a horse during PEI for instance if an EI booster falls during the PEI period? |
| Guidance Document<br>5.9 Residency in more than one country<br>(1) Where the specified requirements for risk organisms in Part 2 of the IHS requires a minimum residency period in the exporting country immediately prior to export to New Zealand, equids may reside in more than one country | IRT welcomes this guidance as it is rare that a horse, particularly racing/competition horses, will be continuously resident in a single country.<br><br>Could MPI please provide some additional advice as to how this system will work from a certification perspective? For example will NZ MPI be implementing the Australian system |

| | |
|---|---|
| of export provided the countries are approved and of at least equal health status.<br><br>(2) Equivalent residency must be approved by MPI prior to import and will be recorded on the import permit. When requesting equivalent residency, copies of the export certificates from the country or countries of residence should be provided at the time of import permit application. | and be negotiating separate residency certificates with each approved country that must be certified by the relevant country's competent authority and travel with the horse? Or will the export certificates referenced in (2) or some form of residency be sufficient?<br><br>As MPI is aware, competent authorities will not complete certification that is not produced by their government/on their letterhead and will not certify to the equine health situation in other countries. |
| Guidance Document<br>5.10 Equine Disease Free Zones | IRT would welcome an update from MPI as to the status of the assessment of the EDFZ in Conghua, China. |
| Guidance Document - Model Health Certificate<br><br>(13) Vaccine names, whether they are inactivated or modified live virus (where applicable), the virus types and strains included in the vaccine (where applicable), and date of treatment are recorded on this veterinary certificate. | IRT notes that this is a considerable increase in the amount of information required regarding vaccines.<br><br>We anticipate there will be an education process required for veterinarians being asked to include this more detailed information when completing health certificates. Could MPI please provide some justification as to why this information is now being requested, in order to assist with this process? |

## 5.2 NZEHA, Dr Patricia Pearce

**Consultation on a revised New Zealand Import Health Standard (IHS) for equids**

Feedback from the New Zealand Equine Health Association

Co Authors: Drs Daan Vink, Ray Cursons, Joe Mayhew, Trish Pearce

10 February 2019

### 1. Introduction

A recent review of factors resulting in equine disease events following international movement of horses from 1995 to 2014, identified from the databases of the World Organization for Animal Health (OIE) and international surveillance reports identified 54 disease events. Seven were contained in post arrival quarantine and the others resulted in the introduction of pathogens into importing countries. For 81% of the introductions, the OIE recommendations applicable to the diseases involved had not been complied with. Eighty-eight percent (36/41) of the regulated movements that resulted in introduction of pathogens into the importing country involved infected horses that showed no clinical signs at the time of import (asymptomatic carriers, inapparent infection or horses incubating a particular infection).

Biosecurity and management practices in resident equine populations have also been identified as important mitigating factors in preventing disease spread to the local horse population (Dominguez et al. 2015). Equine influenza (13 events) and contagious equine metritis (12 events) were identified as the most common cause of imported disease. This importance of the carrier animal is further emphasized by the Australian equine influenza outbreak that followed the importation of four unvaccinated racing stallions from Japan, soon after an outbreak of EI in Japan. Therefore, import standards must place emphasis on both those diseases associated with a carrier state and the recommended laboratory tests (mainly PCR) that can detect such carrier states.

According to Stats NZ Infoshare statistics for the period 2007 – 2017, there has been a sharp rise in the number of live imports of horses into New Zealand since 2012 (see Table 1 and Figure 1). The total number of imported horses rose from under 100 pre-2012 to over 1,200 in 2017. The data for the last two quarters of 2018 are not yet available at the time of writing, but the numbers for the first two quarters of this year are comparable to those of 2017.

Table 1: Numbers of imported live horses into New Zealand by country of origin, 2007 – 2017. These data include animals classified into 69 Harmonized Commodity Description and Coding System (HS) codes, but exclude asses, mules and hinnies. Source: Stats NZ.

| Country of origin | Year | | | | | | | | | | | All |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | |
| Belgium | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Denmark | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| France | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Malaysia | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Portugal | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Thailand | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Canada | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| Israel | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| Netherlands | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 |
| Japan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| Ireland | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 1 | 6 |
| Germany | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 6 | 68 | 76 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| United States of America | 4 | 1 | 0 | 1 | 1 | 52 | 13 | 30 | 10 | 14 | 11 | 137 |
| United Kingdom | 0 | 0 | 0 | 1 | 2 | 39 | 38 | 17 | 29 | 26 | 23 | 175 |
| Hong Kong | 0 | 0 | 0 | 0 | 0 | 78 | 93 | 143 | 105 | 104 | 175 | 698 |
| New Zealand | 4 | 2 | 11 | 6 | 12 | 330 | 386 | 398 | 342 | 301 | 336 | 2,128 |
| Australia | 3 | 2 | 79 | 43 | 28 | 493 | 501 | 571 | 576 | 600 | 617 | 3,513 |
| **All** | **11** | **6** | **90** | **51** | **43** | **992** | **1,036** | **1,160** | **1,070** | **1,058** | **1,231** | **6,748** |

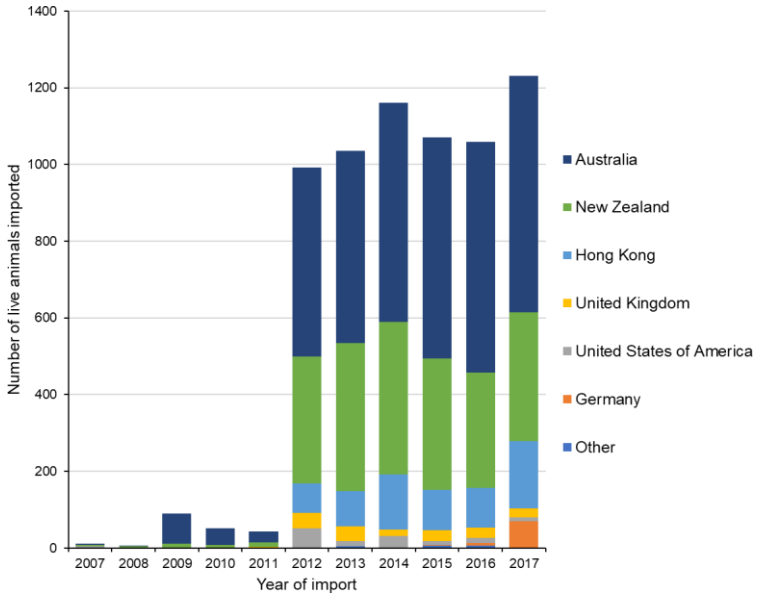


Figure 1: Numbers of imported live horses into New Zealand for the period 2007 – 2017, stratified by the main countries of origin. Source: Stats NZ.

In terms of import origin, 52% of these animals originate from Australia, and a further 32% are re-imports of horses. Of the remainder, Hong Kong makes up the largest number (10% of the total); other countries of origin include UK, USA, Germany, various other European countries, Israel, Malaysia and Thailand.

These imports are year-round; breaking down the statistics by quarter of the year did not show any significant seasonal trend (Table 2).

Table 2: Numbers of live imports of horses stratified by quarter of the year for the period 2007 – 2017. Source: Stats NZ.

| Quarter | Number of live imports | Percentage of total |
|---|---|---|
| First | 1,691 | 25% |
| Second | 1,962 | 29% |
| Third | 1,331 | 20% |
| Fourth | 1,764 | 26% |
| | 6,748 | 100% |

The increasing numbers of imports must inevitably reflect an increase in the risk of introduction of unwanted organisms into New Zealand, even if this is difficult to quantify. It is likely that a number of imported horses from Hong Kong and the UK originate from third countries; this cannot be ascertained from the statistics (although a minimum residency period in the exporting country prior to export to New Zealand is stipulated where required). In addition, the apparent rising number of New Zealand horses travelling for sporting events and subsequently returning represent an opportunity for these animals to come into contact with horses from other parts of the world.

Incursions of infectious diseases can be highly damaging socially, economically and to animal welfare. The epidemic of Equine Influenza (EI) in Australia in the early 2000s is a good example. Closer to home but in another sector, the Mycoplasma bovis incursion in cattle in 2017, which is ongoing at present, is continuing to have a huge socio-economic impact.

In the equine sector horse movements occur at a very high intensity and across the entire country. In a study completed by McFadden et al, where 16 consignments arrived comprising 96 horses over a 25-day period it was found they moved to 56 different properties situated from the far North to as far south as Dunedin. Equine disease incursions could thus be expected to spread the entirity of the country and quickly immobilise all equine economic activity if risk organisms are not identified or contained by the import processes.

In January 2000, the Ministry for Primary Industries (MPI) completed an Import Risk Assessment (IRA) for horses and horse semen (MAF, 2000). The Import Health Standard (IHS) that resulted from this has been in place since then.

In 2018, an amendment was developed to review and update this IHS, where necessary and appropriate. A draft MPI Risk Management Proposal (Equids)(MPI, 2018d) was circulated, which stated that "This amendment is the result of a review of the current requirements to ensure the recommendations are up to date. Where equids are required to meet World Organisation for Animal Health (OIE) Terrestrial Animal Code recommendations in the standard, the requirements reflect the most current Code. When Code chapters are amended, MPI will review these changes to ensure they continue to align with New Zealand's Appropriate Level of Protection (ALOP). Where recommendations no longer meet New Zealand's ALOP, Code recommendations will be replaced with risk-based MPI recommendations and the IHS will be amended. Otherwise the most recent version of the Code should be referred to." In addition to the Risk Management Proposal, a draft IHS plus a guidance document were released for consultation.

## 2. Objectives and scope

The objective of this work is to review the draft Risk Management Proposal (RMP) and IHS for horses being imported into New Zealand. Three draft documents were circulated by MPI for consultation; these are specified in section 3.1.

In terms of this review, any overarching comments are provided in the General observations sections. As stated in the RMP document, the requirements generally accept the current Terrestrial Code requirements as a minimum, and 'upgrade' these to meet New Zealand's higher ALOP where necessary.

The specific focus of NZEHA's concerns include consideration of the pre-import test requirements for two diseases (Equine Infectious Anaemia (EIA) and Contagious Equine Metritis (CEM)). In addition, NZEHA questioned whether more stringent requirements should be made regarding Hendra virus disease, specifically regarding vaccination of horses in flying fox endemic areas (section 5 Risk organism-specific observations). All three diseases are on the list of organisms declared to be notifable under the Biosecurity Act 1993 (Tana and Chamberlain, 2017). As the chapters in the OIE Code are minimal for these diseases, the objective is to assess whether the pre-import requirements stipulated in the draft IHS are adequate to mitigate the risks of entry.

Also of concern is the assessment that New Zealand has no competent tick vector for the disease Piroplasmosis and that the OIE pre-import test requirements include three available tests, one of which it describes as superior but leaves the others available for use despite their high relative risk of false negative results in recently infected horses.

## 3. Methodology

### 3.1 Documents consulted

The draft documents consist of the following:

- Risk Management Proposal: Equids (LIVEQUID.GEN)(MPI, 2018d);
- Import Health Standard: Equids (LIVEQUID.GEN)(MPI, 2018c);
- Guidance Document: Equids (LIVEQUID.GEN)(MPI, 2018b).

Other relevant documents utilised include:

- Approved Diagnostic Tests, Vaccines, Treatments, and Post-Arrival Testing Laboratories for Animal Import Health Standards (MPI-STD-TVTL)(Date: 8 May 2018) (MPI, 2018a);
- Import risk analysis: horses and horse semen (Date: 20 January 2000) (MAF, 2000);
- Absence of Specified Animal Diseases from New Zealand (Biosecurity New Zealand)(Date: 1 January 2019) (MPI, 2019);
- OIE Terrestrial Animal Health Code (2018) chapters on CEM (OIE, 2018a) EIA (OIE, 2018b) Equine Piroplasmosis (OIE, 2014);
- OIE Terrestrial Manual (2018) chapters on CEM (OIE, 2018c), EIA (OIE, 2018d), Equine Piroplasmosis (OIE 2014) and Nipah and Hendra Virus Diseases (OIE, 2018e).

Additional references are cited in the text, and are displayed in the References section.

3.2 Review process

The draft documents were closely read, and many general comments and observations were noted.

A range of external experts were asked to review specific diseases and subsequently undertook a brief review for EI, EVA, Piroplasmosis, EIA, CEM and Hendra virus disease; this included the situation regarding the international distribution and status, salient epidemiological features for transmission and establishment, diagnostic test availability and performance, and the summarised OIE recommendations.

The specific sections in the consultation documents referring to the associated viruses were then scrutinised. In addition, MPI's list of Approved Diagnostic Tests (MPI, 2018a) was accessed for some organisms, plus the relevant OIE Terrestrial Code and Manual chapters. Some New Zealand-specific references and literature on these diseases were identified.

Finally, observations were made regarding proposed changes, potential gaps or omissions identified, and possible modifications, clarifications, additions, etc. were formulated.

**4. General observations**

The organisation and presentation of the information and requirements in the new IHS are clear and a definite improvement over the current one.

The documents circulated by MPI do not discuss the increasing numbers of imports, changes in the distribution and profiles of priority equine diseases worldwide, and the resulting potential impacts and requirements for border- and post-border biosecurity.

The rising number of imports from other countries imply that to an extent, we are affected by the biosecurity standards and IHS adopted by these countries. In addition, pre-border biosecurity in the form of disease intelligence scanning for incursions occurring in these countries informs and motivates modifications to the IHS, and eventually the implementation of additional biosecurity measures. Some information on what system is in place for this, and how this is performed, would be helpful.

A document history is included in the IHS and the accompanying Guidance document, which indicates that regular review has taken place, to align with the Code recommendations. Some description can be retrieved from Surveillance magazine:

- 22 May 2014: "requirements for equine viral arteritis and contagious equine metritis, and removing requirements for West Nile virus." (Anonymous, 2015b)

- 1 February 2013: “changes for the importation of live horses and align measures with the code. Negotiation for veterinary certificates under this IHS was postponed pending the outcome of the Australian Department of Agriculture’s consultation on reducing the testing requirements for contagious equine metritis.” (Anonymous, 2014)

However, other changes are less apparent and are merely listed by the dates; there is no description of which amendments or updates were made. This makes it more difficult to assess these changes. It is conventional to include such a description, so that the reader can assess the nature and extent of the modifications.

In the Risk Management Proposal: Equids document, the Background and Options assessment sections clarify that the current IHS is based on the original IRA that was published by MAF – Biosecurity NZ in 2000 (MAF, 2000). In the Options Assessment of the RMP document, it is “concluded that risk management measures were justified”, on the basis of potential hazards, for the 31 diseases that are still considered relevant. It is not clearly shown how the decision-making to result in this listing was carried out.

Of these 31 diseases, it is concluded that no specific measures are necessary for eight of these, which have therefore been omitted from the IHS. As this is based on a motivating discussion, this is acceptable in principle, although the justifications were not considered here.

As a general theme the NZEHA is concerned at the flexibility of choice for which tests can be used for a number of the diseases. This may be an interpretation issue but as a rule NZEHA seeks that countries utilise the most *recommended method* in their pre export testing and the code includes many tests that are deemed suitable or may be used that the code identifies are less sensitive or specific than others. Because these diseases are often endemic in the exporting countries but are exotic to New Zealand the NZEHA believes New Zealand can argue a strong case that the most accurate test regimes available are used.

NZEHA seeks more understanding on the criteria MPI employs in determining if countries are free of the range of identified risk organisms as this determines if preimpoprt testing is required for many organsisms listed in Part 2 of the IHS. In addition more transparancy around the mechanisms to monitor this is sought.

**5. Risk organism-specific observations**

In the RMP document, a section per risk organism reviews and updates the requirements for these diseases, and changes are proposed on the basis of a Discussion section. This is a helpful and logical method to motivate how the resulting Recommendations have been arrived at.

5.1 Equine Infectious Anaemia (EIA)

5.1.1 General information of relevance for the IHS

*Global status and epidemiology.*

Equine infectious anaemia has been found nearly worldwide, particularly the Americas but also South Africa and in parts of Asia, Europe and Australia. This disease is absent from a few countries including Iceland and Japan (Spickler, 2009). It is also absent from New Zealand (MPI, 2019). Australia presents some risk to New Zealand as the disease is endemic in the river valleys in Central Queensland and in 2004 was identified in Coastal Queensland.

EIA is caused by a retrovirus (Equine Infectious Anaemia virus (EIAV)). It is transmitted mechanically by biting insects. The most effective vectors are horse flies (Tabanus spp. and Hybomitra spp.) and deer flies (Chrysops spp.); however, stable flies (Stomoxys calcitrans) are also competent thus faciltating the possibilty of local spread following the introduction of a silent carrier into New Zealand.

The disease is characterised by acute and / or chronic recurring clinical signs including fever, anaemia, oedema and cachexia in some animals. These signs are often very mild or inapparent signs on first exposure. The incubation period is 1-3 weeks, but in rare cases, horses may not develop antibodies until 60 days.

Infected horses may carry this virus subclinically; all infected horses become carriers and are infectious for life. Therefore, to eradicate the infection if it entered New Zealand, infected horses would need to be destroyed on confirmation of diagnosis. Affected stables would be treated to eliminate or reduce the local population of Stomoxys and other biting insects. Other horses in the vicinity of an index case would be movement controlled and monitored by serological testing for a period after destruction of the last known infected horse (Anonymous, 1996).

Eradication by implementing these measures should be successful. However, given the mild and vague clinical signs, the owners of infected animals are unlikely to realise that they are infected until this is confirmed by serological testing. Hence, the diagnosis of the index case may be delayed, resulting in a delay in detection (Anonymous, 1996). In addition, because it is insect-borne, there is a chance that the disease could become endemic.

*Diagnosis and testing.*

EIA should be among the differentials in individual horses with weight loss, oedema and intermittent fever. It should also be considered when several horses experience fever, anaemia, oedema, progressive weakness or weight loss, particularly when new animals have been introduced into the herd or a member of the herd has died.

EIA is often confirmed by serology. The two most commonly used serological tests are the agar gel (Agar gel immunodiffusion (AGID) or Coggins) test and enzyme-linked immunosorbent assay (ELISA). Horses do not seroconvert using the AGID test for 2-3 weeks. ELISAs detect antibodies earlier and are more sensitive, but are less specific. For this reason, the recommendation is that positive results on ELISA are confirmed with the AGID test or immunoblotting (Western blotting). However, a study in Italy reported very good performance of the ELISA (Scicluna et al., 2016).

Reverse-transcriptase polymerase chain reaction (RT-PCR) assays are used to detect the viral antigen in infected horses. Polymerase chain reaction (PCR) tests can also be used to supplement or confirm serological tests, particularly when there are conflicting results or when an infection is suspected but serology is negative or equivocal (e.g., in early cases where antibodies have not developed). In addition, this technique can ensure that blood donors and horses used for vaccine or antiserum production are uninfected.

Virus isolation is not usually required for a diagnosis, but it can be done. EIAV may be found in both plasma and blood leukocytes during febrile episodes; between these periods, this virus is cell-associated. Virus isolation is performed in horse leukocyte cultures; because these cells are difficult to grow, this test may not be available in all laboratories. The identity of the virus can be confirmed with antigen-specific ELISAs, Immunofluorescence antibody tests (IFATs) or PCR.

These tests are all listed in the Code. The AGID and ELISA tests perform best for most purposes, with the PCR test being useful for agent identification in the pre-seroconversion period, or for foals born to infected mares, as maternal antibodies may persist up to the age of 6-8 months. However, the Animal Health Laboratory (AHL) lists only the AGID and ELISA tests.

*Investigations and rule-outs in New Zealand.*

EIA is a disease for which there appears to be good awareness, as evidenced by the regular investigations of reported suspect EIA cases, notified through New Zealand's general surveillance system, that are performed by MPI's Surveillance and Incursion Investigation group and AHL. The numbers of these investigations are reported annually in Surveillance magazine (Figure 2). Individual reports of these rule-outs are published quarterly (due to

their large number, individual references will not be cited here). There has been one case confirmed as positive associated with importation in the past 20 years. There is no evidence of a rising trend in numbers.

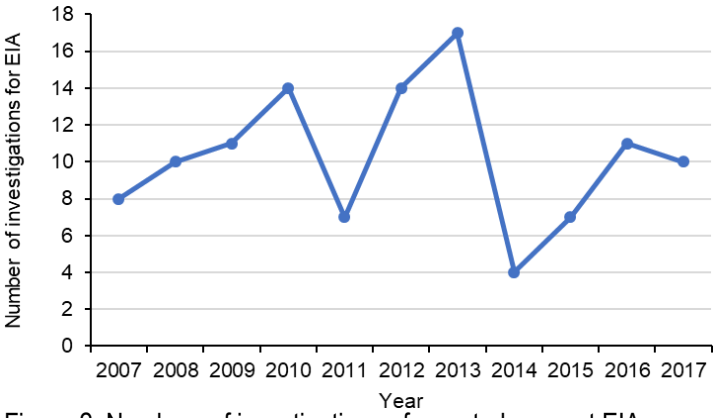


Figure 2: Numbers of investigations of reported suspect EIA cases for the period 2007 – 2017.

5.1.2 Proposed changes to the IHS

The OIE Code chapter is rudimentary, presumably due to the disease being endemic extensively across the world, and is of very limited use or guidance. As is consistent with the RMP, New Zealand currently requires post-arrival quarantine and further testing which is beyond the Code.

The recommendation for the revised IHS do not differ greatly from the current one. Whereas the current standard states that horses should be "showing no clinical signs of EIA on the day of export", this has been sharpened to "must not show any clinical signs of EIA within 48 hours prior to export".

However, the criterion for post-arrival quarantine of a minimum of 7 days for horses imported from medium to high prevalence EIA countries, plus testing during this period, appears to have been dropped, despite the explanatory text stating that ". . . post-arrival quarantine for periods of 7-14 days with repeat serological testing during this period will reduce risk of infected animals being introduced. This is considered justified for New Zealand in order to maintain our status as free from EIA". It is unclear why this requirement has not been retained.

5.1.3 Comments and observations

*Recommendations*

We would propose that the following will be considered for the revised IHS:

1. The requirement for post-arrival quarantine plus testing of horses from medium to highprevalence EIA countries be retained. In practice, this is unlikely to have a major impact, as very few horses are imported from such countries. However, it does represent an additional safeguard.
2. Considering that a number of the suspect EIA cases that are reported in Surveillance magazine are foals, the availability of an antigen detection test – that is, the PCR – would be helpful. Such a test would also be useful for equivocal serological test results. This test is currently not in use at AHL.
3. For countries that are not free of EIA but are considered low to medium risk the option to use PCR should be made available.

5.2 Contagious Equine Metritis (CEM)

5.2.1 General information of relevance for the IHS

*Global status and epidemiology*.

CEM is a highly communicable venereal disease of horses, caused by the bacterium Taylorella equigenitalis. A disease of regulatory importance and a threat of financial significance to the equine industry, the agent emerged in the 1970s in the United Kingdom and has been detected around the world since (Snider, 2015). Due to the nature of the disease, it is difficult to determine how widely CEM is distributed throughout the world (APHIS, 2014). The organism has been detected at times in Europe, North and South America, Africa and Asia. Figure 3 shows the status of countries that have reported CEM to OIE's World Animal Health Information System (WAHIS) for the period 2007 – 2017. In some countries, it may be absent or rare in some breeds of horses (e.g. Thoroughbreds) due to control programmes, but present in others. Some nations have reported to have eradicated CEM, including certain European countries, the US, Canada, Australia and Japan (Spickler, 2015). However, United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) has reported a number of breakdowns in the United States, with the most recent cases in 2013 (APHIS, 2014).

This disease can spread widely from a single asymptomatic carrier, particularly a stallion (Spickler, 2015). Transmission is by direct contact during natural mating, by artificial insemination using infective raw, chilled and possibly frozen semen or indirectly, through fomite transmission, manual contamination, inadequate observance of appropriate biosecurity measures at the time of breeding and at semen collection centres (OIE, 2018c).

Infected horses do not become systemically ill or die, but reproductive success is reduced. The effects of the disease are restricted to the reproductive tract of the mare; clinical signs include endometritis, cervicitis and vaginitis of variable severity and a slight to copious mucopurulent vaginal discharge. Recovery is uneventful, but prolonged asymptomatic or symptomatic carriage is established in a proportion of infected mares (OIE, 2018c). Treatment is also time-consuming: it can take months to clear the agent (Snider, 2015; APHIS, 2014). Infection does not always adversely affect conception and abortion due to T. equigenitalis is a very rare occurrence. Many primary cases are subclinical, and a frequent indicator of infection is the mare returning in oestrus prematurely after being bred to a putative carrier stallion. Infection in a stallion is asymptomatic (OIE, 2018c).

Excluding T. equigenitalis from a country can be challenging. Control programmes have significantly reduced the incidence of this disease in Thoroughbreds, which were severely affected by outbreaks in the 1970s; however, it also occurs in other breeds, and identifying carriers can be difficult (Spickler, 2015).

The US follows the OIE Code recommendations that horses imported from CEM countries must have been recognised as not being contagious through laboratory tests for CEM (see below), and have been protected against any possibility of contagion since the beginning of the tests, before entering the United States (OIE, 2018a). Despite this, a study investigating the frequency of the carrier state in stallions and mares that had undergone post-entry quarantine and testing for CEM in accordance with the USDA prescribed protocols found that there was a continuing risk of reintroduction of CEM into the US from known CEM-affected countries (Timoney et al., 2016). Over the 17-year study period, 38 stallions and mares were confirmed to be carriers of T. equigenitalis. There were two instances, both involving stallions, where the post-entry testing protocol failed to detect the carrier state prior to the stallion's release from quarantine. It was noted that culturing of a single set of swabs only identified eight of the 27 carrier stallions. Detection was more successful by test breeding (18 of the stallions). The overall conclusion was that a fully validated, less costly, more rapid, and logistically less challenging in vitro test is sorely needed for detection of the carrier state, especially in the stallion.

*Diagnosis and testing*.

Bacterial culture is currently the OIE's preferred procedure for international trade or movement. Designated swabbing sites are usually specified for international movement, by the competent authorities (OIE, 2018c). However, T. equigenitalis is fastidious and slow-growing, and can be difficult to culture.

Molecular testing methods such as PCR and RT-PCR are commonly used to detect Taylorella directly (from swabs) and indirectly (from culture plates). According to the OIE OIE (2018c), the PCR was shown to be highly specific and was able to detect very small numbers of T. equigenitalis in the presence of very large numbers of

background flora. A study in Japan showed that the PCR was more sensitive than culture for the detection of T. equigenitalis from genital swabs of horses (Anzai et al., 2002). A French study describes a rapid sample preparation method in combination with a RT-PCR and reports a diagnostic sensitivity of 100% and diagnostic specificity of greater than 92% (Léon et al., 2016). Elsewhere, the Manual notes that there is no significant difference in the performance of the direct PCR and culture, but the PCR has the advantage of speed of result. Commercial PCR kits are available and these may be used to enhance the testing capabilities of authorised laboratories. However, it appears that the PCR test has not been validated by the OIE.

Serological tests are useful only in mares and for short periods. In addition, some recent strains circulate with only mild clinical signs (Spickler, 2015). The OIE Manual notes that, "No serological test described to date will, by itself, reliably detect infection for diagnosis and control. However, the complement fixation test has been used successfully as an adjunct to culture for T. equigenitalis in screening mares between 21 and 45 days after being bred to a suspect carrier stallion." (OIE, 2018c)

The Manual also discusses serotyping methods and an IFAT. The latter has a reported sensitivity and specificity of 93% and 100%, respectively, and kits appear to be commercially available.

MPI's AHL lists bacterial culture and quantitative PCR as the approved diagnostic tests.

*Investigations and rule-outs in New Zealand.*

Sporadic investigations for CEM are performed by MPI's Surveillance and Incursion Investigation group, and rule-outs were reported in 2013 and 2016 (Bingham, 2016, 2013). However, no investigations were included in the annual report in Surveillance magazine.

5.2.2 Proposed changes to the IHS

Previous changes have been implemented. It was reported in Surveillance magazine that the IHS was amended on 1 February 2013 "to reflect changes in recommendations in the OIE code for the importation of live horses and align measures with the code. Negotiation for veterinary certificates under this IHS was postponed pending the outcome of the Australian Department of Agriculture's consultation on reducing the testing requirements for contagious equine metritis" (Anonymous, 2014). The following year, it was reported that the IHS was again amended for CEM on 22 May 2014, "to align with the Code recommendations and requirements. Veterinary certificates were negotiated with Hong Kong, Singapore and Australia. As new veterinary certificates come into use, the IHSs they replace will be revoked." (Anonymous, 2015b) These changes reflected the fact that Australia changed their import conditions to swabbing on two occasions at least four days apart if the animal didn't have a history of infection. Previously, three tests were required.

The proposed draft IHS is much more clearly written than the current one and effectively presents the requirements for equids imported from countries which are not recognised as being CEM free:

- Reduces the horses' period of residence prior to export on premises where CEM has not occurred from three to two months;
- Stipulates that there should not be any contact with CEM during this time;
- Requires two pre-import test cultures (with negative results) in the 30 days prior to export (the current requirement is three cultures in the 60 days prior to export);
- Must not have received antibiotics for stipulated periods before the first testing;
- Must not have contact with CEM untested animals since the date of first testing.

The last two are new requirements.

5.2.3 Comments and observations

As is the case for EIA, the OIE Code chapter recommendations are below New Zealand's ALOP, and hence the current requirements stipulated by the IHS are more stringent. We consider this appropriate and necessary. The Timoney et al. (2016) study showed that, even if rare, the importation of infected stallions that are not identified as positives using the current test protocol has occurred in the US. The import requirements and testing protocols in

the US are highly comparable to New Zealand. In addition, querying the WAHIS database showed that CEM was reported in nine countries (and potentially more) from which horses were imported in the period 2007-2017 (Belgium, Denmark, France, Germany, Ireland, the Netherlands, Portugal, the UK and the US) (Figure 3). The increasing number of imported horses, as shown in Table 1, may exacerbate this risk. We conclude that the risk of CEM entering New Zealand is non-negligible.

Given the fact that infected stallions are not affected and many infected mares remain subclinical, in addition to which clinical signs may be transient, the diagnosis of the index case may be delayed, resulting in a delay in detection. Combined with the highly communicable nature of the disease, this implies that if introduced into New Zealand, CEM would be expected to have spread by the time the infection was confirmed.

As noted by Spickler (2015), eliminating the infection from a country can be challenging: this requires control programmes, and identifying carriers can be problematic. This would have a direct impact on the duration and cost of eradication.

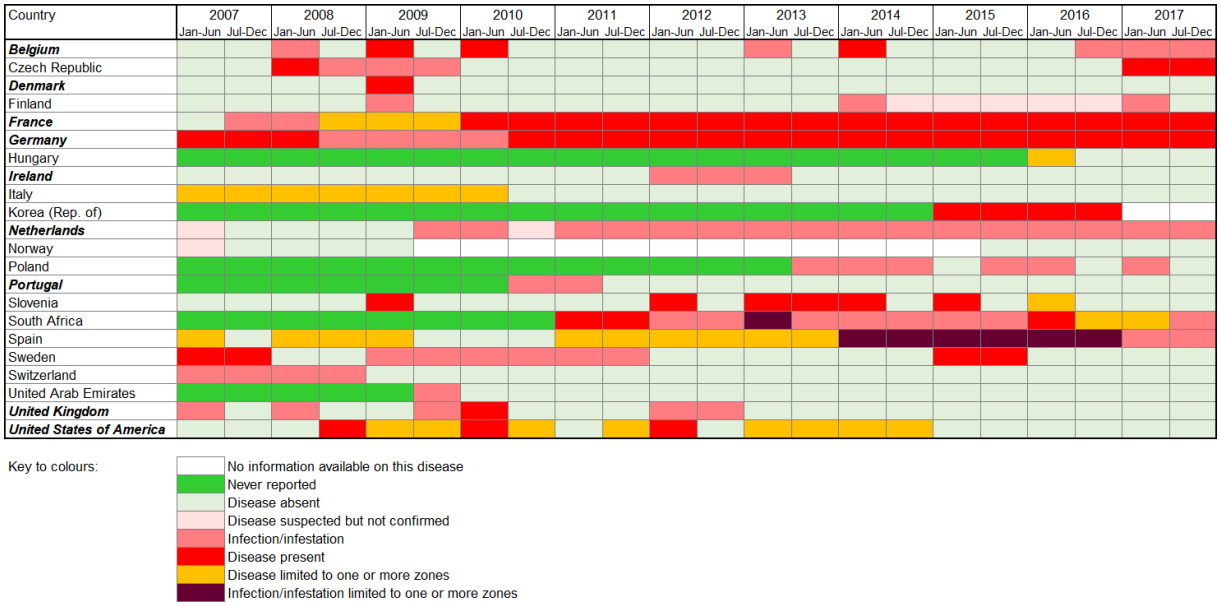


Figure 3: Disease timelines of countries reporting CEM to OIE WAHIS for the period 2007 – 2017. Countries italicised in bold have exported to New Zealand during this period.

Given all the above, we make the following recommendations.

*Recommendations*

The requirements in the draft IHS are much more clearly presented, and we welcome the additional requirements regarding antibiotic treatment or mating with CEM untested animals in the pre-export period. However, we would wish the following to be considered:

1. Notwithstanding that the OIE appear to have not yet validated the PCR and/or the IFAT tests, we believe that these tests have benefits over bacterial culture, and should be considered at least as supplementary test options, and preferably as the preferred tests.
2. Given that germplasm has been mentioned as being infectious, is any testing done of imported semen?
3. Is there a published list of countries recognised by MPI to be free of CEM? Is this list regularly reviewed (incorporating disease events reported to WAHIS)?

## 5.3 Hendra virus disease

### 5.3.1 General information of relevance for the IHS

*Global status and epidemiology*.

Hendra virus infection is an emerging but rare viral disease that is maintained in asymptomatic flying foxes (pteropid fruit bats). Seropositive flying foxes have been found from Darwin in north central Australia to Melbourne in southeastern Australia. However, the disease has only occurred in a geographically restricted part of Australia (coastal Queensland and northern New South Wales). Virus shedding from these bats appears to increase at unpredictable intervals, leading to spillover events that transmit Hendra virus to horses. Less than 100 cases have been confirmed since it was first recognized in 1994, in a population of over one million horses. Infected horses usually experience a brief, severe respiratory or neurological illness with a high case fatality rate, and are thought to be incidental hosts (Anonymous, 2015a).

Horses become infected by ingesting or inhaling Hendra virus from the environment, most likely when they feed in areas contaminated by flying fox urine and / or virus-contaminated fruit. The required infectious dose is high. The incubation period is assumed to range from 5 to 30 days.The index case is usually a horse kept outside, near flying fox activity. Hendra virus does not appear to be highly contagious among horses; horse-to-horse transmission is rare among animals kept on pastures, although infected horses brought into stables have spread the virus to a few animals in close contact.

In horses, Hendra virus appears to be widespread in the body before the clinical period, and it has been found in nasal secretions before the onset of clinical signs. Virus shedding occurs in nasal and oral secretions, urine, faeces, blood and a wide variety of tissues, although the presence of infectious virus has not been confirmed in all secretions / excretions. It is unclear whether horses can remain persistently infected after recovery.

In a number of incidents, Hendra virus has spread from horses to humans during close contact. Four of the seven clinical cases in humans were fatal.

As stated in the RMP document, “A vaccine for Hendra virus has been available in Australia since 2012. It has subsequently proven highly effective in protecting against natural challenge. There are no reports of any vaccinated horse becoming infected with Hendra virus. Further, experimental studies whereby vaccinated horses were exposed to massive amounts of the virus did not become infected. There has been an accumulation of strong scientific evidence demonstrating the efficacy of the vaccine which means that a vaccination option can now be included as a viable risk management option for trans-Tasman trade.”

The geographical range and risk period where Hendra cases have been confirmed has grown but is known and well identified. One study did demonstrate an association with the dry season, May to October, with lower temperatures and rainfall (McFarlane et al. 2011). A more recent study (Martin et al. 2018) analysed risk based on latitude. It concluded there are 2 distinct regions:

- above latitude -22° (approximately in-line with Claireview, 220km north of Rockhampton), spill-over is not affected by seasons
- below latitude -22°, spill-over risk increases from April to October.

New Zealand horse owners and veterinarians have a low awareness of Hendra clinical signs and no personal protective measures of the nature required to protect against human infection from shedding horses is utilised. In addition testing for the disease agent in not able to be completed in New Zealand.

*Diagnosis and testing.*

Stringent precautions should be used when collecting and shipping any diagnostic samples from live or dead animals. Only those samples that can be collected safely should be taken. A description of the limited necropsy procedure used to collect diagnostic samples, as well as necropsy and sample collection recommendations, can be found on the Web sites maintained by some states in Australia (see Internet Resources).

As Hendra virus is a dangerous zoonotic pathogen with a high case fatality rate and for which there is no human vaccination or effective antiviral treatment, stringent precautions should be taken when collecting and shipping

any diagnostic samples from live or dead animals. Likewise, all laboratory manipulations with live viral cultures (including serological tests such as Virus neutralisation test (VNT) using live virus) or potentially infected / contaminated material such as tissue and blood samples must be performed at an appropriate biosafety and containment level determined by biorisk analysis (OIE, 2018e).

Sampling a variety of sites increases the probability of detecting Hendra virus. A combination of blood and nasal, oral and rectal swabs for PCR and / or virus isolation, and serum for serology, can detect a high proportion of infections in live horses. Other samples that may be taken include urine, conjunctival swabs and swabs of other orifices (vaginal, urethral). Similar swab samples have been recommended for dead horses.

The OIE Terrestrial Manual (OIE, 2018e) lists a number of diagnostic techniques including virus isolation and characterisation, molecular methods based on detection of viral nucleic acid (e.g. RT-PCR and immunochemistry) and serological tests (e.g. ELISA, VNT). Currently, none of these tests have been approved or ar available to MPI's AHL, presumably because it is believed that the risk of disease is mitigated by the IHS. The Australian Animal Health Laboratory (AAHL) functions as the reference laboratory for testing. The diagnostic tests will not be discussed here.

*Investigations and rule-outs in New Zealand.*

Horses undergoing pre-export testing have tested positive for Hendra virus on ELISA testing. Paired blood samples submitted to the AAHL were confirmed as negative. The test results were considered to have been false positives. (Anonymous, 2000a; Bingham, 2006).

One rule-out of a foal dying suddenly was reported in Surveillance magazine (Anonymous, 2000b).

5.3.2 Proposed changes to the IHS

The RMP document notes that "Significantly less horses are exported from Brisbane than Sydney and Melbourne to New Zealand. No horse intended for export to any country or jurisdiction has ever been infected with Hendra virus. From January 2006 to July 2018, a total of 11,551 horses travelled from Australia to New Zealand with no evidence of Hendra virus infection."

The requirements for Hendra and Nipah virus have been combined in the proposed new IHS. For horses exported from Australia, the requirement is that the horses have been kept since birth or for at least the 90 days prior to export in premises where no case of infection in animals or humans has been reported during that period. An additional option stipulates that horses must be correctly vaccinated, between 14 and 365 days prior to export.

5.3.3 Comments and observations

Evidence suggests that the number of trans-Tasman horse movements is increasing (Table 2 and Figure 1). Although no data are readily available for the numbers originating from Hendra-affected areas, the numbers are likely to be rising, too.

Given the incubation period may be as long as 30 days, it is possible that infected horses but showing no clinical signs from Hendra-affected areas that are still incubating the disease enter New Zealand. NZEHA has not attempted to quantify this risk and it may be low but such an event could result in human fatalities.

*Recommendations*

As for CEM, the requirements in the draft IHS are much more clearly presented. Combining Hendra and Nipah virus requirements is appropriate given the rarity and limited geographic distribution of these diseases.

However, given that the size of the Hendra affected area has been steadily increasing the likelihood of horses from Hendra-affected areas being imported into New Zealand in future is likely to increase. Bearing in mind the

zoonotic risk and resulting health and safety issues, and possible adverse media attention that would result from a potential case occurring in New Zealand, in combination with the availability with a safe and effective vaccine, we would recommend that the draft proposal is amended such that horses in the 30 days prior to export that have resided or transited any geographical region in Australia in which the disease has occurred that vaccination for Hendra virus is required.
The latest information of the efficacy of the vaccine suggests that either two initial doses 21 days apart, or in previously vaccinated horses, a single booster dose in the previous 12 months should be sufficient evidence of vaccination.

### 5.4 Equine Influenza

The IHS states that the equids must meet the recommendations of the Code chapter for infection with influenza virus. The code chapter states: "For additional security, countries that are free of EI or undertaking an eradication programme may also request that the domestic equids were tested negative for EIV by an agent identification test for EI described in the Terrestrial Manual conducted on samples collected on two occasions at 7 to 14 days and less than 5 days before shipment."

The OIE terrestrial manual however describes four tests for agent identification; however only one is a recommended method for testing for individual animal freedom from infection prior to movement. All four appear to be options for use despite their reduced specificity and sensitivity.
MPI-STD-TVTL standard lists two tests however only one is capable of agent identification.

*Recommendations*

That 2.12 of the IHS be reworded to specify that only the OIE code recommended method being the Real-time RT- PCR test be used for agent identification testing for EI or make reference to MPI-STD-TVTL.
Either remove the Haemagglutination Inhibition test from the list of tests in MPI-STD-TVTL that may be used for EI or make it clear that it cannot be used for agent identification.

### 5.5 Equine Piroplasmosis

#### 5.5.1 General information of relevance for the IHS

Competent tick vectors of piroplasmosis
Investigations and resulting positive detections of exotic ticks in New Zealand as reported in MPI Annual Surveillance reports suggest that pre and post-export inspections for ticks and acaricide treatments are not entirely effective at managing the risk of exotic tick introduction. New Zealand has no active surveillance programme for exotic ticks but the geographic spread of endemic ticks throughout New Zealand has increased and spread of tick species into new habitats world wide is commonly reported in the literature.
The Risk Management Proposal discusses that the only tick species that commonly occurs in livestock in New Zealand is Haemaphysalis longicornis and no Haemophysalis species is known to act as a vector to Theileria Equi or Babesia caballi. The authors of this submission are unaware of any specific transmission studies that support this statement. The lack of evidence of Haemaphysalis species acting as a vector for Piroplasmosis may equally well be as a result of the absence of the vector and disease agent co-habitating in the same geographical area. Haemophysalis longicornus historically was a tick indigenous to Eastern Asia, a region with historically low equine populations. In recent years Haemaphysalis and a wide range of other tick species have increased their geographical range dramatically. Haemophysalis is a successful vector to Theileria species in New Zealand and is resulting in ongoing substantial animal health compromise and production related costs.
In addition the Iatrogenic spread of virus from a single case of introduced piroplasmosis remains a moderate likelihood event due to the large aggregations of horses in training establishments through New Zealand.
The 2000 Import risk analysis describes two incidences where new introductions of piroplasmosis to countries previously free of piroplasmosis spread iatrogenically. This mechanism of spread was also a feature in the 2009

outbreak in the US where of the 262 positive horses identified (most of which were quarter horse racehorses), none showed evidence of tick-borne transmission. The racehorses, specifically, were infected by iatrogenic transmission.

Impact of Introduction
The risk management proposal states; a single imported case of equine piroplasmosis would have minimal direct consequences. A limited investigation to demonstrate that transmission had not occurred would probably be required. If absence of transmission were demonstrated, control measures would concern only the infected equid.

New Zealand is free of piroplasmosis and New Zealand's key equine trade partner is free (Australia) while others have control programmes that would preclude the return of a piroplasmosis animal. For New Zealand the only realistic options to regain freedom would be limited to euthanasia or long term quarantine. Imported horses are often high value animals and euthanasia options are fraught with difficulty. Establishing and maintaining quarantine is a long term challenging and expensive option. In addition, some infections can establish and remain undetected such as the T.equi outbreak on a Texas ranch where natural tick-borne transmission was determined to have occurred for at least 20 years.
The NZEHA thus asserts that the impact of a single imported infected animal could be substantial and seeks to argue for more specific wording regarding which of the OIE described diagnostic tests must be undertaken.

Diagnosis and Testing

Although the OIE Terrestrial Code recommends the comparative enzyme linked immunosorbant assay(cELIZA) and the polymerase chain reaction(PCR) for the purposes of verifying freedom from equine piroplasmosis infection in individual animals the OIE code and manual currently still describe the indirect antibody test (IFAT) and the "Complement fixation test(CFT) as being widely used in some regions to qualify horses for importation". This readers interpretation of the code is that the current wording does not preclude the ongoing use of CFT for the purpose of importation despite noting that "factors severely limit its application". Also the code lists the IFAT as suitable but not the recommended method.

MPI-STD-TVTL currently lists the ELISA, IFAT and the CFT as available diagnostic tests for equine piroplasmosis

5.5.2 Proposed changes to the IHS

Recognition of Country freedom

The Import Health standard states

(1) Equids must be kept, since birth or for at least the 30 days prior to export, in a country recognised by MPI as free from equine piroplasmosis, that does not import seropositive equids, and where no case of equine piroplasmosis has been reported in the 2 years prior to export; or

(2) Equids must meet the recommendations in the Code chapter for Equine piroplasmosis and the ectoparasite requirements of this IHS.

The most recent scientific review (2013) of Equine Piroplasmosis states that the numerous publications on the distribution of infection should interpreted with caution because of the previous use of the complement fixation test and that abundant data shows the CFT to lack sensitivity in detecting persistent infection. It is not clear in the consultation documents available, the basis on which MPI will recognize country freedom for Equine Piroplasmosis. The guidance document includes summary information on approved countries but doesn't discuss their disease status with respect to piroplasmosis. The safeguard of ensuring a third country does not import seropositive equids is fragile if the country in question allows the use of the CFT. Requiring no case reports of equine piroplasmosis in the previous 2 years offers minimal protection given the "silent" re-emergence of infection world-wide.

5.5.3 Comments and observations

The discussion in the Risk Management Proposal implies spread and establishment of piroplasmosis in New Zealand is a low likelihood low impact event. The NZEHA suggests that this may not necessarily be the case and raises the following points in support of an alternative view.

*Recommendations*

Delete 2.20 (1) or be specific as to the requirements to be met for MPI to recognise the country as Equine piroplasmosis free.

Reword 2.20(3) to state;
Equids must meet the recommendations in the Code chapter for Equine piroplasmosis utilising only the cELIZA or the PCR diagnostic test options given and meet the ectoparasite requirements of this IHS.

Remove the CF test from MPI-STD-TVTL.

**6. Proposed additional organism for inclusion into the standard - discussion.**

*Streptococcus equi*

Global Status and epidemiology

World wide there are over 190 strains of *Streptococcus equi* subspecies *equi* (*S. equi*). It is endemic in all countries and all equine industries struggle with cyclical outbreaks of infection. New Zealand has only two strains of *S Equi*. Herd immunity to *S equi* is strain specific, thus importation of a new strain exacerbates the local epidemiology and leads to a more entrenched disease. Also vaccines are strain specific so unless the vaccine includes all circulating and introduced strains, vaccinated horses have no immunity against introduced new strains thus undermining commitment to control strategies employed by properties and as advocated by veterinarians and NZEHA.

The disease caused by *S Equi* is called strangles.
Strangles is a notifiable disease in most of New Zealand key equine trading partner countries as it is a highly contagious disease of the upper respiratory tract.
Outbreaks of strangles may occur when different groups of horses mix together (e.g. after the introduction of a new horse(s) onto a population). It is usually more common in younger horses; however, horses of any age can become infected.

Clinical signs of strangles (usually seen within three to eight days of a horse being exposed) can include:

- the rapid onset of pyrexia (high temperature); 39.5 to 41.5oC)
- a loss of appetite
- yellowish discharge from the nostrils
- enlarged glands in the head and neck, that often form abscesses
- coughing, and
- difficulty swallowing (hence the term ‘strangles’).

Clinical signs can last for days to months. Abscesses usually rupture and drain within two weeks. When abscesses burst, thick yellow pus is discharged, and recovery is generally without incident.

Transmission

The incubation period of the disease is usually about one week, but may be up to three weeks.
Transmission occurs through both oral and nasal routes. It can occur via direct contact between individual horses and/or through indirect contact. Contaminated feed, water, bedding, stables, stable utensils and transport

vehicles are important in the spread of infection. Good biosecurity is essential to prevent the spread of strangles between horses.

*S. equi* can survive for long periods in the environment, surviving in purulent discharges (pus) for months and in nasal discharges for several weeks.
Bacterial shedding usually ends rapidly after clinical recovery and can be confirmed by negative culture of nasopharyngeal swabs (swabs from the back of the throat). However, shedding may be intermittent and some horses become long-term carriers. Therefore, before any convalescent horse (or any in-contact horse) can be considered likely to be free of infection, a series of negative swabs is required.
Confirmation of a strangles diagnosis is by taking a swab from the back of the nasal cavity. Definitive diagnosis is based on PCR testing and often culture of *S. equi*. Culture may fail to isolate *S. equi* if antibiotic treatment has already commenced, the bacteria are present in low numbers or overgrown by other species. PCR testing is more rapid and generally superior in terms of sensitivity in these instances.
A rapid serological test is readily available in most countries. A series of two blood samples (serum) can screen for antibodies, indicating recent infection or exposure to *S. equi*. Samples should be spaced 14 days apart to allow for detection of antibodies arising from recent infection.
Affected horses should be isolated for six to eight weeks to prevent spread to other horses.

Controlling the spread of strangles

The spread of infection can be controlled through the isolation of infected horses until they are free from infection. Spread can be limited by the early detection of shedders amongst newly-affected (and in-contact) horses by taking three nasopharyngeal swabs over a two-week period and culturing the swabs for *S. equi*. Three negative swabs provide strong evidence of freedom from infection in most cases.
All infected (and in-contact) horses should be placed under veterinary supervision in strict isolation with the highest possible biosecurity. When strict isolation fails to prevent the spread of infection, this is usually due to a breakdown in biosecurity. Horses should not enter an affected property unless they are vaccinated and can be kept in strict isolation from all sources of infection.
No infected or in-contact animal should be released from isolation until three consecutive negative swabs have been taken over a two-week period. If animals are found to be infected with *S. equi* for more than two months, an investigation should be conducted by a veterinary practitioner to identify and treat the site of the infection (e.g. the guttural pouch).

Strain specific vaccination against strangles provides good protection to horses. However, vaccination alone is not considered an absolute preventative due to differences between individual horses, the time since vaccination, and the level of challenge to immunity.

New Zealand Equine Health Association and its constituent bodies currently supports a voluntary code of practice for strangles but it is not a notifiable disease and compliance is variable.

Exports of horses from New Zealand continue to be problematic due to strangles requirements already being required by the countries New Zealand exports to.

Proposed measures:

Infected horses can become shedders for up to 6 months post infection so the inclusion of a declaration that the horse being exported has been free from signs of infection with strangles and no outbreaks have occurred on the property of origin in the previous 6 months is sought. If this cannot be attested to a pre-export PCR test of guttural pouch washings could be offered as an alternative measure.
Currently horses in post arrival quarantine (PAQ) are swabbed and tested for EI using a PCR. As a further measure to prevent spread of a potentially new strain into the local population NZEHA seek to initiate a local discussion on the possibility of the PAQ including in its SOP a requirement to collect a concurrent nasopharyngeal swab to enable a PCR for *S Equi* to be undertaken. If the sample is positive the NZEHA support that the animal may be still be given it a Biosecurity Clearance if it has met all other biosecurity requirements but

arrangements could be made for it to complete further isolation on its property of destination under supervision of NZEHA.

## 7. References

Anonymous. Equine infectious anaemia. Surveillance 23, 6–7, 1996 Anonymous. Suspected exotic disease investigations. Surveillance 27, 14–15, 2000a

Anonymous. Suspected exotic disease investigations. Surveillance 27, 22–33, 2000b

Anonymous. International animal trade. Surveillance 41, 9–13, 2014. URL http://www.sciquest.org.nz/elibrary/download/102418/International%2Banimal%2Btrade

Anonymous. Hendra Virus Infection. Retrieved from http://www.cfsph.iastate.edu/ Factsheets/pdfs/hendra.pdf, 2015a. Published by the Center for Food Security and Public Health. Accessed 2019-01-02

Anonymous. International animal trade. Surveillance 42, 5–9, 2015b. URL http://www.sciquest.org.nz/elibrary/download/111092/International%2Banimal%2Btrade

Anzai T, Wada R, Okuda T, Aoki T. Evaluation of the field application of PCR in the eradication of contagious equine metritis from Japan. Journal of Veterinary Medical Science 64, 999–1002, 2002

APHIS. Contagious Equine Metritis. Retrieved from https://www.aphis.usda.gov/ publications/animal_health/content/printable_version/fs_CEMrev09.pdf, 2014. Factsheet published by USDA-APHIS. Accessed 2019-01-16

Bingham P. Quarterly report of investigations of suspected exotic diseases. Surveillance 33, 11– 14, 2006. URL http://www.sciquest.org.nz/elibrary/download/47460/Quarterly_report_of_investigations_of_suspected_ex.pdf?#search=%22hendra%22%22

Bingham P. Quarterly report of investigations of suspected exotic diseases. Surveillance 40, 14– 19, 2013. URL http://www.sciquest.org.nz/elibrary/download/86315/Quarterly%2Breport%2Bof%2Binvestigations%2Bof%2Bsuspected%2Bexotic%2Bdiseases

Bingham P. Quarterly report of investigations of suspected exotic diseases. Surveillance 43, 19– 24, 2016. URL http://www.sciquest.org.nz/elibrary/download/115606/Quarterly%2Breport%2Bof%2Binvestigations%2Bof%2Bsuspected%2Bexotic%2Bdiseases

Léon A, Despois L, Castagnet S, Versmisse Y, Gracieux P, Blanchard B. Validation of an easy handling sample preparation and a triplex real-time polymerase chain reaction for rapid detection of contagious equine metritis organisms. Journal of Equine Veterinary Science 39, S12, 2016. doi:https://doi.org/10.1016/j.jevs.2016.02.025. URL http:// www.sciencedirect.com/science/article/pii/S0737080616000563. 10th International Equine Infectious Diseases Conference

MAF. Import risk analysis: horses and horse semen. Retrieved from https://www.mpi.govt. nz/dmsdocument/2845/direct, 2000. Document published by the Biosecurity Authority of the Ministry of Agriculture and Forestry (MAF). Accessed 2018-12-18

MPI. Approved Diagnostic Tests, Vaccines, Treatments, and Post-Arrival Testing Laboratories for Animal Import Health Standards. Retrieved from https://www.mpi.govt.nz/dmsdocument/ 2040/send, 2018a. Published by Ministry for Primary Industries (MPI). Accessed 2018-12-18

MPI. Guidance Document: Equids. 2018b. Draft document published by Ministry for Primary Industries (MPI). Accessed 2018-12-18

MPI. Import Health Standard: Equids. 2018c. Draft document published by Ministry for Primary Industries (MPI). Accessed 2018-12-18

MPI. Risk Management Proposal: Equids. 2018d. Draft document published by Ministry for Primary Industries (MPI). Accessed 2018-12-18

MPI. Zealand. Absence of Specified Animal Diseases from New Zealand https://www.mpi.govt.nz/dmsdocument/ 10466-statement-absence-of-specified-diseases-from-new-zealand, 2019. Published by Ministry for Primary Industries (MPI). Accessed 2019-01-18

OIE. Terrestrial Animal Health Code, chapter 12.2 Contagious Equine Metritis, 1–2. World Organisation for Animal Health (OIE), 2018a. URL http://www.oie.int/fileadmin/Home/eng/Health_standards/tahc/current/chapitre_cem.pdf

OIE. Terrestrial Animal Health Code, chapter 12.5 Equine Infectious Anaemia, 1–2. World Organisation for Animal Health (OIE), 2018b. URL http://www.oie.int/fileadmin/Home/eng/Health_standards/tahc/current/chapitre_eia.pdf

OIE. Terrestrial Manual, chapter 2.5.2 Contagious Equine Metritis, 1–7. World Organisation for Animal Health (OIE), 2018c. URL http://www.oie.int/fileadmin/Home/eng/Health_standards/tahm/2.05.02_CEM.pdf

OIE. Terrestrial Manual, chapter 2.5.6 Equine Infectious Anaemia, 1–6. World Organisation for Animal Health (OIE), 2018d. URL http://www.oie.int/fileadmin/Home/eng/Health_standards/tahm/2.05.06_EIA.pdf

OIE. Terrestrial Manual, chapter 2.1.14 Nipah and Hendra Virus Diseases, 1–18. World Organisation for Animal Health (OIE), 2018e. URL http://www.oie.int/fileadmin/Home/eng/Health_standards/tahm/2.01.14_NIPAH_HENDRA.pdf

Scicluna M, Nardini R, Frontoso R, Ricci I, Issel C, Autorino G. Evaluation of the diagnostic performance of equine infectious anaemia (EIA) serological ELISAs as screening tools in control programmes. Journal of Equine Veterinary Science 39, S19, 2016. doi:https://doi.org/10. 1016/j.jevs.2016.02.039. URL http://www.sciencedirect.com/science/article/pii/ S0737080616000708. 10th International Equine Infectious Diseases Conference

Snider T. Reproductive Disorders in Horses. Veterinary Clinics of North America Equine 31, 389–405, 2015. doi:http://dx.doi.org/10.1016/j.cveq.2015.04.011

Spickler AR. Equine Infectious Anemia. Retrieved from http://www.cfsph.iastate.edu/ Factsheets/pdfs/equine_infectious_anemia.pdf, 2009. Published by the Center for Food Security and Public Health. Accessed 2019-01-02

Spickler AR. Contagious Equine Metritis. Retrieved from http://www.cfsph.iastate.edu/ Factsheets/pdfs/contagious_equine_metritis.pdf, 2015. Published by the Center for Food Security and Public Health. Accessed 2019-01-02

Tana T, Chamberlain G. Notifiable organisms list revised. Surveillance 44, 5–9, 2017. URL http://www.sciquest.org.nz/elibrary/download/129211/Notifiable%2Borganisms%2Blist%2Brevised

Timoney P, Kristula M, Ford E, Short M, Flynn K, Broaddus C, Tamassia M, Donahue J, Meade B. Contagious Equine Metritis: Efficacy of US post-entry testing protocols for identifying carrier stallions and mares. Journal of Equine Veterinary Science 39, S60, 2016. doi:https://doi.org/10.1016/j.jevs.2016.02.130. URL

http://www.sciencedirect. com/science/article/pii/S0737080616001611. 10th International Equine Infectious Diseases Conference

Multistate Infestation with the Exotic Disease–Vector Tick *Haemaphysalis longicornis* — United States, August 2017–September 2018
*Weekly* / November 30, 2018 / 67(47);1310–1313 https://www.cdc.gov/mmwr/volumes/67/wr/mm6747a3.htm

http://veterinarynews.dvm360.com/equine-piroplasmosis-what-how-and-why

L.N. Wise, L.S. Kappmeyer, R.H. Mealey, and D.P. Knowles. Review of Equine Piroplasmosis. Review, J Vet Intern Med 2013;27:1334–1346 accessed https://onlinelibrary.wiley.com/doi/pdf/10.1111/jvim.12168 on 02012019

McFadden AMJ, Rawdon TG, Bingham P, Mackereth GM, Stanislawek WL, Cork SC, Clough R, King C Managing the risk of equine influenza in horses imported from Australia during the 2007 Australian epidemic. Surveillance, Volume 34, Issue 4, pp 4-8, Jan 2007

Playford, M and A McFadden (2015) Treatment and impact of *oriental theileriosis*. Vetscript 28(8) 25-29

https://thehorse.com/15467/eia-detected-in-australia/

http://lrd.spc.int/ext/Disease_Manual_Final/b205__equine_infectious_anaemia.html

https://www.health.qld.gov.au/cdcg/index/hendra#ip

https://www.business.qld.gov.au/industries/service-industries-professionals/service-industries/veterinary-surgeons/guidelines-hendra/risk-factors