



**FÉDÉRATION
ÉQUESTRE
INTERNATIONALE**

**Report into outbreak of
Neurological Equine Herpes
Virus (EHV-1) in Mainland
Europe February 2021**

**Part 2:
Return To Competition &
amendments to FEI Regulations**

Lausanne (SUI), April 2022

TABLE OF CONTENTS

1: INTRODUCTION	2
2: SUMMARY	2
3: TIMELINE OF RETURN TO COMPETITION (RTC)	4
4: FEI VETERINARY EPIDEMIOLOGY WORKING GROUP REPORTS	11
5: BREACHES OF PROTOCOLS	22
6: ADDITIONAL MEASURES IMPLEMENTED AFTER END OF RETURN TO COMPETITION PERIOD (12 April-30 May 2021)	22
7: CONCLUSIONS	24
8: ANNEXES TO EHV-1 REPORT PART 2	30
ANNEX 1 - FEI Updates on Return To Competition (multiple texts)	
ANNEX 2 - Measures for Restart of Competition in Mainland Europe on 12 April 2021_30 March 2021	
ANNEX 3 - List of Approved Laboratories for PCR sample analysis	
ANNEX 4 - FEI Pre-Event Biosecurity Checklist for Official Veterinarians	
ANNEX 5 - Horse Arrival Procedure	
ANNEX 6 - FEI Equine Health Self-Certification Form & FEI Temperature Monitoring Chart	
ANNEX 7 - List of FEI 2021 Events requiring negative EHV-1 PCR Tests	
ANNEX 8 - EHV-1 Return To Competition Athlete Information Seminar (IJRC/IDRC), 9 April 2021	
ANNEX 9 - FEI post-EHV-1 Return To Competition By-Laws - 9 April 2021	
ANNEX 10 - EHV-1 Return to Competition Factsheet for Athletes & Grooms (various languages)	
ANNEX 11 - FEI Biosecurity Toolkit for Equine Events (Dr Katie Flynn, California Department of Food & Agriculture)	
ANNEX 12 - Master-By-Laws_Measures for Return to Competition in mainland Europe_12 April 2021-updated 21 April 2021	
ANNEX 13 - Sample Stable Plan_March 2021	
ANNEX 14 - Sample Athlete communique - Negative PCR Test for EHV-1 Required for your Upcoming Event – 26 April 2021	

1: INTRODUCTION

Part 2 of the Report into the 2021 outbreak of the neurological form of Equine Herpes Virus (EHV-1) in mainland Europe covers the measures implemented that allowed a safe return to competition following the six-week FEI-imposed lockdown on international sport in Continental Europe.

The lockdown was put in place to reduce equine travel across the European continent in order to minimise transmission of EHV-1, which had directly resulted in the deaths of 18 horses and confirmed related cases in 10 countries.

The equestrian world showed its true community spirit during the outbreak, which started in Spain in February 2021, with multiple European National Federations also cancelling their national calendar of events and breeding activities in line with the FEI shutdown.

This section of the Report (Part 2) focuses on the EHV-1 By-Laws and sanctioning system, and evaluates their effectiveness, plus the elements that were subsequently incorporated into the FEI Veterinary Regulations 2022 approved at the FEI Hybrid General Assembly in November 2021.

There are a number of recommendations in the Conclusions section of this Report. These recommendations need, of course, to be further discussed with the FEI Headquarters and/or the FEI Board for any eventual Rules changes to go through the normal rules revision process.

Part 1 of the [Report](#), which provides a comprehensive and factual picture of the outbreak, including the series of events, causes, roles and responsibilities, and analysis, was published on 28 February 2021.

Part 3 of the Report, elements of which will be presented at the FEI Sports Forum (25-26 April 2022), will incorporate further risk mitigation of EHV-1, including conclusions from the scientific EHV-1 vaccination review commissioned by the FEI, and the suggested way forward. This concluding section of the Report, with the Sports Forum presentations incorporated as Annexes, will then be published as Part 3 in May 2022.

2: SUMMARY

Once the outbreak had been brought under control, it was crucial that the return to international competition was carefully managed through the implementation of stringent measures designed to prevent a further spread of the 2021 outbreak.

The FEI Veterinary Epidemiology Working Group (see page 11 for composition), a group of world-leading experts in equine disease, worked very closely with FEI Headquarters on the drafting of the Return to Competition (RTC) measures. Individual members of the Group had been working with the FEI since the start of the outbreak and the Group met regularly throughout, and still meets on an ad-hoc basis.

The FEI also consulted other experts on specific areas of concern such as stabling and flow of horses and humans through stables and on venues, and Examination on Arrival at FEI Events. The highly-experienced international stable manager Patrick Borg (FRA) played an invaluable role in this process, alongside FEI Veterinary Committee Chair Jenny Hall (GBR).

Patrick Borg has been stable manager at multiple elite international equestrian events, including the Tokyo 2020 Olympic and Paralympic Games. Jenny Hall, as well as being a member of the

FEI Veterinary Epidemiology Working Group, also has extensive racing and international horse sport experience, both as a regulator, Veterinary Services Manager and team veterinarian.

In order for the measures to be successful, it was vital that there was community-wide acceptance of the measures and the FEI put in place extensive stakeholder consultation prior to finalisation of the protocols.

Also central to the functionality of the measures was the introduction of improved modules to the FEI HorseApp, designed specifically for RTC and central elements of the By-Laws, such as enhanced Examination on Arrival and the new horse checkout system.

Another element fundamental to the success of the measures was a sanctions system to enforce compliance. Importantly, these were drafted jointly by the FEI Legal, Veterinary and IT Departments. The FEI Veterinary Committee provided invaluable feedback during the drafting process of both the RTC By-Laws and the complementary sanctioning system, which were then approved by the FEI Board prior to implementation.

The protocols, which clearly outlined roles and responsibilities, focused on six key areas:

- Pre-event venue preparation by Organisers;
- Athlete pre-event preparation;
- Examination on Arrival;
- Onsite at Event Venue;
- Departure from Events;
- Jurisdiction.

The measures were published on 30 March 2021, two weeks' prior to the re-opening of the FEI Calendar in mainland Europe on 12 April 2021, and remained in place until 30 May 2021. They included a series of temporary provisions that were formalised by the introduction of legally binding By-Laws published on 9 April 2021. These By-Laws were applicable in 37 countries in mainland Europe and also covered all horses entering Europe from other continents during the enforcement period.

Although a number of the measures were already incorporated into the FEI Veterinary Regulations, and many of them had been for some time, there was clearly a need to strengthen the FEI biosecurity rules worldwide, and this required an in-depth review and revision of FEI Regulations.

Central to this process was the necessity to prevent and manage outbreaks and to better control compliance. As a result, the FEI Veterinary, Legal and IT Departments drafted proposed amendments to the biosecurity elements of the FEI Veterinary Regulations that would provide protection against many diseases, not just EHV, as well as protect horses against deliberate or inadvertent contamination with substances that could then result in a positive EADCM case.

The High Health status of FEI horses that allows free international movement also needed to be safeguarded. The amended FEI Veterinary Regulations had to ensure that this privileged status was in no way jeopardised, as non-compliance could result in external regulations being put in place by international or national legislative bodies.

The proposed revisions to the FEI Veterinary Regulations also included further IT related elements. The increased versatility of the FEI HorseApp would ultimately allow for horses' whereabouts to be traceable at all times, supporting the Piroplasmiasis and Contagious Equine Metritis (CEM) import requirements already imposed in some countries.

The IT input also incorporated digitalisation of equine passports, health certificates and customs documents, plus management of High Health, High Performance (HHP) status and of Equine Disease-Free Zones (EDFZ).

As with all proposed rules revisions, the draft FEI Veterinary Regulations were sent to National Federations for feedback. There was also a further rules consultation session at the FEI Hybrid General Assembly in November 2021, prior to a vote the following day, in which the National Federations approved all modifications to the FEI Veterinary Regulations.

The updated FEI Veterinary Regulations, including the amended biosecurity rules, were implemented on 1 January 2022. At that point, sanctions for breaches of the biosecurity provisions only applied in mainland Europe, with global implementation of sanctions on 1 July 2022.

3: TIMELINE OF RETURN TO COMPETITION (RTC)

24 March 2021

Stakeholder consultation on FEI post-EHV-1 Return To Competition protocols

The FEI hosted a two-hour online stakeholder consultation session on 24 March 2021 to review comprehensive draft FEI Post-EHV-1 Return To Competition protocols. (See Annex 1, 24 March 2021 entry for more detailed information.)

The measures were aimed at, in the short term, minimising the risks associated with the restart of FEI competitions in mainland Europe on 12 April 2021 and, in the long term, increasing biosecurity knowledge, skills and awareness among all FEI stakeholders in order to prevent a recurrence of the devastating EHV-1 outbreak.

Areas covered in the draft requirements included:

- Biosecurity plans and mitigation plans for outbreaks of infectious disease for all FEI Events;
- Mandatory advance PCR testing (for designated events only) and temperature monitoring;
- Enhanced Examination on Arrival external to the event stabling area for all horses;
- Athlete self-certification for the health status of their horses;
- Stabling (including isolation stables and restrictions on access);
- Minimising nose-to-nose contact between horses;
- Control of dogs;
- The importance of basic hygiene.

Following valuable input from this stakeholder session, at which the proposed protocols received broad consensus, plus feedback from the FEI Veterinary Committee and the FEI Veterinary Epidemiology Working Group, final revisions were made to the document. The measures were then presented to the FEI Board for approval and were published on 9 April 2021 prior to implementation in mainland Europe on 12 April 2021.

30 March 2021

FEI publishes Return To Competition measures for mainland Europe

The FEI published the Return To Competition measures (see Annex 2) that would allow a safe resumption of international sport in mainland Europe on 12 April following the six-week shutdown to control the spread of the virus.

The measures focused on six key areas: Pre-event venue preparation by Organisers; Athlete pre-event preparation; Examination on Arrival; Onsite at Event Venue; Departure from Events; and Jurisdiction.

These six areas covered biosecurity and mitigation plans for outbreaks of infectious disease for all FEI Events; mandatory advance PCR testing (for certain designated events only) and temperature monitoring; enhanced Examination on Arrival external to the event stabling area for all horses; athlete self-certification for the health status of their horses; stabling (including isolation stables and restrictions on access); minimising nose-to-nose contact between horses; control of dogs; and the importance of basic hygiene. (See Annex 1, 30 March entry for full details of the requirements.)

The measures included a series of temporary provisions, which remained in place until 30 May 2021, providing a science-based safety margin to allow for monitoring of any further related outbreaks. The community was advised that the date of 30 May could be extended if required. The temporary provisions were to be formalised in legally binding By-Laws scheduled for publication during the week commencing 5 April 2021.

Epidemiology Working Group: The FEI Veterinary Epidemiology Working Group agreed that there was no evidence indicating that it would be unsafe to return to international competition in mainland Europe as planned on 12 April 2021, provided the mandated enhanced preventive measures were implemented and there are no further linked outbreaks. The Group continued to monitor the evolution of the European outbreak on a daily basis.

FEI HorseApp: The FEI HorseApp was updated with new modules allowing for enhanced traceability as part of the RTC measures. These were launched in the second week of April 2021.

7 April 2021

List of Approved Laboratories for EHV-1 PCR testing: The FEI published a list of Approved Laboratories that could be used for PCR testing for EHV-1 (see Annex 3), and also the FEI Pre-Event Biosecurity Checklist for Official Veterinarians (see Annex 4) that would be used by Official Veterinarians appointed to go to designated venues (those stabling more than 400 horses) one week in advance of their event.

Also published were the Horse Arrival procedure (see Annex 5), the FEI Equine Health Self-Certification form together with the FEI Temperature Monitoring Chart (see Annex 6), and a list of FEI 2021 Events in mainland Europe that could have more than 400 horses and therefore require negative EHV-1 PCR Tests between 12 April and 30 May 2021 (see Annex 7) while the temporary measures were in force.

8 April 2021

Online meetings: The FEI Veterinary and Jumping Directors initiated a series of remote meetings with Organisers of Jumping events with more than 400 horses that were scheduled to take place during the seven-week period when the RTC measures were in force.

There were also separate meetings with Peter Bollen (BEL), President of the Equestrian Organisers (formerly the International Equestrian Organisers Association - IEOA) and Frank Kemperman, at that point FEI Executive Board Member and Chair of the FEI Dressage Committee, who has extensive hands-on experience from his time as show director of the Aachen CHIO and Chair of the Managing Board.

9 April 2021

FEI Board approves Return To Competition By-Laws: The FEI Board approved legally binding By-Laws (see Annex 9) for the RTC measures that had been published on 30 March 2021. The By-Laws were due to come into force on 12 April 2021 and remain in effect until 30 May 2021, unless an extension to the period was required.

The By-Laws formalised the temporary provisions in the measures that were not covered by either the FEI Veterinary Regulations or the FEI General Regulations.

The By-Laws were applicable in 37 countries in mainland Europe and covered Events in four FEI disciplines – Jumping, Dressage, Eventing and Endurance – as these were the only disciplines scheduled for the period covered by the RTC measures.

Timeline change for mandatory PCR testing: Following discussions with the FEI Veterinary Epidemiology Working Group and feedback from athletes, there was an important amendment made to the measures regarding the mandatory requirement for a negative PCR test for EHV-1 at events with more than 400 horses and overnight stabling, and for all horses prior to being transported by plane to an FEI event.

The original text, as published on 30 March, required that the sample should be taken no earlier than **96 hours** before arrival at the event, but this was amended to **120 hours** due to concerns about the turnaround time for getting test results back from laboratories.

EHV-1 Return To Competition Athlete Information Seminar – The FEI hosted an athlete information seminar for athletes entered in FEI events during the first two weeks following the return to competition on 12 April, and the 66 National Federations that those athletes represented. Athletes were asked to invite their grooms to attend. The FEI Athlete Representatives, plus the International Jumping Riders Club (IJRC) and the International Dressage Riders Club (IDRC) were also invited (see Annex 8).

Sessions with Veterinarians & Organisers: The FEI scheduled training sessions for Veterinarians and initiated a series of meetings with Organisers to guide them through their obligations under the RTC measures.

12 April 2021

Return to Competition Factsheet: A Return To Competition Factsheet for Athletes and Grooms was published in the RTC section of the dedicated EHV-1 hub (see Annex 10) The Factsheet was made available in English, Dutch, French, German, Italian, Portuguese and Spanish.

FEI HorseApp modules: Four new modules were added to the FEI HorseApp to monitor and facilitate the mandatory requirements in the RTC measures. (See [FEI Press Release](#), 12 April 2021.)

Additional support for FEI IT Department

Implementation and monitoring of the RTC measures resulted in (and continues to result in) a huge additional workload for the FEI IT Department. The FEI reassigned FEI HQ staff to assist with the processing and checking of PCR test results and to provide support to users of the FEI HorseApp.

Guidelines & Tutorials: Detailed guidelines and video tutorials for all the different stakeholder groups (Athletes, Organising Committees, Officials, Grooms, Owners, National Federations and Trainers) providing step-by-step instructions to use the new modules on the FEI HorseApp were made available [here](#).

FEI Online Seminars: The FEI hosted two online seminars for Veterinary Delegates to advise them on the use of the FEI HorseApp for Examination on Arrival at events.

15 April 2021

Biosecurity Toolkit for Equine Events: Dr Katie Flynn's Biosecurity Toolkit for Equine Events was published on the FEI website. (See Annex 11)

Dr Flynn's work which was co-authored with Ellen Mary Wilson, Josie Traub-Dargatz and John Madigan, was published in February 2012 during her time at the California Department of Food & Agriculture. The content was used to create the FEI Campus biosecurity course.

16 April 2021

FEI Online Organisers' Seminar: The FEI hosted an online seminar with Organisers to guide them through use of the FEI HorseApp, particularly the new Horse Check Out module that needed to be used for each horse leaving their venue.

21 April 2021

Clarifications to the EHV-1 By-Laws measures for RTC were published (see Annex 12). These included a Sample Stable Plan (see Annex 13) and two changes to the Measures:

- Removal of the Temporary Provision requiring Organisers to identify an external stabling facility (not the isolation stables) within 50 kilometres of their venue to house non-compliant horses and their in-contacts:
- Extension of the sanction for non-compliance on self-certification to include 10-day temperature recording.

22 April 2021

Feedback on measures: Feedback on the post-EHV-1 RTC measures showed that they were generally working well, although there were initially some areas that required improvement.

There were some reports of athletes that had not uploaded their horses' PCR test results on the FEI HorseApp prior to arrival and FEI Headquarters staff assisted on this.

Examination on Arrival: In the 10-day period after the measures came into force on 12 April, FEI Veterinarians on the ground at events used the FEI HorseApp to process more than 6,300 horses through the Examination on Arrival (EOA) system at 30 different venues.

The Veterinarians were fully supported in this process by the FEI IT and Veterinary Departments, and IT were also working on better integration of the microchip readers.

26-27 April 2021

The FEI Veterinary Director visited three European Tour venues – Peelbergen (NED) on 26 April 2021, and the two Belgian competition sites at Lier and Opglabbeek to assess and advise on implementation of the RTC measures.

4 May 2021

11,000 horses through EOA: The RTC measures continued to function well, with a total of 11,000 horses processed through the Examination On Arrival system by FEI Veterinarians since the measures were implemented on 12 April 2021.

PCR tests continued to be uploaded onto the FEI HorseApp by athletes, with over 5,000 documents checked manually over the previous three weeks.

FEI HorseApp updates: A new version of the FEI HorseApp was published each week, with enhanced functionality for horse checkout at events and improved integration of microchip readers.

5 May 2021

Positive in Opglabbeek (BEL): Samples taken from a horse participating for consecutive weeks at Opglabbeek, and which was therefore subject to mandatory PCR testing under the FEI RTC measures, returned positive for EHV-1. The horse, which had no clinical signs but had been

put into isolation, had tested negative for EHV-1 prior to travel to Opglabbeek. The athlete's other four horses were also isolated.

The boxes vacated by all five horses were thoroughly cleaned, disinfected and sealed in line with the FEI RTC measures. None of the five horses had shown any clinical signs. All five horses were re-tested and were being closely monitored by the Veterinary Delegate for any clinical signs. No other horses were stabled within six metres of this athlete's horses during the previous week's CSI at the venue.

The Opglabbeek Organisers, who fully adhered to the FEI RTC protocols with regard to this horse and its in-contacts, also informed all athletes with horses entered to participate at the venue. In addition, the FEI contacted Organisers and Veterinary Delegates of events in Belgium and the Netherlands in the following two weeks, advising them that there was no requirement for them to take any measures additional to the FEI RTC protocols.

6 May 2021

Opglabbeek case: The FEI was advised that the horse previously stabled immediately adjacent to the index horse in Opglabbeek (BEL) had also tested positive to EHV-1. The index horse remained positive following a re-test, but the athlete's other three horses returned negative PCR tests. All five horses, which were previously in isolation onsite at Opglabbeek, were in external quarantine off-venue and none were showing clinical signs.

Horses blocked on FEI Database: The five horses were blocked on the FEI Database and required to undergo a 21-day isolation period and then produce a negative PCR test result before they could be unblocked.

Gene typing: The laboratory in Belgium that tested the samples from these horses was requested to send the two positive samples to the OIE Reference Laboratory in Ireland or Ghent University for gene typing.

The Opglabbeek Organisers contacted all athletes that had horses housed in the same stable tent as the index horse and offered, as an extra precaution, to pay for PCR testing, even though the FEI did not view these horses as close in-contacts.

7 May 2021

Positives in Switzerland: The FEI was advised that three horses had tested positive for EHV-1 at a stables in Switzerland. The positive results were confirmed only after the athlete from the home stables had arrived on-venue at the Italian CDI in Ornago (ITA) on Wednesday evening, 5 May 2021.

Following confirmation of the positives at the home stables, all three horses left the venue, as officially validated by the event checkout system on the FEI HorseApp. The FEI followed up on this situation, together with the National Federation.

8 May 2021

Ornago (ITA): The FEI was notified that one of three horses tested onsite at the CDI in Ornago prior to departure for their home base in Switzerland had returned positive for EHV-1. Neither the positive horse nor its two travelling companions were showing any clinical signs on departure from the event venue, and had already left the venue when the test results came through.

Horses blocked on FEI Database: As a result of the positive test, all three horses were blocked in the FEI Database and were required to fulfill all biosecurity requirements (21-day isolation and a negative PCR test) before being unblocked. The athlete had left the Italian venue after being advised that three horses at their home stables had tested positive for EHV-1.

The FEI Veterinary Delegate onsite at Ornago reported that stables at the venue were well separated and that biosecurity was all in accordance with the FEI Veterinary Regulations and RTC protocols.

Free PCR testing: Horses stabled in the same barn as the positive horse were all tested, and voluntary PCR testing was offered for all other participating horses in Ornago. The results were expected in the following 24 hours. No horses onsite were showing any clinical signs.

9 May 2021

Ornago: Samples taken from 24 horses at Ornago (ITA) all returned negative for EHV-1. These horses were all stabled in the same barn as the three horses that had left the Italian CDI on Thursday 6 May 2021. The sample from one of these three horses subsequently returned positive for EHV-1 after the horse had left the venue and arrived back in Switzerland. The athlete had returned to Switzerland after being informed that three horses at their home stables had tested positive.

12 May 2021

Compiegne (FRA): As a safety measure, the CDI at Compiegne, 27-30 May, was added to the list of events that required mandatory PCR testing prior to arrival. Athletes were required to upload negative PCR test results for their horses to the FEI HorseApp before being permitted entry to the showgrounds.

12 May 2021

Ornago: A total of 59 horses, part of voluntary PCR testing offered for participating horses at Ornago, all returned negative for EHV-1. The 24 in-contact horses stabled in the same barn as the three horses that had left Ornago the previous week underwent mandatory testing, and their results were also negative, as confirmed on 9 May.

Opglabbeek: The five horses from the Belgian CSI at Opglabbeek that had been in external quarantine off-venue returned to their home stables, where they continued their 21-day isolation period. Two of the five had tested positive for EHV-1. All five horses were required to return negative PCR tests before they could be unblocked in the FEI Database.

New Opglabbeek positive: The FEI was advised of a new EHV positive in Opglabbeek, unconnected to the previous case at the Belgian venue the week before. The horse, which was participating for consecutive weeks and was therefore subject to mandatory PCR testing under the FEI RTC measures, was not showing any clinical signs. The positive horse and the athlete's other four horses left the venue and returned to their home stable. The athlete was in contact with the FEI Veterinary Department on biosecurity requirements and RTC protocols.

13 May 2021

Potential cases in Lithuania: The FEI was advised of two potential cases of EHV-1 at the CSI 2* W Kunkiai (LTU). The FEI Veterinary Delegate isolated all horses from the same athletes and horses that travelled with them. The FEI followed up further with the Organiser.

18 May 2021

Ornago: The FEI was notified that two horses, both of which had been housed in the same barn as a horse that had subsequently tested positive after its return to Switzerland from the Italian CDI in Ornago, had developed fever once they were back in their home stables. One of them subsequently tested positive for EHV-1. The FEI Veterinary Department considered all horses housed in the same barn at Ornago as in-contacts.

Horses blocked on FEI Database: As a result, a further 24 horses were blocked in the FEI Database and were required to fulfil specific biosecurity requirements prior to being unblocked.

The Athletes were advised and the relevant National Federations were provided with a list of their blocked horses, plus a list of upcoming entries for these horses.

The three horses that had returned from Ornago to Switzerland, one of which then returned a positive test result from the sample taken prior to departure from the venue, had been blocked in the FEI Database the previous week.

21 May 2021

Additional horses blocked: Following confirmation that a horse housed in a separate barn to the index horse at Ornago (ITA) had tested positive to EHV-1 at its home stables, the FEI blocked a further seven horses in the FEI Database. These included the positive horse and those horses that were stabled in close proximity to it on the Ornago venue.

Biosecurity protocols: The same biosecurity protocols applied to these horses as for the 27 horses which had participated in Ornago that were blocked earlier the same week, two of which were positive. Day zero for all these horses was set at 9 May 2021, the final day of the CDI at Ornago.

27 May 2021

Based on the experience gained since the RTC measures had been implemented on 12 April 2021, and following the assessment made together with the FEI Veterinary Epidemiology Working Group and in close cooperation with the relevant stakeholders (including but not only the Equestrian Organisers), the FEI Board approved certain amendments and extensions to the EHV-1 By-Laws.

The biosecurity measures that would be applicable in mainland Europe from 31 May 2021 to 31 December 2021 were published on 27 May 2021. The measures were to be included in the draft 2022 FEI Veterinary Regulations and, subject to approval at the FEI General Assembly, would be implemented globally from 1 January 2022.

The 15-point EHV-1 By-Laws covered:

- Increased FEI jurisdiction;
- Biosecurity plans to be submitted pre-event;
- Mandatory use of the FEI HorseApp;
- Twice daily temperature checks;
- Isolation protocols;
- Cleaning and disinfection;
- Athlete self-certification of equine health status;
- Pre-event regulatory inspections;
- Additional onsite veterinarians;
- EHV-1 and Equine Influenza testing prior to flights and on entry to pre-export quarantine (PEQ);
- PCR testing of any horse displaying fever or neurological signs at an FEI Event; sample to be sent to a laboratory listed by the FEI.

The measures included a mix of prolongation of certain By-Laws (some with amendments), clarification of existing FEI Veterinary Regulations and new By-Laws. (See Annex 1, 27 May 2021 entry for full details.)

28 May 2021

Compiègne (FRA): The FEI Veterinary Department was alerted to an EHV-1 positive in a horse competing at the previous week's CDI in Compiègne following mandatory pre-arrival testing. The horse and its two in-contacts were immediately removed from the venue and re-tested.

Risk assessment: Following a risk assessment of the stabling layout and management in Compiègne, it was concluded that the risk of transmission to other horses at the venue was minimal. The FEI continued to follow up on this case.

Horses blocked on FEI Database: All three horses were blocked on the FEI Database and were required to fulfil biosecurity requirements before returning to competition.

4: FEI VETERINARY EPIDEMIOLOGY WORKING GROUP REPORTS

Expert support: As referenced in the EHV-1 Report, Part 1, within days of the outbreak being confirmed in Valencia (ESP), the FEI initiated a series of regular meetings with world leading epidemiologists to conduct a full risk assessment of the further spread of the outbreak. This ongoing interaction formed the basis of the FEI Veterinary Epidemiology Working Group, which was formalised during the second week of March 2021.

The Group's brief was to monitor the evolution of the EHV-1 outbreak and provide specialist advice on its management and preventive measures for the future.

The Group, which still meets for updates when required, was composed of leading EHV experts Professor Ann Cullinan (IRL), Dr Richard Newton (GBR), Dr Gittan Gröndahl (SWE), Professor Anne Couroucé (FRA), the FEI Veterinary Director Dr Göran Åkerström and FEI Senior Veterinary Advisor Dr Caterina Termine, supported by Dr Jenny Hall, Chair of the FEI Veterinary Committee and (as of 17 November 2021) a member of the FEI Executive Board.

The Group, whose individual members had been working with the FEI since the start of the EHV-1 outbreak, held its first formal meeting on 18 March 2021. Reports and recommendations from the Group's weekly meetings were published on the dedicated EHV-1 hub throughout the outbreak.

Publication of the Reports continued on an ongoing basis during drafting and implementation of the RTC measures. All Reports are available as Annexes to Part 1 of the [Report](#), and Part 2.

15 April 2021

The FEI Veterinary Epidemiology Working Group held the fifth of its weekly meetings. The Group reviewed the current situation with the virus in mainland Europe, discussed principles for isolation and testing of abnormal cases, and future research projects that would result from this outbreak.

Current situation

There had been no further cases reported in France linked to the Spanish events, and no linked cases in horses returning to Ireland to date. There was follow-up on a number of horses in isolation in Sweden and test results would be further analysed at the OIE Reference Laboratory at the Irish Equine Centre.

Return To Competition

The Group was advised that the RTC measures, which commenced on 12 April 2021, had progressed well and that the FEI's IT department had been supporting Veterinary Delegates with use of the FEI HorseApp. There had been good compliance with the paperwork requirements by athletes/grooms. The FEI was following up on event biosecurity compliance by Organisers and Veterinary Delegates.

Future research projects

There was lengthy and detailed discussion on scientific projects that would result from this outbreak, and the Group considered the option of commissioning a group to work on data

collection from National Federations. It was agreed to approach RESPE, the French Equine Pathology Epidemiological Surveillance Network, to request assistance on this.

The project, funded by the FEI, would initially focus on collecting and analysing data for horses that participated at Valencia.

Abnormal cases

The Group discussed the principles for isolation and testing of abnormal cases at length, after being advised that the Veterinary Department had received a result where a horse tested negative for EHV-1 by PCR analysis of a nasopharyngeal swab, but positive to the virus by PCR analysis of a blood sample. The Group recommended the horse should be re-tested and both blood and nasopharyngeal swab samples should be taken.

Cancellation of events

The Group was advised that some events due to take place in the forthcoming weeks had been cancelled as the Organisers had been not been able to meet the mandatory biosecurity requirements for EHV-1 and were also hampered by the Covid-19 restrictions. The event cancellations had caused concern amongst the athletes who needed to get their horses out to competitions.

The FEI Veterinary Department would work closely with Organisers to assist them to maintain compliance with normal biosecurity regulations beyond 31 May 2021 when enhanced biosecurity measures were due to end.

The next meeting was scheduled for **22 April 2021**.

22 April 2021

The FEI Veterinary Epidemiology Working Group held the sixth of its weekly meetings. The Group reviewed the current situation in mainland Europe, and was briefed on the RTC measures.

Current situation

The Group was advised that EHV-1 cases, unrelated to the outbreak in Spain, had been reported in Italy, Sweden, Great Britain, Ireland and France.

Return To Competition

The FEI Veterinary Director reported on the RTC protocols, confirming that there had been good compliance and that the measures were functioning correctly. Pre-inspection of event sites was generally going well. At events where pre-arrival PCR testing was required, most results had been uploaded onto the FEI HorseApp. Monitoring was being conducted by the FEI to ensure that horses that had not been tested were not allowed entry to venues.

A number of events had carried out the first session of the mandatory weekly PCR testing and no positives had been reported to date.

The Group was advised that since the measures came into force on 12 April, FEI Veterinarians have used the FEI HorseApp to process more than 6,300 horses through the Examination on Arrival system at 30 different venues, including recording temperatures.

Further discussion on defining and declaring an outbreak of EHV-1 revolved around a risk hierarchy to categorise early warning signs of an outbreak and the necessary rapid actions to mitigate risks.

Research work

There was an update provided on five positive samples for which the EHV-1 Clade 10 virus had been almost fully sequenced by researchers at Ghent University in Belgium. These were not novel viruses. The genome sequences were available for researchers.

EHV vaccines

The Group discussed vaccine availability and licensing processes.

There was also discussion about the use of Valaciclovir in the treatment of EHV-1. While it was agreed that early use of the drug might result in only mild and short-lived clinical signs, its efficacy was difficult to evaluate in a field situation. Further follow-up was needed on this.

The next meeting was scheduled for **29 April 2021**.

29 April 2021

The FEI Veterinary Epidemiology Working Group held the seventh of its weekly meetings.

The Group reviewed the current situation in mainland Europe and was briefed on the compliance and logistics/functioning of the RTC measures. A draft proposal for the principles of declaring an outbreak of neurological EHV was reviewed, as well as items for revision of the FEI Veterinary Regulations.

Update on current outbreak

The Group agreed that there had been no increased risk to FEI events that had taken place during the previous week.

They discussed two previously infected horses that had tested negative after their isolation and then tested positive again for EHV-1. Consideration was given to the challenges of interpreting these results which could be attributed to an issue with PCR testing or infection. They confirmed that horses with positive results, despite high Ct values, should not attend events, even though they are unlikely to be contagious. Such results may be caused by residual nucleic acids, which could be the start of viral reactivation and lead to shedding.

They further discussed the important role of Athletes in terms of the integrity of the process, which relied on them to report positive results as well effective and correct sampling of their horse(s).

The Group determined that laboratories could not report positive results directly to the FEI unless the FEI submitted the samples. It was noted that the FEI would only have this level of jurisdiction where sampling took place at FEI Events.

Return To Competition

The FEI Veterinary Director reported favourably on his recent visit to several equestrian events and the implementation of the RTC measures.

The Group agreed the FEI needed to review the rules relating to in-contacts of positive cases attending competition and the impact this could have on very large stables.

The Group also recommended the FEI review the Equine Health Self-Certification Form in view of it being signed by a veterinarian instead of the athlete.

FEI Veterinary Regulations

A set of proposed changes to the 2022 FEI Veterinary Regulations were presented to the Group for discussion:

- GPS for retrospective tracking of horse movements and recording stops at overnight stables on the journey to and from events.
- One-week deadline for Veterinary Delegates to approve an event biosecurity plan.
- Inspection and approval processes for the cleaning & disinfection of stables before they are sealed.
- Equine Health Self-Certification Form: Following questions from the community, the Group confirmed that body temperature should be recorded for 10 days in advance of the event, not five, and that the form could be updated to declare an absence of clinical signs at a stables over a period of 21 days.
- Stabling of horses over consecutive weeks at FEI Events: The group was in favour of making improvements to stabling rather than imposing PCR testing. It was recommended that a review of the pre-event testing should take place with respect to the testing timeframe and positive cases with high Ct values.
- Vaccination: The group was in favour of giving advance notice to a possible introduction of mandatory vaccination. It was recommended that an independent scientific review including the advantages, disadvantages, risk, benefits, costs to athletes and recommendations, should take place before introducing the rule since it was unclear whether the vaccine offers protection against neurological EHV. A similar study took place before the introduction of mandatory Equine Influenza vaccinations in Ireland, France and Great Britain. A new EHV consensus statement was expected to be published in the near future.
- Limiting nose-to-nose contact: The Group was in favour of horses from the same stable being in contact with each other when stabled in units and limiting physical contact with horses from other stables. It was noted that the horse's need for social contact would be beneficial in environments such as competition.

It was agreed that discussion on biosecurity advice concerning serial sampling procedures at FEI events and defining and declaring an outbreak would take place at the next meeting, scheduled for **6 May 2021**.

6 May 2021

The FEI Veterinary Epidemiology Working Group held the eighth of its weekly meetings. The Group reviewed the current situation in mainland Europe, focusing on the two positives at a Jumping event in Belgium, ongoing implementation of the RTC measures, and continued its discussions on defining and declaring an infectious disease outbreak.

Current situation

The Group was provided with an update on the situation in mainland Europe, including information on the two EHV-1 positives at Opglabbeek (BEL) following mandatory weekly PCR testing under the FEI RTC measures at events where competition takes place over consecutive weeks with horses stabled in the same airspace. Both horses had tested negative for EHV-1 prior to travel to Opglabbeek.

The FEI Veterinary Director advised the Group that on re-test, two of the athlete's five horses had returned positive, but none of the five were showing clinical signs. No other horses had been stabled within six metres of the two positive horses during the previous week's CSI at the venue.

All five horses, which were previously in isolation onsite at Opglabbeek, were now in external quarantine off-venue. The five horses had been blocked in the FEI Database, and would need to fulfil the biosecurity requirements (21-day isolation period and negative PCR test result) before

they could be unblocked. The two positive samples were to be sent to the OIE Reference Laboratory in Ireland for gene typing.

The Group supported the conclusion of the FEI Veterinary Department and onsite Veterinary Delegate (VD) risk assessment that there was no need for other Organisers or VDs to take any measures additional to the FEI RTC protocols.

Return To Competition

The Group was updated on the ongoing implementation of the RTC measures, including the number of horses that had been processed through the Examination on Arrival and event checkout protocols using the FEI HorseApp.

Work was continuing on defining and declaring an outbreak, based on the principles already available in the FEI Veterinary Regulations and also published on FEI Campus. A final draft would be shared with the Group by the FEI Veterinary Department in the coming weeks.

Laboratory update

The Group was advised that there was still a considerable amount of ongoing work on analysis and sequencing.

Vaccination

It was agreed that an independent review should be conducted on the possibility of making EHV vaccination mandatory for global equestrian sports. The Group would provide proposals for candidates to conduct this review.

The Group's next meeting was scheduled for **12 May 2021**.

12 May 2021

The FEI Veterinary Epidemiology Working Group held the ninth of its weekly meetings.

The Group was updated on the current situation in mainland Europe, with discussion mainly focusing on the positive PCR results in Opglabbeek (BEL) and Ornago (ITA). The FEI was following up on results of PCR testing offered to horses housed in the same stable tent as the index horse at Opglabbeek.

The Group was advised that there was limited information available on a case of EHV-1 in Norway, and was also informed about a group of eight horses in Sweden that had shown neurological signs and tested negative for EHV-1. The Swedish horses remained under investigation and a definitive diagnosis of EHV-1 was unlikely. In addition, an EHV-1 neurological outbreak had been reported in the UK. There were no known links to the Spanish outbreaks. No EHV-1 neurological outbreaks had been reported in Ireland.

The Group concluded that there was no increased risk of EHV-1 in mainland Europe.

Laboratory update

Isolates from the Dressage horse that had tested positive to EHV-1 after samples were taken in Ornago were being further analysed at the French laboratory Labeo to determine whether there were any links to the Spanish outbreak.

Vaccination

Following agreement at the previous week's meeting that an independent review should be conducted on the possibility of making EHV vaccination mandatory for global equestrian sports, it was concluded that this review should include whether vaccines are effective in preventing outbreaks of neurological disease, as well as a risk assessment of events involving unvaccinated

horses. The Group provided a number of candidates to conduct this review and they would be approached.

Equine Health Self-Certification Form

The Group discussed the equine health self-certification form required under the RTC measures and, more specifically, the veterinarian's role in signing the forms. It was determined that only veterinarians who were staff members based at the stables in question would be able to declare they had not attended any sick animals at the stables. The form would remain unchanged and any resulting sanctions would be directed to the Person Responsible (PR) as determined by the FEI Rules.

The Group's next meeting was scheduled for **19 May 2021**.

19 May 2021

The FEI Veterinary Epidemiology Working Group held the 10th of its weekly meetings.

The Group was provided with information on the current situation in mainland Europe, focusing on the Ornago positives.

In addition to the index horse, a further three horses had tested positive after leaving Ornago. Two of these were housed in the same on-venue barn as the index horse, and resulted in a further 24 horses being blocked in the FEI Database on 18 May.

A third positive horse that had participated in Ornago was housed in a different barn to the index horse. (Post-meeting update: this third horse was blocked on the FEI Database on 20 May.) Following a detailed risk assessment conducted by the FEI Veterinary Department on receipt of the stable plan from the Organisers, a further six horses stabled in close proximity to the positive horse were blocked on the FEI Database on 21 May.

Labeo, the French laboratory, was working on characterising the virus in the Ornago samples.

Two horses that had tested positive for EHV-1 following mandatory sampling at the five-week tour event in Kunkiai (LTU) earlier in the month, tested negative on 15 May.

Three horses had tested positive for neurological EHV-1 in the UK, but there was no known link to the Spanish outbreak. Screening of horses that had returned from the Iberian Peninsula was ongoing.

There had been no neurological EHV-1 cases in Ireland this year. All Irish horses that had returned from events on the Iberian Peninsula had completed quarantine and tested negative for EHV-1.

The Group agreed that while the Ornago situation required careful monitoring, there was no increased risk relating to other events or National Federations.

Laboratory update

The weekly update on the ongoing laboratory work included information on Clade 10 viruses sequencing and preparation for submitting them to the international genetic sequence database, GenBank. A Swiss laboratory was working on sequencing isolates.

The Group discussed the criteria for listing of laboratories that were analysing samples for EHV-1. The Group suggested that, in the absence of ISO accreditation, laboratories should participate in voluntary proficiency testing on an annual basis in order to be listed.

EHV vaccination policy

The Group continued its discussion on the independent review of the EHV vaccination policy and discussed the scope of the project.

The project, based on best information available, would look at how to quantify whether vaccination is effective, cost vs benefit, and the pros and cons of vaccination.

The Group's next meeting was scheduled for **28 May 2021**.

28 May 2021

The FEI Veterinary Epidemiology Working Group held the 11th of its weekly meetings.

Current situation

As always, the Group was provided with information on the current situation in mainland Europe and was advised that there had been no reported cases of EHV-1 linked to FEI events since the last meeting. Within the previous month, small numbers of EHV-1 neurological disease had been reported in Italy, the UK and USA, but the ongoing outbreak in the UK had no links to the Spanish outbreak. Cases of EHV-1 respiratory disease that were recently reported in Italy were not linked to FEI events.

It was unclear at this point whether the EHV-1 cases at Ornago (ITA) were related to the Spanish outbreak.

The Group was updated about US horses that had arrived in Liège (BEL) prior to travelling on to the CDI in Compiègne (FRA). Several days after arrival, two horses tested positive for EHV-1, but did not show any clinical signs of infection. The horses, which had no links to either the Spanish outbreak or Ornago, did not go to Compiègne, were isolated and were due to be re-tested.

A separate shipment of US horses heading to the FEI Endurance World Championships at Pisa (ITA) withdrew from the event following investigation of a pyrexia horse prior to their arrival on-venue at San Rossore. Analysis of blood samples suggested a viral infection and withdrawal of the entire team was based on all the horses being considered in-contacts. The pyrexia horse later tested negative for EHV-1.

The Group agreed that it would be beneficial to obtain data from events held since 12 April 2021 to determine the prevalence of EHV in sport horses. Although it was noted that the reasons for withdrawals would be unknown, withdrawals could be compared with the same period last year. Comparisons could also be made between events where pre-arrival EHV-1 testing was mandatory and events where there were no testing requirements.

Data collection

The data collection project from National Federations was ongoing. A research application to the FEI Veterinary Committee for an EHV-1 project was being prepared. The FEI would provide data to support the application.

Laboratory update

The Group provided an update on the ongoing laboratory work, particularly analysis of samples. Work was ongoing for preparation of a proficiency panel for a laboratory in Portugal that would like to carry out EHV-1 testing on FEI horses. A system for proficiency testing was already in place and testing was supplied free of charge by the Irish Equine Centre.

Funding would be required to offer proficiency testing to laboratories. These commercial testing programmes would run under the auspices of the FEI.

Future EHV research projects would be discussed at the forthcoming International Horse Sports Confederation (IHSC) and OIE Technical Committee meeting and the FEI Veterinary Director would report back to the Group.

Prolonged biosecurity measures

The Group was informed that the biosecurity measures that would remain in place beyond 30 May were published on 27 May (see Annex 1, 27 May 2021 entry) and had been well received. EHV-1 testing would only be required prior to flights and on entry to pre-export quarantine (PEQ). The Group discussed the use of the same laboratory for sample analysis of the horses that would be in PEQ in Aachen en route to Tokyo in order to ensure harmonised results.

The Group's next meeting was scheduled for **10 June 2021**.

10 June 2021

The FEI Veterinary Epidemiology Working Group held its 12th meeting.

Current Update

After being provided with an update on the current situation in mainland Europe, specifically in Sweden, France, Switzerland, Great Britain and Germany, the Group concluded that there was currently no increased risk.

During the update, the FEI Veterinary Director informed the Group that a treating veterinarian reported alleged malpractice regarding biosecurity by a Veterinary Delegate. The FEI Veterinary Department was following up directly with the National Federation.

The Group was advised that the FEI had developed a policy for managing requests from Organising Committees to implement pre-event EHV-1 testing. Requests for pre-event testing must be made via the relevant National Federation (NF), must include a reason for the request and an explanation of the biosecurity measures implemented by the NF to mitigate increased disease risks.

IT

The FEI IT department was continuing to extract data for the Group.

A website version of the disease reporting form was published and promoted to the FEI community. The form was also included in the FEI HorseApp at a later date.

Vaccination review

Initial exploratory work continued on putting in place an independent review on the possibility of making EHV vaccination mandatory for global equestrian sports. In order to avoid potential conflicts of interest, it was agreed that appointed researchers should not have been involved in advising NFs.

The FEI Veterinary Director will discuss the project with the OIE and IHSC Technical Committee, after which terms of reference will be drafted for the Epidemiology Group to review.

Monitoring of Olympic & Paralympic horses

There was extensive discussion on the monitoring of Olympic and Paralympic horses, both in the surveillance period prior to entering Pre-Export Quarantine (PEQ) and during PEQ. While this was a complex issue, the FEI and shipping agent Peden Bloodstock were jointly working to find optimal solutions that would protect the horses with a minimum of disturbance to the teams.

It was agreed that monitoring horses before, rather than after their arrival at PEQ was optimal in view of the potential stress associated with transport. It was suggested that monitoring the horses' temperature twice daily for 14 days before their arrival at PEQ could be carried out at

the horses' home stables, with oversight by the relevant NF. The FEI Equine Health Self-Certification form would be used for recording temperatures.

Isolation stables, protocols and management, layout of the facility and stable allocation at PEQ, liaison with the Japanese Veterinary Authority and the proximity of a CDIO5* in Rotterdam (NED) shortly before the start of PEQ were also discussed.

NFs with horses travelling to Tokyo would receive an update on these protocols as soon as they are finalised.

The Group's next meeting was scheduled for **23 June 2021**.

23 June 2021

The FEI Veterinary Epidemiology Working Group held its 13th meeting and, as always, was provided with an update on the current situation in mainland Europe and ongoing laboratory work.

Current situation

There were no new reported cases of neurological EHV-1 connected to the Iberian outbreak. France reported one non-related case.

Laboratory update

The Group was advised that delayed samples from Britain had cleared customs without incident and, following preparation at the OIE Reference Laboratory in Ireland, had arrived in good condition at the laboratory in Belgium. The sequencing proved that this strain was different to that in the Iberian outbreak.

As per the original proposal from the meeting of 28 May, a proficiency panel for EHV had been sent to a Portuguese laboratory and to Laboratory Dr Böse in Germany. The panels sent from the OIE Reference Laboratory in Ireland were based on samples from nasal sampling, and there were also samples from abortions.

The Irish Equine Centre had successfully submitted the sequences of its historic clade 10 viruses to the GenBank sequence database. The Swiss laboratory had also submitted sequences of virus from the Iberian outbreak.

Efforts to isolate virus from samples sent from Sweden and from samples provided by an Irish athlete in Valencia had not been successful, probably due to the timing of sample collection and inadequate quantity of virus in the samples.

This led to discussion on the importance of obtaining samples directly at major outbreaks. It was agreed that the FEI should set up an international collaboration agreement which would ensure that, in future outbreaks, a dedicated veterinarian would sample horses using appropriate sampling material. Samples would be sent to the OIE Reference Laboratory.

Vaccination review

The FEI Veterinary Director informed the Group that the independent review on potentially making EHV vaccination mandatory for global equestrian sports had been well received by the OIE-IHSC Technical Committee.

Monitoring of Olympic & Paralympic horses

The enhanced EHV-1 measures for Olympic and Paralympic horses in all Pre-Export Quarantine (PEQ) facilities had been communicated the previous week to those National Federations with confirmed quota allocations or listed as reserves for Tokyo 2020.

Data request

The FEI IT department had compiled the requested information on horses withdrawn from FEI events due to the impact of the EHV-1 outbreak and the data would be shared with the Group.

Serial sampling

The Group discussed the draft text produced by the FEI Veterinary Advisor for guidelines on serial sampling of horses at FEI events should an outbreak of infectious diseases be suspected or confirmed. Serial sampling involves the sampling of individual horses one after another. This would be conducted under strict biosecurity protocols and would be carried out by an FEI Treating Veterinarian or an Official Veterinarian such as the Veterinary Services Manager or Veterinary Delegate. Sampling could be requested by the FEI Veterinary Department and all athletes would be required to submit their horses for sampling.

The Group's next meeting was scheduled for **6 July 2021**.

6 July 2021

The FEI Veterinary Epidemiology Working Group was updated on the biosecurity protocols in place at the PEQ facility in Aachen (GER) for horses travelling to Tokyo for the Olympic and Paralympic Games, including fast-tracked testing of samples at the Böse laboratory in Germany as part of the risk mitigation measures.

The Group's next meeting was scheduled for **20 July 2021**.

20 July 2021

The FEI Veterinary Epidemiology Working Group discussed the current situation, laboratory work, vaccination protocols, PEQ and Tokyo, and the new inspection process for events taking place over consecutive weeks.

Data collection from NFs

A member of the Group had drafted a questionnaire for the collection of data through National Federations on horses that had participated at Valencia.

Current situation

The Group was not aware of any recent cases of neurological EHV-1.

A horse at an event in Vilamoura (POR) had been placed in isolation after becoming pyrexia. The horse tested negative for EHV-1 and was kept in isolation for several more days as a precaution.

Laboratory update

Three viruses had been isolated from Swedish samples taken from cases of abortion. The viruses were to be typed to determine any connections to the Spanish EHV-1 outbreak.

Vaccination review

The Group was advised that some sales houses in Britain were considering mandatory EHV-1 vaccination; horses in Germany are to be vaccinated from 2022 or 2023 at the latest; young horse vaccination will be mandatory in France from 1 January 2022; and there are no plans to mandate vaccination in Ireland.

Pre-Export Quarantine (PEQ) & Tokyo

Updates were provided to the Group on Pre-Export Quarantine (PEQ) in Aachen, the successful transport of horses to Tokyo, and the excellent onsite facilities at the Olympic and Paralympic venues. The horse health inspections required by the Japanese veterinary authority were being carried out in good collaboration with the on-site veterinary team. Two inflatable slings had been transported to Japan from Europe and the treating veterinary team had familiarised themselves with their use.

The Group was also updated on the constant monitoring of heat and humidity levels using the wet-bulb global temperature (WBGT) index at both the Equestrian Park in Baji Koen and the cross country venue at Sea Forest.

Future FEI Tour events

The Group was advised that, in order to oversee compliance with the EHV By-Laws put in place to mitigate against another EHV-1 outbreak at competition venues, the Veterinary Department would be appointing a Foreign Veterinary Delegate (FVD) to events taking place over consecutive weeks. The FVD would spend no longer than three weeks at the same venue to ensure independence from the Organising Committee. For critical events, such as Tours, a member of the FEI Veterinary Department would make a pre-event inspection.

A checklist for use during these inspections was being developed and would be presented to the Group for review.

The Group's next meeting was scheduled for mid-September.

14 September 2021

The Group was advised that there had been no recent cases of EHV-1 neurological disease reported to the FEI or via the International Collating Centre (ICC).

The Equine Disease Free Zone (EDFZ) for both the Olympic and Paralympic Games in Tokyo had worked well in all three areas: Haneda airport, horse lorries and road transfer routes; Baji Koen Equestrian Park; and the cross country venue at Sea Forest.

An update on the EHV By-Laws was provided to the Group, including details of sanctions for non-compliance. There was also discussion on the management of horses that remain blocked in the FEI Database following their participation at events affected by the EHV-1 outbreak. It was agreed that, in light of the EHV-1 disease situation in Europe, unblocking these horses would not be considered above a normal (i.e. not zero) baseline risk level and that an unblocking date could be communicated to the community, with the process dependent on horses meeting the required biosecurity protocols.

Summary of EHV By-Laws

The Group was provided with a summary of the EHV By-Laws in place in mainland Europe until 31 December 2021.

On 1 August 2021, use of the FEI HorseApp was made mandatory for the recording of rectal temperatures before and during competition and the completion of Self-Certification Health Forms. Approximately 15,000 athletes and grooms throughout Europe used the FEI HorseApp on a daily basis, and the system was working well with the support of the IT Department.

From 1 October 2021, sanctions would be given to Persons Responsible (PRs) who failed to use the FEI HorseApp. Sanctions are progressive, from a warning for the first offence to fines and ineligibility to compete for subsequent offences. *(NB: The implementation date for sanctions was later changed to 1 November 2021 in order to educate the community and ensure that Athletes/Grooms/Officials etc had familiarised themselves with the requirements and use of the FEI HorseApp.)*

Events that run competitions over consecutive weeks are considered high risk. Foreign Veterinary Delegates were appointed to these events until the end of 2021. The intention is to continue these appointments into 2022 depending on available funding.

Work was ongoing to evaluate the EHV By-Laws and incorporate some of them and their associated sanctions into the FEI Veterinary Regulations for global implementation in 2022, subject to approval at the FEI Hybrid General Assembly in November 2021.

9 November 2021

The Group reported that there had been no recent outbreaks of neurological EHV-1.

The FEI Veterinary Director advised that the use of the FEI HorseApp at the Examination on Arrival at FEI events throughout Europe was working well and had successfully identified some febrile horses, allowing for correct biosecurity management of these horses.

The Group discussed the EHV-1 survey, the vaccination review project, a vaccination study in Japan and the biosecurity contingency plan.

The EHV-1 survey, sent to National Head Veterinarians (NHV), or National Federations in countries with no NHV, was aimed at securing information on the status of EHV-1, outbreaks and vaccine use in each country. The resulting data would be used to evaluate the potential for compliance if mandatory EHV vaccination were to be introduced.

The Group had provided feedback on the biosecurity contingency plan template, which would be made available in an electronic format to Organising Committees and Veterinary Service Managers to support them in meeting the requirement to have a biosecurity contingency plan.

World-renowned EHV-1 epidemiology and pathogenesis specialist Professor Lutz Goehring (GER) will head up the vaccination review project, which will be focused on scientific evidence rather than opinion on the use of EHV vaccines. Professor Goehring will present his findings to the FEI Sports Forum 2022.

Laboratory update

Sample analysis from an EHV-1 abortion storm at a competition stables in Europe where some horses had also shown neurological signs showed that the virus was different from the one associated with the Valencia outbreak.

5: BREACHES OF PROTOCOLS

There have been various breaches and alleged breaches of the RTC protocols. As with breaches that occurred during the initial outbreak, individual accountabilities will need to be established by the FEI prior to any further potential actions. If, after a thorough analysis by the FEI Legal Department, any legal action is initiated, the findings of those legal processes will be made public in due course.

6: ADDITIONAL MEASURES IMPLEMENTED AFTER END OF RETURN TO COMPETITION PERIOD (12 APRIL–30 MAY 2021)

Compliance

In order to reinforce the importance of compliance in preventing future mass outbreaks, National Federations were advised in mid-September (see Annex 1, 16 September entry) of the sanction system related to the EHV-1 By-Laws and Horse Health Requirements, due to come into force on 1 October 2021 for all FEI Events in mainland Europe.

However, although 90% of the athletes and grooms competing in mainland Europe had been correctly adhering to the stringent biosecurity requirements for the previous four months, the

FEI Board agreed that October 2021 should be used as a transition month to reinforce the importance of both the procedures and compliance within the community. Implementation of the sanctioning system was therefore deferred until 1 November 2021.

National Federations were advised of the deferral on 1 October 2021 (see Annex 1, 1 October 2021 entry). Sanctions would be issued automatically by FEI Headquarters.

National Federations were also advised that, in accordance with EHV-1 By-Law No. 1, the FEI could impose EHV-related requirements and restrictions against Athletes, Horses, FEI Officials or Organisers at any time, even if an FEI Event was over.

The FEI urged National Federations to inform their Athletes and to use October 2021 as an educational month to ensure their stakeholders were fully aware of the EHV-1 By-Laws, prior to the sanctioning system being fully implemented.

Sanctions for breaches of biosecurity measures

Sanctions for breaches of the amended biosecurity measures can be found in Annex 6 of the FEI Veterinary Regulations.

More specifically, the biosecurity related elements generated by the RTC measures are Sanctions 40 to 47, based on Articles 1031 and 1029. These are currently under review as part of the Rules Revision process as proposed further amendments to the FEI Veterinary Regulations, which will be sent to stakeholders as part of the normal consultation process, prior to a vote at the FEI General Assembly 2022.

FEI HorseApp

As a result of the mandatory use of the FEI HorseApp, the FEI IT Department was able to supply data about the number of horses that were processed during the months of October and November 2021.

During the period 1-18 October 2021, when October was used as an educational month during which no sanctions were imposed, 9,216 horses competed. Of these, 2,991 (32.4%) met all the requirements, 5,598 (60.74%) had one offence, 618 (6.71%) had two offences and nine horses (0.10%) had three offences.

Once sanctions were implemented from 1 November 2021, the level of compliance improved massively, with 6,684 (74.91%) of the 8,923 horses that competed between 1 and 28 November fully compliant with the required biosecurity measures.

However, despite the improvement following the educational outreach, there were still some sanctions generated during November 2021. A total of 2,198 (24.63%) horses competing in the same period had one offence, 39 (0.44%) had two offences, and two horses (0.02%) had three offences.

As part of the education process, a dedicated team at FEI Headquarters provided IT support for all FEI HorseApp queries. Information on the FEI HorseApp for Athletes, Grooms, Owners, Trainers, Veterinarians, Organisers & National Federations, and how to use it is available [here](#).

In order to deliver a more user-friendly service to the community, the FEI HorseApp is now available in English, French, Portuguese, Spanish, Russian and Arabic, provided the users phone is in one of those languages.

Risk assessment

A risk assessment of the Tour venues, which included a thorough appraisal of biosecurity, stable security, safety and emergency protocols, was put in place by the FEI Veterinary Department in

2019 specifically aimed at evaluating whether bespoke/customised Rules were required for the Tours.

The FEI Veterinary Director and Veterinary Manager initiated a series of visits to Tour venues, starting with Valencia and Oliva in mid-February 2020, but the onset of the Covid-19 pandemic the following month resulted in further planned visits being postponed. Site visits of Tour venues did take place in 2022 (see the Pre-event regulatory visits section below).

Foreign Veterinary Delegate for high-risk events

Following introduction of the RTC By-Laws in mid-April 2021 and in order to ensure compliance, the FEI appointed and paid for a Foreign Veterinary Delegate (FVD) to attend high-risk events and any others deemed necessary, in addition to the major events traditionally attended by FVDs.

Where required, an FEI Headquarters representative also visited venues to oversee compliance.

Pre-event regulatory visits

Following implementation of the new FEI Veterinary Regulations on 1 January 2022, as voted in by National Federations at the FEI Hybrid General Assembly 2021 in Antwerp (NED), the FEI reinstated the regulatory visits during 2022, subject to Covid-19 restrictions.

To ensure that the required measures under the Rules around biosecurity are fully in place, pre-event inspections have been carried out at a number of venues.

The FEI conducted a minimum of one pre-event regulatory visit to specifically identified high-risk events, such as Tours where there were a large number of horses (more than 400) spending multiple weeks at one venue.

FEI Veterinary Manager Goncalo and FEI Official Veterinarian and Spanish National Head Veterinarian Ignasi Casas visited Valencia (ESP) on 20 January 2022 prior to the start of their season to assess and advise on compliance with the new biosecurity Rules in the FEI Veterinary Regulations.

7: CONCLUSIONS

The EHV-1 By-Laws and biosecurity measures put in place for the 2021 outbreak were aimed at:

- i) preventing sick horses entering FEI venues;
- ii) fast detection and isolation of suspected cases;
- iii) prevention of further spread of virus from infected horses;
- iv) ensuring veterinary care of sick horses.

These aims were met to a large degree and the return to competition in mainland Europe on 12 April 2021 worked very well. There were challenges, however, and amendments had to be made on several occasions in order for the system to be function optimally, and these revisions have now been incorporated into the FEI Veterinary Regulations,

Jurisdiction

The strengthened FEI jurisdiction that was put in place during the 2021 outbreak in mainland Europe was used to amend both the FEI General and Veterinary Regulations, which were approved at the FEI Hybrid General Assembly 2021.

This increased jurisdiction proved its value during the 2022 outbreak of the neurological form of EHV-1 in Thermal, California (USA) as it allowed the FEI to impose further biosecurity measures, such as control of movement of horses, both on and off venue.

The United States Equestrian Federation (USEF) fully supported the FEI role in the outbreak and imposed similar measures on their national horses at the Thermal venue.

Recommendation

It is strongly recommended that National Federations implement their own biosecurity rules and, most importantly, have a rule that would allow them to shut down a national event where there is a disease outbreak and block in-contact horses.

The equestrian community

A much increased biosecurity awareness was noted, partly due to educational outreach by the FEI and National Federations, but likely also because of the high level of social media posts and traditional media coverage of the outbreak.

Most parts of the equestrian community acted responsibly and cared for their own and other's horses in compliance with the By-Laws. Some of the additional biosecurity measures came at considerable amount of financial investment by Athletes/Owners, Organisers and the FEI. Acceptance therefore was crucial and there was frequent and extensive dialogue with stakeholder groups. This included a meeting in Barcelona (ESP) in October 2021 with International Jumping Riders' Club (IJRC) representatives, Steve Guerdat and Pedro Veniss, that led to a reduction of the pre-event requirement to record rectal temperature from 10 to three days.

Recommendation:

Dialogue of this nature must continue to maintain awareness and acceptance and to allow for further improvements to the measures where required.

Compliance:

Not all stakeholders, including FEI Officials, were fully compliant with the By-Laws. The reasons likely vary, but the following have been discussed:

- Ignorance;
- Excess of information/information overload;
- Many years of previous under-resourcing;
- Previous non-compliance with biosecurity requirements;
- Lack of ability and/or motivation to invest in meeting the requirements.

In order to protect horses at competitions, it was necessary to introduce sanctions in the EVH-1 By-Laws, which were subsequently issued automatically by FEI Headquarters,

Recommendation:

Sanctions will remain important, but there is clearly a need for fine-tuning to better reflect the level of biosecurity risk that the various breaches have resulted in. This will be addressed in the 2022 draft Rules revision process for the FEI Veterinary Regulations.

FEI HorseApp

The development of the FEI HorseApp provided for recording and remote monitoring of:

- Examination on Arrival;
- Rectal temperatures before and during an FEI Event;
- Submission of the digital FEI Equine Health Self-Certification Form;
- Uploading of PCR test results;
- Equine whereabouts information

The launch of the updated FEI HorseApp with horse health related modules was mostly very successful and welcomed by the community, although there were some issues, mainly due to high volume usage of on-venue wifi or users getting acquainted with the new modules, but most were quickly addressed. The in-person presence of the IT-team at FEI Events, and also extensive support during weekends, was very well received by Organising Committees and FEI Veterinarians.

Without the FEI HorseApp and the FEI IT Department's support to stakeholders, the safe and successful return to competition would have been very difficult, both to achieve and to control.

The FEI is very aware of the importance of the FEI HorseApp and has allocated considerable resources – both financial and human – to ongoing work with the application.

Recommendation:

Further development of and support for the FEI HorseApp is strategically important, including the launch of additional offline capabilities and any new biosecurity modules as and when required.

Examination on Arrival (EOA)

Identifying horses with signs of infectious disease prior to entry onto an FEI Event venue is key.

Examination on Arrival (EOA) has been mandatory at FEI Events for many years, but the follow-up to the 2021 EHV-1 outbreak has shown that it has not been conducted at many events over a number of years. With the mandatory recording in the FEI HorseApp of EOA data, non-compliance has become obvious. In addition, the fact that only FEI Veterinarians can enter such data, including rectal temperatures, in the app provides further protection against potentially sick horses entering a venue.

Recommendation:

The taking of rectal temperatures is not without risk, particularly for grooms. The alternative protocol (see Annex 8, pages 16 & 17) for EAO was introduced at several FEI Events and should remain as an option for the future. It is also important to find alternative safe and validated methods for taking body temperature.

Risk classification of FEI Events

Following pre-Event risk assessment (see above under Section 6: Additional Measures), Events were risk classified based on the number of competing horses and for how long these horses stayed on the venue.

So-called Tours with a large number of horses onsite for several weeks were placed in the highest risk category. This largely resulted in Jumping being the only discipline that, in reality, was covered by some of the important requirements such as Pre-event inspections, FEI appointed and paid Foreign Veterinary Delegate and mandatory pre-event PCR testing (see Section 6).

Some Organisers with many horses entered for their Events reduced the number of horses and shortened the time the horses were allowed to spend on the venue. As a consequence, many horses were moved between nearby venues with shorter intervals, resulting in an increased risk for reactivation and spread of EHV-1 virus and other infectious diseases.

One-day FEI Events without onsite stabling have limited opportunities for the EHV-1 virus to spread between horses. For example, the Examination on Arrival process at CCI Short format is performed in combination with the Horse Inspection. The taking of rectal temperature at such events has been highlighted as a safety risk.

The biosecurity risks associated with the discipline must also be taken into consideration, such as lower level Endurance Events where there is no onsite stabling, but the horses are competing en masse and there are multiple veterinary examinations, including examination of oral mucous membranes.

Recommendations

The risk classification of FEI Events should be comprised of more factors and be in the Critical Control Point format (CCP). Examples of CCPs could be layout and construction of facilities, onsite logistics, documentation and resourcing of biosecurity measures.

There need to be different biosecurity protocols based on the discipline specifics. The FEI Veterinary Department should have provisions in the FEI Veterinary Regulations to impose measures on any Organiser where there may be an increased biosecurity risk.

The combination of these two recommendations – CCP and discipline-specific biosecurity protocols – would allow for allocation of resources to where they are most needed.

One-day FEI Events without onsite stabling should have a low risk classification and some measures could be derogated.

FEI Event inspections

In order to allow Organisers of high-risk events sufficient time to deliver on any missing requirements before the Event, the FEI Veterinary Department assigned and paid for experienced veterinarians to evaluate and advise on biosecurity measures several weeks in advance of the event. In many cases this was successful and well received. In-person inspections were also conducted by FEI staff from Veterinary Department before and during events.

Recommendation

More FEI Events should be visited pre-event and pre-season. The FEI assigned Veterinarian or FEI Staff should evaluate the organisation of the Event using the CCP system. There are potential synergies with the Event Standards Project.

The inspections should be carried out in an advisory capacity, working together with the Organiser, although sub-optimal delivery of the biosecurity requirements would result in action being taken by the FEI.

Pre-event PCR testing

The 120-hour pre-event PCR testing was required between 12 April and 30 May for horses competing at high risk events. This likely lowered the risk for introduction of EHV-1 at FEI Events during this sensitive period, but resulted in a high financial cost for Athletes and Horse Owners. The costs, in combination with the limited value of a 120-hour old test result, make this measure of limited value even during a current outbreak.

Pre-event testing should, however, not be excluded from emergency measures during an outbreak, but the time from sampling to arrival at the Event should be shortened to no more than 96 hours, ideally shorter.

Requesting test results shorter than 120 hours complicates sample logistics. Another option could therefore be to use validated stable side tests (rapid antigen tests etc.) close to, or even at the arrival at the Event.

Recommendation

The International Horse Sport Confederation (IHSC) should suggest a validation system of stable side tests via the World Organisation for Animal Health (OIE) Reference Laboratories for EHV-1. The FEI Veterinary Department should promote such validation to the biochemical industry. The

systematic use of validated stable side tests by Organisers should be encouraged and also result in a lower risk classification by the FEI.

On-venue temperature monitoring

Athletes and/or Grooms are required to check their horses' rectal temperature morning and evening while they are stabled at FEI Events. This has worked very well and provides an early warning system in a suspected case. There is, however, information that not all temperature taking is being properly conducted.

Recommendation

As part of their daily routine, Veterinary Delegates/Veterinary Services Managers should check the body temperature of a number of horses, also during the Onsite Preparation Period prior to the start of the Event.

Management of suspected cases

The protocols for management of suspected cases and the resourcing of Isolation Stables have been greatly improved. A major problem that remains is the difficulty of finding laboratories with PCR equipment that will operate on weekends etc.

Recommendation

When validated stable side tests are available, the FEI should establish protocols for their use. (Please see recommendation under Pre-Event PCR testing.)

Emergency Response Unit

A key requirement identified by the investigation into the 2021 outbreak in mainland Europe was the necessity to set up an Emergency Response Unit that could be drafted in immediately an outbreak – of any disease – is confirmed at an FEI Event.

The Emergency Response Unit, which is currently in the proposal stage, will be funded in full by the FEI.

The Unit will include top veterinarians specialised in treating horses impacted by serious disease and collecting samples for testing with appropriate sampling material in line with the guidelines on serial sampling of horses at FEI events.

It has been agreed that it will also be important to include an individual dedicated solely to collecting data about the horses, their treatment, vaccination status and any other underlying health issues etc.

It is proposed that the Unit could also be made available to National Federations in the event of an outbreak at a national competition.

Recommendation

As a priority, a project should be set up for the establishment of an EHV-1 Emergency Support Unit.

European Union Notifiability of EHV-1

As a result of the EHV-1 outbreak in mainland Europe in February 2021, the Directorate of Health, DG Santé, of the European Commission requested expert advice from the European Food Safety Authority (EFSA) in March 2021 on whether EHV-1 should be a notifiable disease in the EU Animal Health Law.

EFSA has provided the first part of its advice that gives inconclusive support for notifiability and will submit the second part of advice this summer. The IHSC has set up a taskforce will provide

advice to the Horse Industry on what standpoint it should take on this matter. The work is ongoing and meetings with DG Santé are planned.

EFSA's official document, *Assessment of listing and categorisation of animal diseases within the framework of the Animal Health Law (Regulation (EU) No 2016/429): infection with Equine Herpes Virus-1*, published on 12 January 2022, gives inconclusive support for making EHV-1 a notifiable disease. The FEI has been informed that EFSA will provide further advice on this subject during the summer of 2022.

The IHSC has set up a taskforce that will provide advice to the horse industry on what standpoint it should take on this matter. The work is ongoing and meetings with DG Santé are planned.

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8: ANNEXES TO EHV-1 REPORT PART 2

- ANNEX 1 - FEI Updates on Return To Competition (multiple texts)
- ANNEX 2 - Measures for Restart of Competition in Mainland Europe on 12 April 2021_30 March 2021
- ANNEX 3 - List of Approved Laboratories for PCR sample analysis
- ANNEX 4 - FEI Pre-Event Biosecurity Checklist for Official Veterinarians
- ANNEX 5 - Horse Arrival Procedure
- ANNEX 6 - FEI Equine Health Self-Certification Form & FEI Temperature Monitoring Chart
- ANNEX 7 - List of FEI 2021 Events requiring negative EHV-1 PCR Tests
- ANNEX 8 - EHV-1 Return To Competition Athlete Information Seminar (IJRC/IDRC), 9 April 2021
- ANNEX 9 - FEI post-EHV-1 Return To Competition By-Laws - 9 April 2021
- ANNEX 10 - EHV-1 Return to Competition Factsheet for Athletes & Grooms (various languages)
- ANNEX 11 - FEI Biosecurity Toolkit for Equine Events (Dr Katie Flynn, California Department of Food & Agriculture)
- ANNEX 12 - Master-By-Laws_Measures for Return to Competition in mainland Europe_12 April 2021-updated 21 April 2021
- ANNEX 13 - Sample Stable Plan_March 2021
- ANNEX 14 - Sample Athlete communique - Negative PCR Test for EHV-1 Required for your Upcoming Event – 26 April 2021