Equine Infectious Diseases Report

for the 1st Quarter 2010 (No. 3)

for The Amlin Group

by The Animal Health Trust

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Introduction

Welcome to the third equine infectious diseases quarterly report produced for the Amlin Group by the Animal Health Trust. This document provides a brief summary of the various equine infectious diseases that are currently believed to be of most importance to the British horse industry, whether they are present in the United Kingdom at the moment or not and looks to provide overall a qualitative assessment of the present risk to British horses. The diseases listed here (and others as necessary) and their associated risks will be reviewed on a quarterly basis with changes in perceived threat levels and new incidents of disease around the world being specifically highlighted as appropriate.

Due to the recent outbreaks of Glanders in Brazil and Bahrain, in this issue we include a brief summary of this disease, descriptions of the outbreaks and a qualitative risk assessment of the present risk to horses in the UK.

UK Endemic Equine Infectious Diseases

1. Equine influenza (EI) – highly contagious viral respiratory disease

Activity reported 1st quarter 2010

Egypt: In April 2010 an article by Abdel-Moneim A.S. *et al* was published in the *Journal of Biomedical Science*. In this article they reported on the isolation and characterization of highly pathogenic avian influenza virus subtype H5N1 from donkeys. Nasal swabs were collected from three infected animals for virus isolation and one hundred and five serum samples were collected from apparently healthy donkeys from the area, 4-6 months after the procedure of virus isolation. The affected donkeys had moderate respiratory distress including cough, fever and serous nasal discharge. The course of the disease was short (72h) and all the donkeys responded well after antibiotic and antipyretic therapy, with no recorded mortalities.

The disease recoded on 24th March 2009, one week after an outbreak of H5N1 infection in poultry in the village, where many donkeys suffered from the same clinical manifestations in an epidemic manner. H5N1 was isolated from a pool of nasal discharge from the three affected animals sampled. Regarding the serology results, 27 out of the 105 animals tested were positive in the Haemagglutination Inhibition (HI) test (titre $\geq 3 \log_2$) with the highest percentage of positives found in the area where the virus was isolated.

Ireland: Two outbreaks, one in a sports horse yard and one in a National Hunt racing yard, were identified by RT-PCR and serology. Virus isolation is in progress. The virus isolated from the horses in the National Hunt yard belongs to Clade 1 of the Florida sublineage.

Sweden: An outbreak was confirmed by the SVA laboratory using PCR. The outbreak was limited affecting 10 Thoroughbreds on two premises. It was presumed there was poor vaccination status in these stables.

USA: An isolated outbreak of respiratory disease in a group of mini-donkeys was associated with the detection of influenza virus by RT-PCR assay together with the isolation of equine herpesvirus 1 from a limited number of the affected animals.

AHT's subjective risk assessment for UK horses
EI H3N8 remains a high risk for non-vaccinated animals that move and mix with other horses such as at events and shows with potential for moderate impact among such groups. Vaccines continue to confer good clinical protection although absence of recent OIE recommended updates in some vaccines increases the likelihood of viral shedding and onward spread from vaccinated horses. Divergence of evolution of viruses between the two clades of Florida sublineage requires close monitoring as is the most likely cause of vaccine failure. The isolation of H5N1 avian influenza virus from donkeys in Egypt raises the concerns about the occurrence of non-H3N8 strains in horses since current vaccines would not be protective. However, the role of donkeys in spreading H5N1 virus to birds, humans or other mammals including equines needs to be assessed.

2. Equine herpes virus-1 (EHV-1) – viral respiratory disease, also causing paralysis and/or abortion

Activity reported 1st quarter 2010

Argentina: One Thoroughbred mare aborted due to EHV-1 during post import quarantine. The mare travelled from USA on 8th February and aborted on 12th February. The non-neuropathogenic strain was confirmed by Virology Institute INTA Castelar using agent isolation and real time PCR. The mare had been vaccinated during the fifth, seventh and ninth month of pregnancy with an EHV-1 inactivated vaccine.

France: One French Saddle horse in Loire-Atlantique showed clinical signs of EHV neurological disease and EHV-1 was confirmed by PCR. The animal was vaccinated and no other animals on the premises were affected.

One case of EHV-1 neurological disease and abortion was identified on a French Saddle horse in Haute-Vienne. Blood and cerebrospinal fluid collected at necropsy were positive for EHV-1 by PCR.

Nine EHV abortions have been reported on six premises (one case on three premises and two cases on the three others). Four incidents were on Thoroughbred premises and two were on non-Thoroughbred premises. The premises were in Orne, Vendée, and Ain. Mares on the two Thoroughbred premises were fully vaccinated.

Germany: On 12th January 2010 a single case occurred in a vaccinated Thoroughbred mare on a stud in the south east of Germany. The mare aborted on a premises used for quarantine purposes by the stud, where she had been taken 9 days prior to abortion. DNA fragments of EHV-1 were detected by PCR in the University of Leipzig in fetal tissues and placenta. Therefore, EHV-1 was considered to be the cause of the abortion, although distinct morphological changes were absent. For monitoring purposes

all in-contact mares at the stud from which the mare originated were serologically tested twice. The observed antibody levels were not considered significant in either samples from any mares. Further abortions have not been reported to date on the stud during the foaling season.

In addition to this incident, thirteen other horses were diagnosed of EHV-1 infection by PCR.

Ireland: Nine cases of EHV-1 abortion were identified on a private Thoroughbred stud farm. The mares were described as fully vaccinated. Two single cases of EHV-1 abortion were identified on two private Thoroughbred stud farms. One case of EHV-1 abortion was identified on a public stud farm. All three mares were described as unvaccinated.

Japan: An EHV-1 outbreak causing abortion was reported on 5th January 2010, with the last case reported on 29th March 2010. The diagnosis was confirmed by Hokkaido Hidaka Livestock Hygiene Service Centre and Hokkaido Iburi Livestock Hygiene Service Centre using serology. The outbreak was limited, affecting 26 Thoroughbreds and non-Thoroughbreds on 10 premises. Twenty five of the 26 horses had been vaccinated.

An EHV-1 outbreak causing neurological disease was reported on 16th February 2010 with the last case reported on 19th February 2010. The confirming laboratory was Hokkaido Iburi Livestock Hygiene Service Centre using serology. The outbreak was limited affecting five horses on one premises. All horses had been vaccinated.

Switzerland: In February, two unvaccinated broodmares aborted at seven months of pregnancy on a livery and riding premises in Jura. In one fetus, immunofluorescence was positive for EHV-1.

In February in a riding stable in the central part of Switzerland containing approximately 20 animals all horses and one donkey, with the exception of three, showed fever, slight nasal discharge and coughing. Approximately half of the horses developed neurological signs including hindlimb ataxia, paralysis of the bladder and rectum and recumbency. Four horses had to be euthanased and the remainders are recovering slowly. One horse was positive for EHV-1/-4 by ELISA. The investigations are ongoing and the vaccination history of the horses is unknown.

In March, near Zurich, a 17-year old riding-pony mare showed exercise intolerance for approximately one week, within three days fever of 39°C, knuckling, ataxia and bladder paralysis. The mare was euthanased without further examination; however, there was a titre for EHV-1 of 1:243.

United Arab Emirates: One case of EHV-1 abortion on a breeding stock horse was reported on 28th March 2010. The laboratory confirming diagnosis was carried out by the Central Ventral Research Laboratory UAE by agent isolation. The mare foaled one week early with premature placental separation. The foal was born alive but died within a few minutes without the lungs inflating. The virus was isolated from placenta, liver, spleen, lung and tonsil. Vaccination had taken place at five, seven and nine months of gestation.

United Kingdom: With regard to EHV-1 causing abortion, one small outbreak, nine single cases of EHV-1 abortions and a case of neonatal death due to EHV-1 have been reported in this quarter. The

small outbreak reported involved two abortions in vaccinated Thoroughbred mares on a stud farm. Of the nine single cases of EHV-1 abortions, one was diagnosed in a stud farm which reported another EHV-1 abortion in December 2009. All the mares involved in these nine single abortions were Thoroughbreds, with the exception of two. EHV-1 was diagnosed by PCR and virus isolation in placenta and/or fetal tissues. In a Thoroughbred stud farm a case of neonatal death was diagnosed to be due to EHV-1 by histopathology in fetal tissues.

As previously reported, in this quarter neurological EHV-1 was diagnosed by PCR in spinal cord tissues taken from a seven year-old Thoroughbred mare sent for post-mortem examination with a history of recumbent paralytic disease requiring euthanasia. The mare was in race training in a yard in southern England and all horses on the yard were current for EHV-1/-4 vaccination.

EHV-1 was confirmed by virus isolation from nasopharyngeal (NP) swabs and/or heparinised blood samples in 12 of the 32 animals in the premises. The yard and their veterinary surgeons worked closely with the British Horseracing Authority and the Animal Health Trust in conducting further serological and virological laboratory tests, which provided the all clear as of 18th February. No further cases have been reported and restrictions have been lifted.

USA: Respiratory illness related to EHV-1 was reported on a single premises in Oklahoma, Kentucky and Massachusetts. A total of 16 abortions due to EHV-1 have been confirmed in Kentucky, the majority in Thoroughbred mares. Outbreaks of EHV-1 neurological disease have been reported from Louisiana, New Jersey and Massachusetts. The three cases of neurological disease involved in the New Jersey outbreak were rescue animals that had come from an auction, all of which had to be euthanased. By the time of this report quarantines have been lifted and there have been no further cases. Both non-neuropathogenic and neuropathogenic strains of EHV-1 were detected in the non-fatal case of neurologic disease in Massachusetts. The affected horses in Massachusetts had contact with the farms involved in the New Jersey outbreak.

AHT's subjective risk assessment for UK horses
Risk probably remains unchanged. Vaccination, particularly of pregnant mares is recommended but is known not to give absolute guarantee of protection and does not carry a claim for neurological disease. Appropriate management (according to the HBLB Codes of Practice) as well as strain differences may influence success of control of outbreaks.

3. Equine coital exanthema (EHV-3) – viral venereal disease

No activity reported 1st quarter 2010

AHT's subjective risk assessment for UK horses
Risk remains unchanged. Low risk of occurrence where there is an absence of overt disease but can be moderate impact if stallions severely affected. Care required with hygiene and biosecurity, particularly around actively and previously affected animals. HBLB Code of Practice is now available.

4. Strangles (*Streptococcus equi*) – bacterial respiratory disease

Activity reported 1st quarter 2010

Chile: A limited outbreak was reported on 2nd February 2010, affecting 20 Thoroughbred breeding stock on one premises. The outbreak was clinically mild and confirmed by Servicio Agricola y Ganadero by agent isolation. The animals displayed signs that included fever, anorexia, serous nasal disease and abscessed submaxillary, mandibular and retropharyngeal lymph nodes.

France: Strangles was reported in non-Thoroughbred horses in six premises in the regions of Seine-et-Marne, Côtes d'Armor, Moselle and Loire-Atlantique. The animals affected displayed signs that included lymphadenopathy, nasal discharge, fever in three cases, coughing in three cases, abscessation in three cases, dysphagia and anorexia in two cases. None of the horses were vaccinated. Laboratory diagnosis was made using PCR.

Germany: One horse from Germany was affected and diagnosed of Strangles by PCR.

Ireland: Three outbreaks were reported with one case in Limerick, one case in Kerry and four cases in Carlow.

South Korea: A limited outbreak of strangles occurred from December 2009 to March 2010 on one premises in Gyeonggi Province. Two strangles cases in Thoroughbred horses were reported from one Thoroughbred breeding farm. The affected animals displayed signs that included fever, anorexia, nasal discharge and lymph node enlargement. The College of Veterinary Medicine, Seoul National University confirmed the diagnosis by agent isolation. The animals were treated and recovered without complications. The control measures applied were isolation and disinfection of infected premises.

Sweden: Strangles is endemic throughout the country affecting all types of horses.

United Arab Emirates: An outbreak was reported on 20th October 2009 with the last case reported on 22nd March 2010, affecting 15 non-Thoroughbreds on one premises. The confirming laboratory was Central Veterinary Research Laboratory UAE by agent isolation.

As a follow-up to the 4Q report on strangles cases in UAE, one of the mares on the property that had tested clear of the organism on PCR and culture of guttural pouches, had a foal that developed a 5cm subcutaneous abscess on the lateral thorax from which *Streptococcus equi* was cultured. There have been no further cases and the outbreak is now considered resolved.

UK: Strangles remains endemic in the UK, especially among parts of the non-Thoroughbred horse population. Diagnoses are confirmed in the UK based on traditional culture of *S. equi* and qPCR on respiratory samples and/or seroconversion using a blood-based ELISA test.

USA: Although outbreaks of strangles were reported from a number of states including Kentucky and Maine, the frequency of outbreaks was somewhat less than reported for the same period in previous years.

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Australia: As of 28th April 2010 Strangles has been diagnosed in several horses in North Queensland. The authorities are urging horse owners to consider vaccinating their horses against Strangles and follow biosecurity measures in order to limit the extent of the disease.

AHT's subjective risk assessment for UK horses

Risk remains unchanged. Moderate risk of occurrence where there is movement and mixing of horses of unknown disease history or if there is a known history of previous strangles and results in high impact. Extreme care with hygiene and biosecurity particularly around actively and previously affected animals. Laboratory testing required to confirm absence of infectious risk in accordance with the HBLB Codes of Practice Guidelines

UK Exotic Equine Infectious Diseases

5. African Horse Sickness (AHS) – fatal, vector-borne (midges) viral disease

Activity reported 1st quarter 2010

Ethiopia: No activity has been reported in this quarter. AHS remains endemic throughout Ethiopia according to the OIE. The animals affected (4000) are horses, mules and donkeys. Previous outbreaks of the disease in Ethiopia were due to serotypes 9 and 6. The current outbreak has affected equines vaccinated against serotype 9.

Ghana: An outbreak of AHS virus serotype 2 was reported in February 2010. The outbreak affected 30 equids, with 30 deaths and 185 susceptible animals. Measures taken included vaccination in response to the outbreak, but no vaccination or treatment of affected animals is permitted. The source of the infection is unknown and the event is still continuing.

AHT's subjective risk assessment for UK horses
Risk of occurrence remains low but potentially very high impact for the entire UK equine industry were it to occur. A previously agreed EU Vaccine Bank of monovalent attenuated live vaccine against AHS, comprising 100,000 doses each of serotypes 1, 2, 3, 4, 6, 7 and 8 held by the manufacturers in South Africa has unfortunately been put on hold following a ten-fold increase in the cost quoted for this service. We understand, however, that there are several projects in the pipeline in Europe which are looking at the development of vectored AHS vaccines, which would be much more appropriate for use in non-endemic regions should an incursion of AHS virus occur.

6. Contagious Equine Metritis (CEM) – bacterial venereal disease

Activity reported 1st quarter 2010

France: One case of CEM was confirmed on 8th March using agent isolation. This case occurred on a French Trotter in Orne.

Germany: Two horses were diagnosed of CEM by agent isolation. There were 2,462 horses tested for CEM by culture.

UK: In this quarter there have been two outbreaks of CEM.

On 5th of March 2010, Department for Environment, Food and Rural Affairs (Defra) confirmed Contagious Equine Metritis (CEM) in a 5 year old Arabian stallion stabled in Devon. The horse is under restriction and being treated in line with the HBLB Code of Practice. Further epidemiological investigations are on-going.

As of 23rd of March 2010, Defra confirmed CEM in a 10 year-old Highland mare stabled in Durham, England. The affected mare is under restriction and treatment has commenced in line with the HBLB Code of Practice. A full investigation was undertaken by a veterinary officer on 23rd March 2010; results are pending.

USA: One additional stallion (Holsteiner), currently located in the State of Wisconsin, has been confirmed positive for *Taylorella equigenitalis*, bringing the total number of carriers associated with the 2008/09 CEM event to 23 stallions and five mares. This stallion, though included in the exposed group of stallions and mares since 2009, was not finally tested for CEM until early 2010. All *T. equigenitalis* (CEMO)-positive horses, and all exposed horses that have been located, are currently under quarantine or hold order until determined as negative for CEMO. Testing and/or treatment protocols are being put into action for all located horses.

AHT's subjective risk assessment for UK horses
Risk of occurrence remains moderate with free movement of horses within the EU, moderate impact from Defra restrictions for affected premises when it occurs. Preventive measures covered by HBLB Codes of Practice.

7. Eastern equine encephalitis (EEE)/Western equine encephalitis (WEE) – vector-borne (mosquitoes) viral neurological diseases

Activity reported 1st quarter 2010

Venezuela: The EEE outbreak reported by the OIE in Venezuela in November 2009 is still ongoing. The outbreak has involved 21 susceptible horses, 2 cases and 2 deaths.

AHT's subjective risk assessment for UK horses
Risk of occurrence remains low but potentially high impact to horses in affected areas were it to become established in insect vectors. Vaccines are available elsewhere but would require special licensing for use in the UK.

8. Equine encephalosis – vector-borne (midges) viral disease

Activity reported 1st quarter 2010
No activity has been reported in this quarter.

AHT's subjective risk assessment for UK horses
Risk of occurrence remains low but potentially low-moderate impact to horses in affected areas were it to become established in insect vectors.

9. Equine Infectious Anaemia (EIA) – vector-borne (biting flies)/iatrogenic viral disease

Activity reported 1st quarter 2010

Belgium: As previously reported, following the investigation launched on 20th January 2010 after the UK reported having confirmed the disease in two horses of a consignment from Romania via Belgium, EIA was confirmed in one horse in Belgium on 2nd February 2010. This outbreak is ongoing and no further cases have been reported.

On the 18th of March, two separate but epidemiologically linked outbreaks involving one case of EIA each were reported in Fumal and Warsage (Liège), Belgium. The outbreak in Fumal involved a horse which had been imported from Romania in August 2009 and from which a blood sample was taken as a part of an epidemiological investigation on horses imported from Romania. The horse was subsequently euthanased. The outbreak in Warsage occurred in a riding school with 83 horses. Again, the positive case had been imported from Romania in June 2009 and a blood sample was taken on 8th March 2010 as part of an epidemiological investigation on horses imported from Romania. The horse was euthanased.

All horses having been in contact with the horses from Romania are being traced, movement controls are applied in the farms and the animals are being tested for the disease.

France: One case of EIA was identified on 3rd March in Montcaret (Dordogne) and two further cases were diagnosed on one premises on 30th March in French Trotters in Prigonrieux (Dordogne). The outbreak in Prigonrieux is epidemiologically linked to the index outbreak (outbreak in Montcaret) since the infected horse in the index outbreak came from the outbreak in Prigonrieux. The three affected horses were euthanased. The French Ministry is performing an epidemiological inquiry and further information will be reported as it become available.

Germany: Further to the previously reported EIA cases on premises in two different administrative districts, notice has been given that the investigations have been completed. The competent authorities considered the disease eradicated in the administrative districts of Kulmbach (Federal State of Bavaria) and Zollernalbkreis (Federal State of Baden-Württemberg). Consequently all implemented quarantine measures on the affected premises and within the established protection zones were removed.

According to the final report of the competent authorities in the administrative district of Kulmbach, three premises with four, 35 and resident horses, respectively, were affected. In all, 7 affected horses were euthanased. In the course of the eradication, a total of 229 horses on 17 premises were screened within the administrative district of Kulmbach and 49 horses, resident outside the named district, were also tested. In spite of these extensive investigations reasons for the introduction of the disease into the administrative district of Kulmbach remains unknown. However, a connection between the three affected premises via horse contacts with animals that were retrospectively shown to be positive for EIA was shown.

STOP PRESS:
Germany: As of 14th April 2010 EIA was reported in one horse in Bayern, Germany. There are 15 susceptible horses in the premises. Restrictions have been placed and the confirmed case has been euthanased. The event is still ongoing and the source of the outbreak is unknown.

Italy: Three sub-clinical cases (not clinically obvious) of EIA were identified by serological surveillance in Italy (Apulia on 26th March and Perugia and Naples on 13th April).

UK: As previously reported, on 19th January 2010, the Department for Environment, Food and Rural Affairs (Defra) confirmed two cases of EIA by positive Coggins test (agar gel immuno diffusion assay) in two horses in Wiltshire, England, following importation from Belgium having previously originated from Romania. In line with existing regulations, the infected horses were humanely destroyed.

STOP PRESS:
UK: As of 30th April 2010 all remaining horses on the infected premises have been tested with negative results, and no further cases have been reported. The OIE has declared this event resolved.

STOP PRESS:
European Union: As of 4th May 2010 EU has decided to strengthen the measures taken by the Romanian authorities to prevent the spread of equine infectious anaemia (EIA) to other Member States. The decision is based on a Commission proposal that was endorsed by the Member States during a two-day meeting of the Standing Committee on the Food Chain and Animal Health (SCoFCAH). Equidae from Romania will now be transported to other Member States only from holdings that are certified free of EIA and under a comprehensive and specific regime, which includes double testing before dispatch. This decision reinforces traceability and post-arrival control measures in the Member States of destination. A possible future "regionalisation" of measures within Romania will be allowed in those areas where it is demonstrated that the disease has been successfully eradicated.

AHT's subjective risk assessment for UK horses
As reported previously risk of occurrence was considered to be moderate due to disease present elsewhere in Europe and presumed endemic status in neighboring and accession states. There remains potentially high impact to UK horses and equine industry. Even though the outbreak in the UK has been declared resolved, given the time of the year, the risk of spread of the disease were it to occur would be enhanced due to the activity of biting fly vectors. The EU decision with regards to reinforce measures taken by Romanian authorities may be of help to reduce the risk of occurrence within the UK, although recent confirmation of cases in other Member States of the EU is concerning.

10. Equine viral arteritis (EVA) – viral respiratory/venereal disease

Activity reported 1st quarter 2010
Germany: Two affected horses were diagnosed of EVA by PCR and virus isolation.

AHT's subjective risk assessment for UK horses
Risk of occurrence remains moderate with free movement of horses within the EU, moderate impact from Defra restrictions for affected premises when it occurs. Preventive measures covered by HBLB Codes of Practice.

11. Hendra virus – fatal, viral respiratory/neurological disease

Activity reported 1st quarter 2010

Australia: In New South Wales, a 10-month-old Shetland pony from Campbelltown in western Sydney developed neurological signs and deteriorated rapidly over a 24-hour period. The pony had travelled from Tamworth and stayed near Luddenham (a known flying fox colony area) for two weeks. The pony was admitted to the University of Sydney Veterinary Clinic at Camden, where it was euthanased. Blood samples taken from the pony returned negative results to Hendra virus. Although almost all cases of Hendra infection in horses have been reported in Queensland (with one single case on the Far North Coast of New South Wales), it is assumed that the virus may exist wherever there are bat colonies. Veterinarians investigating severe respiratory, neurological or febrile diseases in horses in the Sydney region now consider Hendra virus as an alternative diagnosis. It is recommended that veterinarians use personal protective equipment.

In Queensland, two separate incidents of Hendra virus (HeV) infection in Queensland were previously reported (one in Rockhampton Shire and one in Bowen Shire) At the start of the fourth quarter 2009, only three properties associated with the Rockhampton incident remained in quarantine, including the infected property. The three properties in Bowen Shire were also still in quarantine. The final serological testing of all horses on these properties was conducted in October to coincide with a 32-day period (twice the longest known incubation time for HeV) since the last possible exposure to HeV. Horses were healthy and had no clinical evidence of HeV. Blood and serum samples tested at the CSIRO Australian Animal Health Laboratory by virus neutralisation test and PCR were all negative to HeV. In late October, all quarantines were lifted. There have been no further reports of HeV infection in the state. Due to ongoing human health concerns relating to HeV infection, Biosecurity Queensland has undertaken an education program for persons dealing with horses, particularly targeted towards the veterinary profession. HeV infection remains a rare disease in horses.

Following the two un-connected Hendra virus (HeV) outbreaks in Queensland, Australia which started in August 2009 and September 2009 respectively, all quarantines have been lifted after the final VNTs were negative.

AHT's subjective risk assessment for UK horses
Risk of occurrence remains low but potentially very high impact for UK horses and particularly attending veterinary surgeons were it to occur. Absence of mammalian (fruit bat) host spp. makes endemic establishment very unlikely.

12. Piroplasmosis – vector-borne (ticks) parasitic disease

Activity reported 1st quarter 2010

France: Piroplasmosis remains endemic in France.

Germany: Piroplasmosis was diagnosed by PCR in two affected horses.

UAE: Piroplasmosis is endemic in the UAE with cases reported periodically. The confirming laboratory is Central Ventral Research Laboratory Dubai by serology and agent isolation.

USA: As of early April, some 376 horses out of 2,172 tested were confirmed seropositive for *Theileria equi*. Presently, there are 292 antibody positive horses under quarantine on the index premises in southern Texas. Additional seropositive horses are being held under quarantine in 10 states, including Texas. Only one *T. equi* seropositive horse was detected out of 861 cohorts tested in 17 states; cohorts refers to horses with recent direct contact with positive trace-out animals. Testing of horses for interstate movement or movement to events has resulted in 17 *T. equi* positive horses being detected upon entering racetracks in New Mexico. Additionally, 14 seropositive horses epidemiologically unrelated to the index premises have been confirmed in Texas, and one in California. Tracing and testing of horses sold from the index premises in earlier years is ongoing. Additional to *Amblyomma cajennense,* specimens of *Dermacentor variabilis* tick removed from horses on the index premises have proved capable of transmitting *T. equi*.

AHT's subjective risk assessment for UK horses
Risk of occurrence remains moderate with free movement of horses within the EU, moderate impact on trade of affected animals.

13. Venezuelan equine encephalitis (VEE) – vector-borne (mosquitoes) viral neurological disease

Activity reported 1st quarter 2010

Central America: The eight Venezuelan Equine Encephalitis (VEE) outbreaks reported last quarter in three districts in Belize and the 3 outbreaks reported in Costa Rica are continuing. No information is available on the virus subtype involved or whether the horses involved had been vaccinated against VEE. As reported by the OIE on February 2010, the event in Costa Rica is unlikely to be contained and the infection is considered to be endemic.

AHT's subjective risk assessment for UK horses
Risk of occurrence remains low but potentially high impact to horses and humans in affected areas were it to become established in insect vectors. Equine vaccines are available elsewhere but would require special licensing for use in the UK.

14. Vesicular stomatitis (VS) – vector-borne (sandflies) viral disease

Activity reported 1st quarter 2010

USA: As reported by the Imports Team at Global Animal Health, there have been no vesicular stomatitis virus-positive premises in New Mexico or any other part of the USA for more than six months. The last VS virus-positive premises was released from quarantine on 18th August 2009. In accordance with EU legislation, the European Commission has advised that no safeguard testing for VS will be required for horses certified from the USA coming into the EU after 1st February 2010, and that no pre-import testing for VS will be required for equidae certified from the USA to the EU after the date of 18th February 2010.

AHT's subjective risk assessment for UK horses
Risk of occurrence remains low but potentially high impact to horses in affected areas were it to become established in insect vectors.

15. West Nile virus (WNV) – vector-borne (mosquitoes) viral neurological disease

Activity reported 1st quarter 2010

Costa Rica: As previously reported, on 2nd November 2009 the OIE reported the first occurrence of West Nile Virus (WNV) in Costa Rica. WNV was diagnosed by immunocapture ELISA in the National Veterinary Services Laboratory (OIE's Reference Laboratory); at the moment three outbreaks have been reported in a single district of the country, involving in total 90 susceptible horses, 4 cases and 3 deaths. Measures applied include quarantine, as well as movement control inside the country and control of arthropods. As of 22nd February 2010 the OIE has declared the event resolved

Italy: Following the outbreak of WNV which commenced in August 2008, according to the OIE the event is unlikely to be contained and the infection is considered to be endemic.

This outbreak affected eight provinces in three northern Italian regions (Emilia Romagna, Veneto, Lombardy), where a total of 794 cases of WNV infection in 251 equine stables were detected on the basis of clinical signs and as a result of a serological screening in horses living in the area. Some human cases were also reported and the involvement of resident birds was evident. In 2009 a new epidemic re-emerged mostly in the 2008 outbreak area with additional new foci of infection in central Italy.

According to R. Lelly from the *Instituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise "G. Caporale"*, the re-occurrence of WNV transmission in 2009 in areas far from localities with a high density of migratory birds, and the positive virological results consistently obtained from sampled resident birds suggest the establishment of an efficient local overwintering mechanism with the possible involvement of bird species such as magpies (*Pica pica*) and pigeons (*Columba livia*). This is

the first time that clear evidence of WNV endemicity in autochthonous bird species was observed in Europe.

AHT's subjective risk assessment for UK horses
Risk of occurrence remains low-moderate but potentially high impact to horses and humans in affected areas were it to become established in insect vectors. Equine vaccines are available and licensed for use in the UK already.

15. Glanders

Background
Glanders is a bacterial infection caused by *Burkholderia mallei*. It affects horses, donkeys and mules, but also carnivores and small ruminants. It also has a zoonotic potential (i.e. can affect humans). Even though veterinary intervention and national control programmes have significantly reduced the worldwide disease prevalence, Glanders continues to be reported from Brazil, China, India, Iran, Iraq, Mongolia, Pakistan, Turkey and the UAE, and is thought to be endemic in various areas of the Middle East, Asia, Africa and South America.

Horses are usually infected by eating or contacting contaminated food/water/troughs/tack. Control of the disease requires testing of suspect clinical cases, screening of apparently normal equids by the mallein test (clinical test for hypersensitivity against *B. mallei*), elimination of possible reactors and strict isolation of suspected cases and contact animals.

Horses imported to the United Kingdom from regions where there is a risk of Glanders are routinely blood sampled on arrival in the UK.

Activity reported 1st quarter 2010

STOP PRESS:

Bahrain: On 28th April 2010 Glanders has been reported in Bahrain for the first time. This bacterial disease, caused by *Burkholderia mallei*, has already affected eight horses in the past three weeks, which have been euthanased. In addition, around a dozen horses currently have symptoms of the infection; however some of them are already showing signs of recovery.

All horses suspected of either being infected or coming into contact with infected animals are being sampled and analysed in a specialist laboratory in the UAE (United Arab Emirates). Nearly 400 horses have already been sampled and the results from 10 of these horses are negative so far. Movement restrictions have been placed and investigations are ongoing.

Brazil: As of 21st April 2010 Glanders has been finally diagnosed in a horse in a university veterinary hospital in Brasilia, Brazil. On 22nd December 2009 the Official Veterinary service was informed that the horse showed respiratory signs and did not react to the treatment with antibiotics. The Official

Veterinary Service sent then samples to the National Agricultural Laboratory at Recife, Pernambuco. The serological results were positive for Glanders to the complement fixation test. Later, two mallein tests were made at 45-day and 60-day intervals and results were, respectively, inconclusive and negative. In order to continue the investigations, nasal swabs were sent to the same laboratory and the agent was isolated on 12 April 2010.

Since the first serological result was obtained, the Official Veterinary Service began investigations and examined all animals having had any contact with the affected animal; all were negative and, up to date, no animal shows clinical signs of the disease. The Official Veterinary Service conducts the health surveillance and investigations needed to identify the source or origin of the disease.

In Brazil, the disease is limited to certain areas, to some north-eastern States of the country, where it is endemic and, consequently, notified to the OIE in the six-monthly reports as present in a zone of the country. The disease has not been recorded in other regions of the country since 2008, when it was detected in the State of Sao Paulo. The preliminary outbreak assessment can be accessed online at: http://www.defra.gov.uk/foodfarm/farmanimal/diseases/monitoring/documents/glanders-brazil100423.pdf

AHT's subjective risk assessment for UK horses
Risk of occurrence remains low-moderate but the implications for both human and equine health make this a significant disease for ongoing vigilance.