



Department  
for Environment  
Food & Rural Affairs



# DEFRA / AHT / BEVA EQUINE QUARTERLY DISEASE SURVEILLANCE REPORT Volume 8, No.4: October – December 2012



## Highlights in this issue:

- **Equine Infectious Anaemia on the Continent**
- **Equine Influenza in the United Kingdom**
- **Focus article: National Equine Health Surveys**

### Important note:

The data presented in this report must be interpreted with caution, as there is likely to be some bias in the way that samples are submitted for laboratory testing. For example they are influenced by factors such as owner attitude or financial constraints or are being conducted for routine screening as well as clinical investigation purposes. Consequently these data do not necessarily reflect true disease frequency within the equine population of Great Britain.



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## **Introduction**

Welcome to the fourth quarterly equine disease surveillance report for 2012 produced by Department of Environment, Food and Rural Affairs (Defra), British Equine Veterinary Association (BEVA) and the Animal Health Trust (AHT). Regular readers will be aware that this report collates equine disease data arising from multiple diagnostic laboratories and veterinary practices throughout the United Kingdom giving a unique insight into equine disease occurrence on a national scale.

In 2012, BEVA decided to revise and relaunch its Code of Practice for the Use of AI booklet as an online-only Guide to the Use of AI in Horse Breeding to clarify its role as a technical manual and to differentiate it from the Horse Race Betting Levy Board (HBLB) Codes of Practice on Equine Disease. The BEVA Guide can be found at: [www.beva.org.uk/useful-info/Vets/Guidance/Reproduction](http://www.beva.org.uk/useful-info/Vets/Guidance/Reproduction).

The HBLB Codes of Practice set out advice on pre-mating testing and handling procedures and guidelines on the control and prevention of those diseases most likely to be of concern to veterinary surgeons and all horse breeders in the UK, Ireland and Europe. The HBLB Codes can be found at: <http://codes.hblb.org.uk>

### **National disease occurrence**

#### **Equine Influenza (EI)**

Equine influenza continues to be of importance within the United Kingdom. In this issue we report on seven outbreaks that occurred during the fourth quarter.

On 12th February 2012 an outbreak of equine influenza was confirmed in Ayrshire, Scotland. Two vaccinated Dutch Warmblood horses that had recently been imported from the Netherlands were affected and showed clinical signs of pyrexia, anorexia, mucopurulent nasal discharge and a cough. Diagnoses were made by qPCR on nasopharyngeal swabs.

The outbreaks have been reported by the new text alert service sponsored by Merial Animal Health, **Tell-Tail**. This free of charge service alerts practitioners to outbreaks of equine influenza in the UK by a text message to the practitioner's mobile phone. If you are an equine veterinary practitioner and would like to sign up for this scheme, please register at the following website <http://www.merial.co.uk>. This service has also been offered to the members of the National Trainers Federation (NTF). If you would like to contact us regarding outbreaks of equine influenza virus or would like to sign up for our sentinel practice scheme, please send a message to: [equiflunet@aht.org.uk](mailto:equiflunet@aht.org.uk) or follow the link to [www.equiflunet.org.uk](http://www.equiflunet.org.uk) for more information on equine influenza.

#### **Equine Herpes Virus-1 (EHV-1)**

Two outbreaks of EHV-1 neurological disease have occurred in the West of England. The first outbreak was confirmed on 15th January 2013 which involved a non-vaccinated Thoroughbred. The affected horse showed mild neurological signs and was stabled on a premises with 11 horses. The second case was confirmed on 31st January 2013. An 11 year old hunter horse and a 10 year old Thoroughbred were affected and showed neurological signs. Diagnoses in both outbreaks were made by PCR of nasopharyngeal



swabs and the affected premises were isolated while epidemiological investigations were conducted.

### Equine Infectious Anaemia (EIA)

Following confirmation of the outbreak of EIA on 3<sup>rd</sup> October 2012 that affected two horses, the testing of in-contact horses and a tracing exercise were carried out.

Twenty five horses from the affected premises in Cornwall were tested twice over a period of 90 days with negative results and restrictions were lifted on 8<sup>th</sup> January 2013. One horse that moved from the affected premises along with four horses from two neighbouring premises also tested negative.

The affected horse from the premises in Cornwall was imported from Belgium in 2008 along with 18 other horses, one of which tested positive to EIA in 2010 and was subsequently euthanased. Another horse from the same consignment was traced to a premises in Devon and tested positive to EIA on 18<sup>th</sup> October 2012. This horse was also euthanased. The 10 remaining horses tested negative.

Two horses moved from the second affected premises in Devon and have been traced. Testing of these horses has been carried out.

In summary, fourteen out of the eighteen horses from the 2008 consignment from Belgium have been traced. Three horses have tested positive, nine, tested negative and two horses have died. Active tracing has now ceased and it has not been possible to trace the four remaining horses.

Restrictions that had been placed on affected and neighbouring premises for the duration of testing have now all been lifted and the outbreak has been declared as resolved.

## **International disease occurrence**

### Eastern Equine Encephalomyelitis (EEE)

The number of equine cases of EEE recorded in the USA in 2012 stands at 213 compared to 65 cases in 2011. The total number of cases recorded in each of the states is as follows: Louisiana (56), Florida (33), Mississippi (32), N. Carolina (20), S. Carolina (14), Alabama (12), Georgia (9), Massachusetts (7), New Jersey (6), Tennessee (5), New Hampshire (4), Wisconsin (4), New York (2), Vermont (2), Texas (2) and single cases for Arkansas, Connecticut, Michigan, Minnesota and Pennsylvania.

### Equine Infectious Anaemia (EIA)

A number of outbreaks of equine infectious anaemia (EIA) have been reported throughout Europe during the fourth quarter.

Following several EIA outbreaks in Germany in the third quarter, all restrictions have been removed from the race course in Cologne after a case of EIA had been confirmed on 1st October 2012.



One outbreak of EIA was confirmed in Liege, Belgium on 10<sup>th</sup> December. One horse was affected that tested positive by Coggins and has been euthanased. Quarantine measures have been implemented along with movement controls.

Further outbreaks of EIA have been reported in Italy. As of 28<sup>th</sup> December Abruzzo, Lazio and Toscana have been the worst affected regions.

One outbreak of EIA was reported in Gard, France on 4<sup>th</sup> October 2012. A positive diagnosis was made via serological testing and the affected horse was euthanased. The outbreak has been epidemiologically linked to others that have been previously reported in Gard in the third quarter.

### Equine Influenza

Three outbreaks of EI have been reported in France. Two outbreaks occurred on 31<sup>st</sup> October 2012. The first outbreak occurred at a riding centre in Seine-et-Marne. The affected horse was a five year old unvaccinated Connemara mare that showed clinical signs of a cough, pyrexia and nasal discharge. Five other horses at the premises have been affected. The second outbreak was reported in Finistère. The affected horse was an unvaccinated five year old Connemara pony that showed clinical signs of a cough, pyrexia and nasal discharge. Six other horses at the premises have been affected. In both outbreaks positive diagnoses were made by PCR of nasal swabs. The third outbreak occurred on 5<sup>th</sup> November 2012 in Mayenne. The affected horse was an unvaccinated Connemara pony that showed clinical signs of a cough, pyrexia and nasal discharge. Eight other horses at the premises have been affected. The outbreaks have been epidemiologically linked as all index cases were bought from a sale in Ireland.

An outbreak of EI was reported in Baden-Württemberg, Germany on 30<sup>th</sup> November 2012. The affected horse was 18 year old, unvaccinated, Friesian gelding that showed clinical signs of pyrexia, a cough and nasal discharge. A positive diagnosis was made by PCR of a nasal swab.

### Hendra Virus

On 2<sup>nd</sup> November 2012 Biosecurity Queensland reported a case of Hendra Virus at a property near to Ingham. The premises has been placed under quarantine and eight horses and three dogs from the affected premises are to be tested.

### West Nile Virus (WNV)

Five outbreaks of WNV have been reported in Croatia. Fourteen horses from the Viroviticko-Podravska region and thirty horses from the Brodsko-Posavska region were subclinically infected and were identified during a serosurveillance exercise.

Nine outbreaks of WNV have been reported in Greece. Four outbreaks were reported in the Ipeiros region on 25<sup>th</sup> September 2012. Three outbreaks involved one horse each and one outbreak involved two horses. Two further outbreaks were reported in the Anatoliki Makedonia kai Thraki region on 27<sup>th</sup> September 2012 and 2<sup>nd</sup> October 2012. Both outbreaks involved one horse each. All of the reported cases were detected during a



serosurveillance exercise and positive diagnoses were made by competitive and IgM capture ELISA.

Eighteen outbreaks of WNV occurred in Italy during 2012, of which six have occurred in Friuli Venezia Giulia, five in Sardinia, five in Veneto and two in Lazio. Seven outbreaks involved horses showing clinical signs and 239 horses have been affected. Twenty nine horses have shown clinical signs of the disease of which seven have shown neurological signs. The overall prevalence of cases stands at 12%, the prevalence of cases with clinical signs is 24% with a mortality prevalence among cases of 29%.



## **Defra/ Animal Health and Veterinary Laboratories Agency (AHVLA) business**

Equine Viral Arteritis was confirmed in a single Andalusian stallion early October 2012 following import from Spain. Infection was confirmed by virus isolation using semen samples. The owner decided to castrate the horse and restrictions were lifted on 29 November. The incident is therefore resolved.

Horses on premises under restrictions due to the EIA cases found in 2012 were all tested with negative results on the Coggins test 90 days after the initial results were taken. All restrictions were lifted and the incident is reported to the OIE as resolved.

## **Focus article**

In this report we are pleased to include a focus article written by Professor Josh Slater from the Royal Veterinary College. The article provides an overview of the Equine Health and Welfare Strategy which has provided surveillance data regarding the health and welfare of the UK horse population.

We reiterate that the views expressed in this focus article are the authors' own and should not be interpreted as official statements of Defra, BEVA or the AHT.

Access to all of the equine disease surveillance reports can be made on a dedicated page on the recently updated Animal Health Trust website at [http://www.aht.org.uk/cms-display/disease\\_surveillance.html](http://www.aht.org.uk/cms-display/disease_surveillance.html) or via the BEVA and Defra websites:

<http://www.beva.org.uk/news-and-events/news>

<http://archive.defra.gov.uk/foodfarm/farmanimal/diseases/vetsurveillance/reports/listing.htm>

We would remind readers and their colleagues that a form is available on the AHT website for registration to receive reports free of charge, via e-mail, on a quarterly basis. The link for this registration form is available via [http://www.aht.org.uk/equine\\_disease\\_registration.html](http://www.aht.org.uk/equine_disease_registration.html).



## Virology Disease Report for the Fourth Quarter of 2012

The results of virological testing for October to December 2012 are summarised in Table 1 and include data relating to Equine Viral Arteritis (EVA), Equine Infectious Anaemia (EIA) and West Nile Virus (WNV) from the Animal Health Veterinary Laboratories Agency (AHVLA), Weybridge. The sample population for the AHVLA is different from that for the other contributing laboratories, as the AHVLA's tests are principally in relation to international trade (EVA and EIA). AHVLA now provides testing for WNV as part of clinical work up of neurological cases on specific request and provided the local regional AHVLA office has been informed.

**Table 1: Diagnostic virology sample throughput and positive results for the fourth quarter 2012**

	Number of Samples Tested	Number Positive	Number of Contributing Laboratories
<b><u>Serological Tests</u></b>			
EVA ELISA	1851	22 <sup>#</sup>	6
EVA VN	321	20 <sup>#</sup>	3
AHVLA EVA VN	1091	32	1
EHV-1/-4 CF test	418	17 <sup>*</sup>	2
EHV-3 VN test	0	0	1
ERV-A/-B CF test	156	8 <sup>*</sup>	1
Influenza HI test	182	6 <sup>*</sup>	1
EIA (Coggins)	223	0	3
EIA ELISA	752	0	5
AHVLA EIA (Coggins)	1959	2	1
AHVLA WNV (PRNT)	5	0 <sup>**</sup>	1
<b><u>Virus Detection</u></b>			
EHV-1/-4 PCR	114	0	2
EHV-2/-5 PCR	30	11	1
Influenza NP ELISA	36	0	2
Influenza Directigen	170	0	2
Influenza PCR	93	9	1
Influenza VI in eggs	9	8	1
AHVLA Influenza PCR	174	0	1
EHV VI	117	5	1
EVA VI/PCR	2	0	1
AHVLA EVA VI/PCR	10	2	1
Rotavirus	16	3	10

ELISA = enzyme-linked immunosorbent assay, VN = virus neutralisation, VLA = Animal Health Veterinary Laboratories Agency, CF = complement fixation,

HI = haemagglutination inhibition, Coggins = agar gel immuno diffusion test, PCR = polymerase chain reaction, NP = nucleoprotein,

VI = virus isolation, EVA = equine viral arteritis, EHV = equine herpes virus, ERV = equine rhinitis virus, EIA = equine infectious anaemia

# = Seropositives include vaccinated stallions, \* = Diagnosed positive on basis of seroconversion between paired sera \*\* = Seropositive due to vaccination





## **Virological Diagnoses for the Fourth Quarter of 2012**

### **Equine Influenza**

Seven outbreaks of equine influenza (EI) were reported in this quarter and confirmed by the Animal Health Trust. Positive diagnoses were made via PCR on a nasopharyngeal swab unless stated otherwise.

On 11<sup>th</sup> October 2012 an unvaccinated five year old gelding from County Durham showed clinical signs of pyrexia, nasal discharge and a cough. The affected group consists of eleven horses, of which three showed clinical signs.

An unvaccinated, Irish Sports Horse gelding in Roxburghshire, Scotland, recently imported from Ireland, was confirmed positive on 6<sup>th</sup> November 2012, The horse had a serous nasal discharge and cough.

On 17<sup>th</sup> November 2012 three separate outbreaks were reported in unvaccinated horses in County Durham, Herefordshire and Worcestershire. In County Durham, two Welsh pony mares were confirmed positive where six unvaccinated animals affected and the outbreak is believed to have started with the recent introduction of a foal bought from a sale showing clinical signs of respiratory disease. In Herefordshire, a 23 year old miniature Shetland pony gelding showed clinical signs of coughing and mucoid nasal discharge. The source of the infection was believed to have originated from a Connemara foal recently imported from Ireland and introduced to the affected yard. In Worcestershire, EI was confirmed at a riding centre where 10 of the 50 unvaccinated animals were reported to be clinically affected, with typical clinical signs. The outbreak is believed to have started with the recent introduction of a two privately purchased gypsy ponies that showed clinical signs of respiratory disease including coughing.

An outbreak of EI was confirmed on 27<sup>th</sup> November 2012 in an unvaccinated, 5 year old, Cob cross, stallion in Wiltshire. The horse showed clinical signs of serous nasal discharge and a cough. A diagnosis was made on the basis of seroconversions to H3N8 influenza virus in a haemagglutination inhibition (HI) test. Eleven other horses on the affected premises have shown clinical signs of the disease.

The other outbreak was confirmed on 28<sup>th</sup> November 2012 at a small livery yard comprising 12-14 horses in Worcestershire. Two unvaccinated Welsh ponies had shown typical clinical signs. The outbreak may have arisen through spread from a contiguous premises with a horse in a neighbouring field being noted recently with signs of respiratory disease, although no obvious link has been made with the EI outbreak reported in Worcestershire on 17<sup>th</sup> November.

The Animal Health Trust has confirmed that the viral isolates are all Clade 2 of the Florida H3N8 sublineage shown in Fig. 1 and are very similar to sequenced viruses isolated from previous outbreaks of EI in the UK.





## **Equine Herpes Virus-1**

Three outbreaks of equine herpes virus-1 (EHV-1) were confirmed and reported in this quarter.

Two outbreaks of EHV-1 respiratory disease occurred in donkeys in the South West of England. The first outbreak occurred on 17<sup>th</sup> October 2012 in which a six month old unvaccinated donkey showed clinical signs of mucopurulent nasal discharge. There were 12 in-contact animals of which four had shown clinical signs of mucopurulent nasal discharge. The second outbreak occurred on 28<sup>th</sup> December 2012 in which three donkeys with clinical signs of nasal discharge and pyrexia.

On 15<sup>th</sup> November 2012 an outbreak of EHV-1 neurological disease was confirmed on a Thoroughbred training yard in south-west of England. Two horses showed clinical signs of pyrexia and four horses developed neurological deficits, three of which were euthanased. All of the affected horses had been routinely vaccinated. Control measures were undertaken in accordance with the HBLB Codes of Practice and the outbreak was considered resolved on 21<sup>st</sup> December 2012 on the basis of final negative laboratory tests among in contact horses. The British Horseracing Authority has lifted restrictions placed on the yard.

## **Equine Herpes Virus -4 (EHV-4)**

Three outbreaks of equine herpes virus-4 (EHV-4) were confirmed in this quarter.

On 14<sup>th</sup> November 2012 a single case of EHV-4 abortion was confirmed in a 16 year old Thoroughbred mare in south-west England. The diagnosis was made by positive PCR for EHV-4 on fresh fetal tissues.

A case of EHV-4 was confirmed on 29<sup>th</sup> November 2012 in an 18 month old Thoroughbred gelding from Wiltshire. The horse showed clinical signs of ocular discharge and a dull demeanour. The horse has been kept in close proximity to two others that have not shown clinical signs of disease.

On 21<sup>st</sup> December 2012 a single case of EHV-4 respiratory disease was confirmed in non-Thoroughbred foal in south-west England. The diagnosis was made by positive PCR for EHV-4 on nasopharyngeal swab.



## Focus Article: National Equine Health Surveys (NEHS) 2010-2012

**Professor Josh Slater MRCVS, Royal Veterinary College, London, UK**

### **Background to NEHS**

The Equine Health and Welfare Strategy for Great Britain (EHWS) launched in March 2007, identified disease surveillance as a vital measure in ensuring the health and welfare of the British horse population. Although the Animal Health Trust's quarterly disease surveillance reports, produced in conjunction with the British Equine Veterinary Association (BEVA) and Defra since 2005, provide comprehensive data on laboratory diagnoses of equine diseases, there has been no syndromic endemic disease surveillance programme in the UK. The National Equine Health Surveys (NEHS) were designed by the Blue Cross and BEVA to address the need for the UK to establish some form of syndromic endemic disease surveillance capacity (exotic disease surveillance is conducted by Defra and the Animal Health and Veterinary Laboratories Agency).

The aim of a national syndromic surveillance programme is to collect sufficient representative data from a broad cross-section of the equid population and with sufficient precision, to allow extrapolation of data to national level, thereby enabling benchmarks for health and disease to be established. NEHS collects data about the health of the UK equine population with key features being that it is an owner-reported surveillance tool that collects syndromic data using a 'snap-shot in time' (cross-sectional) approach, thereby avoiding the need for time consuming review of clinical records.

NEHS data benefits the equine industry and equine welfare by:

- identifying trends in equine health, enabling research into disease prevention, veterinary training and education to be targeted accordingly.
- setting welfare standard benchmarks within the equine industry.
- helping to define codes of practice

### **What NEHS involves**

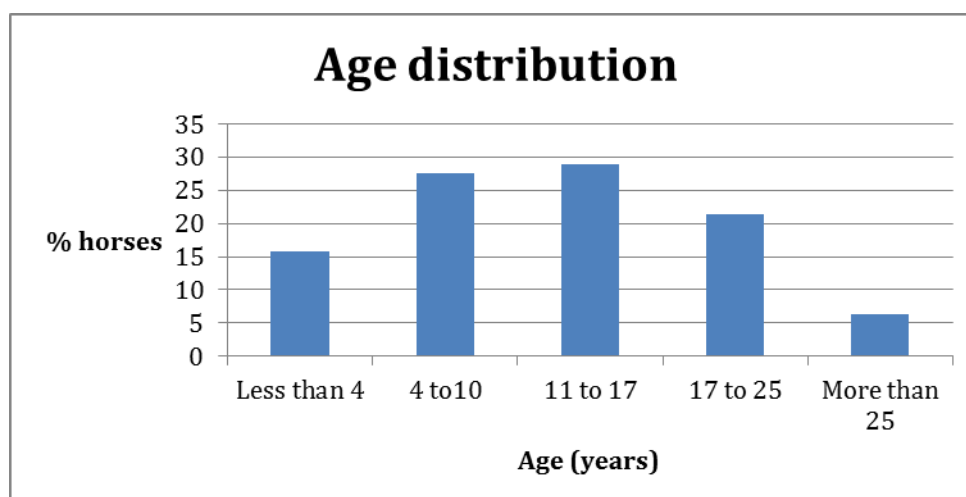
NEHS is based on the principal of national census of the UK horse, pony, donkey and mule population and has so far been run on two separate weeks each year between 2010 and 2012. Owners/keepers report their horse's health status on one day of their choosing in the survey week. The surveys are web based and completed using a tick-box type approach. In all, 28 broad syndrome descriptors e.g. respiratory disease, are subdivided into more precise categories such as infectious versus non infectious respiratory disease. Descriptors were also included for a variety of low prevalence equine diseases including headshaking, neurological disease, and grass sickness. A full list of syndrome descriptors is provided in Table 1.



Syndrome (A-G)	Syndrome (H-L)	Syndrome (M-S)	Syndrome (S-W)
			Skin, mud fever, rain scald
Back problem	Headshaking	Melanoma	
		Neurological disease	
Colic medical	Hyperlipaemia		Skin, Sweet itch
			Stereotypic behaviour
Colic surgery	Lameness, foot	Overweight	
Cushings disease	Lameness, not foot	Respiratory allergic	Dental problem
		Respiratory infectious	
Diarrhoea	Lameness, injury		Tying up
EMS	Lameness, tendon	Respiratory other	Underweight
Eye disease	Laminitis	Sarcoid	Wounds
		Skin, external parasites	
Grass sickness	Liver disease		

**Table 1: Syndrome descriptors for NEHS (alphabetical order)**

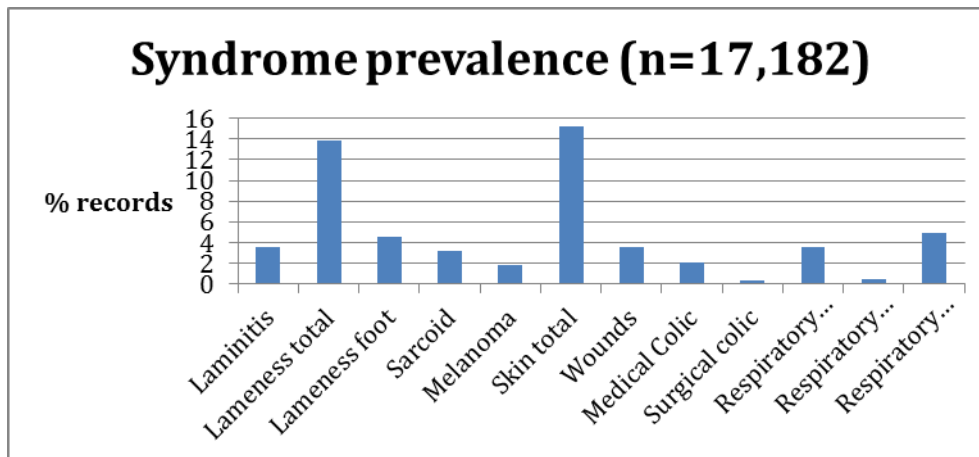
A total of 17,182 returns (animals) were made from the four NEHS pilots from 2,878 respondents. The majority of respondents (80%) were private owners suggesting that NEHS had successfully reached its target audience as overall, data had been collected from a broad cross section of the equine industry allowing meaningful extrapolation to national population. For example, there was a broadly normal distribution of ages of animals included in the surveys (Fig. 1). Overall, 75% of horses/ponies and 39% of donkeys/mules from which returns were received as having one or more of the syndromes surveyed. The results of all four NEHS surveys showed similar trends, suggesting that data collected directly from the owner/keeper was consistent.



**Fig. 1: Age distribution (n = 17, 182 records)**



NEHS 2010-2012 has revealed useful data about disease syndrome prevalence, adding to current understanding and providing new data on syndromes with previously unreported prevalence (Fig 2).



**Fig. 2: Prevalence highlights NEHS 2010-12**

Overall, laminitis had a prevalence of 3.6%, a lower prevalence than estimated in some previously published surveys based on veterinary practitioner opinion. Lameness was one of the most prevalent syndromes (13.8%), with foot lameness recorded in 4.5% of returns and lameness in the proximal limb recorded as the most prevalent cause of lameness. Overall, skin disease was the most prevalent syndrome recorded (15.2% of returns); sarcoids were a prevalent tumour (3.25%) but melanoma was also frequently recorded with an overall prevalence of 1.9%. Wounds were commonly reported (overall prevalence 3.6%). The overall prevalence of colic was 5.6% with a ratio of medical to surgical colic of 7:1, broadly in line with previously published estimates from veterinary practices and referral centres. Respiratory diseases were prevalent and were recorded in 5% of returns. Allergic respiratory disease was more frequently recorded than infectious respiratory disease. Equine Grass Sickness and myopathies (tying up) also had a relatively low prevalence (0.4%). Back problems were commonly recorded (3%). Although difficult to diagnose owner-reported back disease is likely to have higher prevalence than veterinary practitioner reported back disease. Headshaking was recorded in 1.5% of returns suggesting this is a relatively prevalent syndrome. Stereotypies were present in a significant number of returns (4.1%) suggesting that this is an area of health and welfare worthy of further attention. Overall 7.5% of returns recorded animals as overweight, which is at significant variance from reports in the literature. The relatively small number of donkey and mule returns makes interpretation difficult; however, broadly similar trends were seen as in horses and ponies with a greater proportion of returns in donkeys made for equine metabolic syndrome and being overweight. Overall, the NEHS data reinforces the importance of certain syndromes e.g. laminitis, colic and lameness. The data have also revealed other disease syndromes as being of relatively high prevalence e.g. melanoma, head shaking and stereotypies.

### **Future direction for NEHS**

The UK horse industry now has an established owner-reported surveillance platform capable of collecting data from sufficiently large numbers of horses to allow UK benchmarks for health and disease to be established. So far, the Blue Cross has funded and run NEHS, and has successfully encouraged owners to input data from up to 5,500 horses at each survey. However the support of other organisations, industry-wide support,



and buy-in is required to achieve the goals set out in the EHWS. At present the majority of data are from private horse owners and so in order for NEHS be able to provide data representative of the different parts of the UK horse industry, all sectors need to encourage their members to take part.

The vision for the second phase of NEHS is to increase the sample size towards a target of 10% of the UK equine population i.e. approximately 100,000 animals. The proposal is to run NEHS once a year to maximise impact and participation. All raw data will be made available to members of the EHWS group along with a written summary of data from individual sectors. To secure the long-term success of NEHS, it is essential to make 'NEHS Week' a fixture in the calendar of all UK horse owners. This can only be achieved if all sectors of the horse industry buy in to NEHS and support and promote participation to their members. The next NEHS survey is planned for the week of 5<sup>th</sup>-11<sup>th</sup> May 2013. The Blue Cross NEHS team hopes that all readers will get involved and do all they can to promote NEHS through their organisations.



## **Bacteriology Disease Report for the Fourth Quarter 2012**

A summary of the diagnostic bacteriology testing undertaken by different contributing laboratories is presented in Table 2. For contagious equine metritis (CEM) all 29 HBLB approved laboratories in the UK contributed data.

### AHVLA CEMO Data for the period October to December 2012

We are again pleased to include data relating to CEM testing from the Animal Health Veterinary Laboratories Agency (AHVLA), in this quarterly report. The sample population for the AHVLA is different from that for the other contributing laboratories as the AHVLA tests are principally in relation to international trade and/or outbreak investigations.

### Strangles

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 serological ELISA.

**Table 2: Diagnostic bacteriology sample throughput and positive results for the fourth quarter 2012**

	Number of Samples Tested	Number Positive	Number of Contributing Laboratories
<b>CEMO (HBLB)</b>	1382	0	29
<b>CEMO (AHVLA)</b>	2680	0	1
<b><i>Klebsiella pneumoniae</i><sup>#</sup></b>	1382 <sup>1</sup>	2	29
<b><i>Pseudomonas aeruginosa</i></b>	1387 <sup>1</sup>	16	29
<b>Strangles*culture</b>	1950	170	23
<b>Strangles PCR</b>	872	192	2
<b>Strangles ELISA</b>	1459	258 <sup>2</sup>	2
<b>Salmonellosis</b>	442	16	20
<b>MRSA</b>	580	1	10
<b><i>Clostridium perfringens</i></b>	182	3	8
<b><i>Clostridium difficile</i> (toxin by ELISA or immunochromatography)</b>	194	8	10
<b>Borrelia (by ELISA)</b>	36	3	1
<b><i>Rhodococcus equi</i> culture/PCR</b>	1187	9	10
<b><i>Lawsonia intracellularis</i>**culture/PCR</b>	234	70	6

CEMO = contagious equine metritis organism (*Taylorella equigenitalis*); HBLB = HBLB accredited laboratories; <sup>#</sup> =capsule type 1,2,5; AHVLA = AHVLA reference laboratory; \**Streptococcus equi* subsp. *equi*; MRSA = methicillin resistant *Staphylococcus aureus*. \*\* *Lawsonia intracellularis* identified using PCR applied to faeces; <sup>1</sup> reproductive tract samples only; <sup>2</sup> seropositivity may be attributed to disease exposure, vaccination, infection and carrier states.

### AHVLA *Salmonella* results

From the incidents involving strains typed by the AHVLA the serovars/phagetypes reported were *S. Dublin* (1 sample), *S. Oslo* (1), *S. Typhimurium* DT30 (1), *S. Typhimurium* U310 (3) and *S. Typhimurium* U311 (1). The *S. Typhimurium* phage types are normally associated with ducks, pigs and wildlife respectively. *S. Oslo* is a rare finding but has flagella antigens that, in combination with *S. Typhimurium* exposure, could cause cross reactions in the Equine Paratyphoid serum agglutination tests carried out for export purposes. For more information from AHVLA about *Salmonella* in the UK, please visit [http://vla.defra.gov.uk/reports/rep\\_salm\\_rep11.htm](http://vla.defra.gov.uk/reports/rep_salm_rep11.htm).





## Toxic and Parasitic Disease Report for the Fourth Quarter 2012

A summary of diagnostic toxicosis and parasitology testing undertaken by contributing laboratories is presented in Tables 3 and 4 respectively. Results for toxicosis are based on histopathologically confirmed evidence of disease only (where applicable).

**Table 3: Diagnostic toxicosis sample throughput and positive results for the fourth quarter 2012**

	Number of Samples Tested	Number Positive	Number of Contributing Laboratories
Grass Sickness	13	8	4
Hepatic toxicoses	45	5	5
Atypical myopathy	1	1	2*
Tetanus	0	0	1

\*Includes contributing laboratories with no cases submitted

**Table 4: Diagnostic parasitology sample throughput and positive results for the fourth quarter 2012**

	Number of Samples Tested	Number Positive	Number of Contributing Laboratories
<b><u>Endoparasites</u></b>			
Ascarids	2970	70	22
Cyathostomes	1894	393	15
Dictyocaulus	711	4	12
Strongyles	3655	1142	25
Tapeworms (ELISA based testing)	108	32	8
Tapeworms (Faecal exam)	1869	21	14
Trichostrongylus	317	10	2
Strongyloides	2576	406	20
<i>Oxyuris equi</i>	197	9	5
Fasciola	141	9	4
Coccidia	69	0	2
Cryptosporidia	6	0	1
AHVLA <i>Theileria equi</i> (CFT)*	80	1	1
AHVLA <i>Theileria equi</i> (IFAT)**	438	13	1
AHVLA <i>Theileria equi</i> (cELISA)***	522	1	1
AHVLA <i>Babesia caballi</i> (CFT)*	81	0	1
AHVLA <i>Babesia caballi</i> (IFAT)**	438	16	1
AHVLA <i>Babesia caballi</i> (cELISA)***	522	1	1
<b><u>Ectoparasites</u></b>			
Mites	13	0	1
Lice	409	13	18
Ringworm	555	137	23
Dermatophilus	395	38	15
Candida	32	0	2

\*Complement Fixation Test; CFT suspect/positive samples are tested in IFAT test

\*\*Indirect Fluorescent Antibody Test; \*\*\*competitive Enzyme-linked immunosorbent assay; positive cELISA results are not undergoing confirmatory testing



Grass sickness surveillance data ([www.equinegrasssickness.co.uk](http://www.equinegrasssickness.co.uk))

In the fourth quarter (October - December 2012) only five cases were reported, of which three occurred in England and two occurred in Scotland. The median age of the five affected horses was 5.5 years (range 5 – 16 years). Affected horses were Welsh/Welsh crosses (n=2), Thoroughbred cross (n=1), cob (n=1) and highland (n=1); mares/fillies (n=2), geldings (n=2) and the remaining case was reported in a stallion.

Two cases were reported to have acute EGS, one case had subacute EGS and two cases were diagnosed with chronic EGS. Of the two horses with chronic EGS, both were reported to have survived.

A total of 59 equine grass sickness (EGS) cases were reported during 2012.

Diagnostic information was provided for all cases. All three subacute/acute EGS cases had diagnostic confirmation at *post mortem* examination: both acute cases had histopathological examination of ganglia at *post mortem*; one acute case underwent surgery and biopsy with a subsequent post-mortem examination; the subacute case was diagnosed via gross *post mortem* examination only.

One chronic EGS case was diagnosed based on clinical signs alone and the remaining chronic cases underwent surgery without diagnostic confirmation by biopsy examination.

It should be noted that the grass sickness surveillance scheme receives data from a wider population in comparison to the data presented in Table 3 and different diagnostic criteria were used.



## **Report on Post-mortem Examinations for the Fourth Quarter 2012**

### **East Anglia**

*A total of 88 cases were examined including 67 aborted fetuses and four placentas.*

Four placentas were submitted for examination. One placenta revealed umbilical cord torsion and the second placental insufficiency. Examination of the final two placentas submitted were inconclusive.

Of the aborted fetuses examined, there were forty one cases of umbilical cord torsion, three cases of placental insufficiency, three cases of vascular compromise of the umbilical cord, three cases of amniotic fluid inhalation and two cases of placentitis. Single cases of allantoic degeneration, ascending bacterial infection, ischaemia, and fetal suffocation were identified. The cause of abortion could not be identified in eleven cases.

One neurological case was examined which involved a thirteen year old mare which remained recumbent following surgery. The mare was euthanased and post mortem examination identified hypoxia resulting in neurological defects.

Six horses were examined following gastrointestinal disease. Two cases of duodenal perforation with peritonitis were reported along with single cases of right dorsal colitis, chronic grass sickness, sand impaction and oesophageal perforation with pleuritis.

One cardiac case was reported to have suffered an aortic rupture.

Three cases of neoplasia were reported. The first case suffered malignant melanoma with multiple metastases, post mortem examination of the second case was carried out following neurological signs and lymphosarcoma was identified. An undefined tumour was reported in the final case.

Two musculoskeletal cases were examined. One horse suffered a pelvic fracture and atypical myopathy was established as the cause of death in the second case.

Two welfare cases were examined of which verminous arteritis was identified in one case and a cranial mesenteric aneurysm in the second.

Two other cases were reported. The first case comprised a nine month old colt that was found to have septicaemia following a fatal seizure. The second involved a three year old colt that died during recovery from anaesthesia. The cause of death was undetermined.

### **Home Counties**

*Eighteen cases were examined in this quarter.*

One neonate was examined that had died intrapartum from non-infectious causes.

Five neurological cases were reported. Post-mortem examination revealed two cases of cervical vertebral stenotic myelopathy, one case of a brachial plexus injury, one case of stringhalt and one case of ataxia in which the cause was undetermined.



Four cases of gastrointestinal disease were reported. Two horses suffered cyathostomiasis, one horse was found to have a pelvic flexure entrapment and examination of the final case revealed a duodenal perforation presumably caused by a foreign body.

One respiratory case was examined which developed acute laryngeal oedema following tie-back surgery.

Three cardiac cases were reported. One horse suffered an aortic rupture and the second case was found to have a portal vein rupture. The final horse examined died suddenly. No lesions could be found on post mortem examination and a cardiac dysrhythmia was the presumed cause of death.

Two cases of neoplasia were examined. The first case suffered a metastatic ovarian carcinoma and the second, metastatic haemangiosarcoma.

One musculoskeletal case was reported which comprised a horse with laminitis.

One other case was examined in which grass sickness was identified.

### **South West**

*Twelve cases were examined in this quarter.*

Three aborted fetuses were examined. Examination on the first fetus revealed an umbilical cord torsion, the second fetus tested positive to Equine Herpes Virus-4 and the cause of abortion could not be determined in the final case.

One case of neurological disease was reported. Post mortem examination revealed a cervical vertebral stenotic myelopathy C5-C6. Gastric ulceration and multiple intestinal parasitism was also noted.

Six gastrointestinal cases were reported. Three of the cases were donkeys of which two suffered a pelvic flexure impaction and one pancreatitis. Three horses were examined. One horse suffered necrotising and haemorrhagic colitis, a second horse was found to have segmental ischaemic necrosis of small intestine and diffuse thickening of the small intestine was identified in the final case.

One musculoskeletal case was examined which comprised a donkey with chronic laminitis and arthritis.

One welfare case was examined which was found to have biliary hyperplasia.

### **Northern England**

*Four cases were examined in this quarter.*

Three gastrointestinal cases were examined. One horse was found to have a left dorsal displaced colon and peritonitis and the second case comprised a foal that had suffered colic. The final case involved a horse with oesophageal obstruction.



One musculoskeletal case was reported and post-mortem examination revealed a condylar fracture of the third metatarsus.

### **West Midlands**

*No cases were reported in this quarter.*

### **Scotland**

*Eight cases were reported in this quarter.*

Three gastrointestinal cases were examined this quarter. A colonic displacement and a gastric rupture were identified in the first case, the second case suffered a colonic displacement and the final case comprised a foal with eosinophilic enteritis.

Three musculoskeletal cases were reported, all of which suffered laminitis.

Two welfare cases were identified. The first case was found to have *Pasteurella septicaemia* and disseminated intravascular coagulopathy. A ragwort toxicity and laminitis were identified in the second case.

### **Northern Ireland**

*Five post-mortem examinations were carried out in this quarter.*

Two aborted fetuses were examined this quarter and in both cases the cause of the abortion was unknown. The first fetus had been dead for a few days prior to the abortion and no abnormalities were noted at necropsy or on histology. Streptococcal species were recovered from multiple tissues but their significance was uncertain and the fetus tested negative for leptospira and EHV-1. Examination of the second fetus revealed no abnormalities and no significant infectious agents were isolated.

Two cases of gastrointestinal disease were examined. The first case was a 19 year old gelding that was euthanased following an episode of colic. Post mortem examination revealed a gastric rupture along the greater curvature of the stomach. The second case involved a one year old donkey that suffered from ill –thrift and was euthanased due to weakness and inability to rise. Three other donkeys in the same group were also reported to be suffering from similar clinical signs. Large numbers of larval nematodes were found on histological examination of the colonic mucosa.

One other case was examined this quarter. A five-year old mare in good condition was found dead with no premonitory signs. Post-mortem examination revealed extensive subcutaneous haemorrhages suggestive of recumbency and struggling prior to death. A cause of death was not established.



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**We would welcome feedback including contributions on focus articles  
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