

2015 Codes of Practice

extract for contagious
equine metritis (cem)



These Codes of Practice are published by:

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The full Codes of Practice and details of Approved Laboratories are available online at <http://codes.hblb.org.uk/>.

These Codes do not imply any liability by the Horserace Betting Levy Board, the Veterinary Advisory Committee nor its Sub-Committees in the implementation of, nor responsibility for enforcement of, the Codes.

Acknowledgements

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Introduction

This is an extract from the Codes of Practice 2013 booklet; it sets out voluntary recommendations to help breeders, in conjunction with their veterinary surgeons, to prevent and control **contagious equine metritis (CEM)**.

It is vital that owners/managers of breeding stock maintain vigilance and follow the Codes, in conjunction with the attending veterinary surgeon, at all times. This extract of the Codes of Practice set out minimum recommendations for disease prevention and control. Breeders should implement additional precautions whenever appropriate to their circumstances. **Mare owners are strongly advised to check whether the stallion stud and/or boarding stud to which their mare is to be sent, or any local breeders' association for that area such as the Newmarket Stud Farmers Association (NSFA), has any requirements additional to those included in these Codes.**

The recommendations within this extract of the Codes of Practice are common to France, Germany, Ireland, Italy and the United Kingdom. CEM can have devastating consequences; it compromises horse and pony welfare, disrupts breeding activity, causes economic loss to mare and stallion owners and is costly to deal with.

The disease is highly contagious and uncontrolled infection in just one horse or pony can transmit easily to others, potentially escalating to local and national outbreaks.

CEM is notifiable by law and, ultimately, outbreaks on any scale can lead to Britain losing its horse export status. To avoid these consequences, breeders should aim to prevent disease, and control its spread if a case is suspected or occurs, by implementing the recommendations in this Codes of Practice extract. If a case occurs, it is important to inform owners of other horses that are at risk of infection through contact with the affected horse/premises so that they can treat their horse and implement measures to stop any further spread of disease to other horses.

Throughout this extract, the term:

- 'Horse' includes mares and stallions of any breed of horse or pony.
- 'Stallion' includes stallions of any breed to be used for natural mating, teasing or semen collection for AI.
- 'Breeding activity' includes natural mating, teasing and collection and insemination of semen.

CODE OF PRACTICE
FOR CONTAGIOUS
EQUINE METRITIS,
KLEBSIELLA
PNEUMONIAE AND
PSEUDOMONAS
AERUGINOSA

CODE OF PRACTICE FOR CEM, *KLEBSIELLA PNEUMONIAE* AND *PSEUDOMONAS AERUGINOSA*

This Code of Practice covers disease caused by three species of bacteria:

- *Taylorella equigenitalis* (the contagious equine metritis organism - CEMO)

Contagious equine metritis (CEM), caused by this organism, occurs widely in the non-Thoroughbred population, and to a limited extent in Thoroughbreds, in mainland Europe.

- *Klebsiella pneumoniae* (*K. pneumoniae*)

There are many capsule types of *K. pneumoniae*, most of which do not cause venereal disease. However, types 1, 2 and 5 may be sexually transmitted. Therefore, when *K. pneumoniae* is identified from breeding stock, tests to determine the capsule type(s) present must be undertaken.

- *Pseudomonas aeruginosa* (*P. aeruginosa*)

Not all strains of *P. aeruginosa* cause venereal disease but there is no reliable method to differentiate between the strains. Therefore, all isolates should be considered as potential venereal pathogens.

Both *K. pneumoniae* and *P. aeruginosa* occur sporadically within Europe.

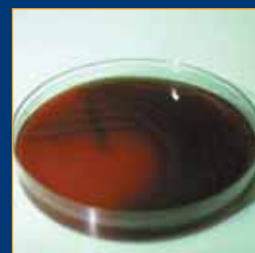
Notification Procedures

Contagious equine metritis

In the UK, isolation of the CEMO is **notifiable by law**. This is a statutory requirement under the Infectious Diseases of Horses Order 1987 and any positive samples must be reported by the testing laboratory to the Department for Environment, Food and Rural Affairs (Defra) via the local Field Service office of the Animal & Plant Health Agency (APHA). A list of APHA regional contact telephone numbers appears in Appendix 1 and also on Defra's website at <https://www.gov.uk/government/organisations/animal-and-plant-health-agency/about/access-and-opening#field-services>. In confirmed cases, Defra asks, initially, that the breeders and veterinary surgeons involved comply with this Code of Practice as a means of controlling the spread of the disease.

If an assessment by Defra concludes that voluntary compliance is not sufficient to control the disease, they may serve Statutory Notices on the affected premises, declaring them an infected place and imposing mandatory requirements, including:

- taking samples or obtaining information to establish the source and extent of disease;





- prohibiting or controlling movement of any horse, carcass or other item;
- prohibiting the breeding activities of any implicated horses;
- disinfection or destruction of infected articles or materials;
- cleansing and disinfection of premises and vehicles.

In the event of statutory powers being invoked, Defra would nominate the laboratories to undertake the testing of all samples required by the subsequent investigation.

Failure to comply with Statutory Notices is an offence under the Animal Health Act 1981 and may lead to prosecution.

It is advisable for owners, or a person authorised to act on their behalf, to inform the national breeders' association if CEMO is isolated.

Klebsiella pneumoniae* and *Pseudomonas aeruginosa

In the UK, isolation of *K. pneumoniae* or *P. aeruginosa* is not notifiable by law. However, if infection occurs in stallions, it is advisable for the owner, or a person authorised to act on their behalf, to inform the national breeders' association.

Clinical Signs

Mares

The severity of disease in mares varies. There are two states of infection:

- the active state in which the main outward sign is a vulval discharge which may range from very mild to extremely profuse;
- the carrier state in which there are no outward signs of infection. However, the mare remains capable of transmitting infection because the bacteria are established on the surface of the clitoris, the clitoral fossa and sinuses and, in the case of *K. pneumoniae* and *P. aeruginosa*, sometimes in the urethra and bladder.

Stallions

Remember: 'stallion' means mating stallions, teasers and stallions used for AI

- Infected stallions do not usually show clinical signs of infection but the bacteria are present on their penis, sheath and, in the case of *K. pneumoniae* and *P. aeruginosa*, sometimes in the urethra and bladder. These stallions can infect mares during mating, teasing or AI.
- Occasionally, the bacteria may invade the stallion's sex glands, causing pus and bacteria to contaminate the semen.

Transmission of Disease

Infection can be transmitted between horses in any of the following ways:

- direct transmission during natural mating;
- direct transmission during teasing. An infected teaser can transmit disease to mares through contact with his genitalia;
- indirect transmission during teasing. A teaser can transmit infected vulval discharge between mares through genital or naso-genital contact;
- transmission to mares if semen used for AI comes from infected stallions or has been contaminated with the bacteria during semen collection or processing;
- indirect transmission via the hands and equipment of staff or veterinary surgeons who have handled the tail or genitalia of an infected horse.

Prevention

The most important means of preventing infection are:

- establishing freedom from infection before commencing breeding activities;
- checking that horses remain free from infection during breeding activities;
- exercising strict hygienic measures during breeding activities.

No vaccines against these bacterial diseases are available.

Freedom from infection

Establishing freedom from infection before, and checking that horses remain free from infection during, breeding activities involves a veterinary surgeon taking samples ('swabs') from the genitalia of mares and stallions for testing ('culturing') in a laboratory. The laboratory will test for the presence of the CEMO, *K. pneumoniae* and *P. aeruginosa*. If the results are negative, the horse is free from infection and breeding activities may take place. If the results are positive, the horse is infected and must be treated, re-tested and cleared. The horse must not be used for breeding activities at this time. If a swab is positive for the CEMO, the Notification Procedures on page 7 also apply, and an investigation of the source and extent of the disease will be undertaken.

No horse should be used for breeding activities until or unless all swab results are available and negative.



Note
Also see the
AI Guidelines
on page 75

Different types of swab and culture are recommended for different circumstances in this Code of Practice. For further information on the types of swab, taking and submission of swabs, culture and return of results, see 'Diagnosis' on page 14.

Recommendations for establishing freedom from infection in mares and stallions before breeding activities commence, and for checking that horses remain free from infection during breeding activities, are on pages 10–17.

Hygiene measures

Staff should be made aware of the risk of direct and indirect transmission of infection. They should always wear disposable gloves when handling the tail or genitalia and change gloves between each horse. Separate sterile and, where appropriate, disposable equipment and clean water should always be used for each horse.

Biosecurity protocols specific to AI are described in further detail in the Guidelines on AI.

Prevention recommendations

These are minimum recommendations. Mare owners should check whether the stallion stud, boarding stud or local breeders' association (eg NSFA) has any additional requirements.

Mares

After 1st January in any year, and before a mare is mated/teased/inseminated, the following should be undertaken:

- ascertain whether the mare is 'high risk' or 'low risk' (see Appendix 2);
- complete a Mare Certificate (see Appendix 3) and send it to the stallion owner/manager;
- arrange for a veterinary surgeon to take the appropriate swabs (see protocol below and on page 11) and send them to a laboratory for testing;
- distribute the resulting Laboratory Certificates (see Appendix 4) in accordance with the protocol on page 11.

If the results are negative, the mare is free from infection and breeding activities may commence. If they are positive, she is infected and must not be mated, teased or inseminated until she has been treated and cleared under the direction of the attending veterinary surgeon, and, in the case of the CEMO, in accordance with any Defra requirements.

Swabbing protocol for mares temporarily or permanently resident at stallion stud (pre-breeding)

Mare status	Type of swab	When/where taken	Culture/PCR
Low risk	Clitoral	Home premises or stallion stud	Aerobic and microaerophilic
	Endometrial	During oestrus at stallion stud	Aerobic
High risk	Clitoral	Before arrival at stallion stud	Aerobic and microaerophilic
	Clitoral	On arrival at stallion stud	Aerobic and microaerophilic
	Endometrial	During oestrus at stallion stud	Aerobic and microaerophilic



References to swab testing means appropriate testing by culture and/or PCR, where a laboratory is approved by HBLB for this method

Swabbing protocol for walking-in mares (pre-breeding) or for mares being presented for AI (considered as ‘low risk’)

The following applies to mares which will not be resident on the same premises as the stallion, but will be ‘walked in’, either from their home premises or from a boarding stud. If ‘high risk’ walking-in mares are going to a boarding stud, that stud should either be under the control of, or meet full approval of, the stallion owner/manager. The veterinary surgeons involved should liaise closely to ensure adherence to the Code of Practice and to arrange any additional precautions that may be required.

Mare status	Type of swab	When/where taken	Culture/PCR
Low risk	Clitoral	Home premises or boarding stud	Aerobic and microaerophilic
	Endometrial	During oestrus at home premises or boarding stud	Aerobic
High risk	2 x clitoral	At least seven days apart at home premises or boarding stud	Aerobic and microaerophilic
	Endometrial	During oestrus at home premises or boarding stud	Aerobic and microaerophilic

Protocol for distribution of Laboratory Certificates

Laboratory Certificates relating to pre-breeding swabs taken from mares at the home premises should be sent in advance to the stallion owner/manager and, where appropriate, to the boarding stud. Certificates relating to pre-breeding swabs taken from mares at boarding studs should be sent in advance to the stallion owner/manager.

Before a mare is mated, the mare owner/manager is advised to request a Laboratory Certificate confirming the stallion’s disease free status in the current breeding season.

Mare owners/managers should not accept semen for AI without obtaining evidence that the donor stallion was free from infection when the semen was collected. In the UK, this evidence would be provided by a Laboratory Certificate confirming the stallion’s disease free status in the current breeding season. When importing semen, it should be accompanied by documentary evidence of freedom from infection with all three bacteria and the original import certificate.

If the mare does not conceive on first (or subsequent) matings, and her return to oestrus is normal, she should be swabbed again before being re-mated to check that she is not infected as a result of the previous mating, according to the protocol on page 12.

The mare may be re-mated on the basis of negative swab results. If the results are positive, she is infected and must not be mated, teased or inseminated until she has been treated and cleared under the direction of the attending veterinary surgeon, and, in the case of the CEMO, in accordance with any Defra requirements.

References to swab testing means appropriate testing by culture and/or PCR, where a laboratory is approved by HBLB for this method

Swabbing protocol for mares temporarily or permanently resident at stallion stud (repeat matings)

Mare status	Type of swab	When/where taken	Culture/PCR
Low risk	Endometrial	During oestrus at stallion stud	Aerobic
High risk	Endometrial	During oestrus at stallion stud	Aerobic and microaerophilic

Swabbing protocol for walking-in mares (repeat matings)

The following swab recommendations apply to mares which will not be resident on the same premises as the stallion, but will be 'walked in', either from their home premises or from a boarding stud. If 'high risk' walking-in mares are going to a boarding stud, it should either be under the control of, or meet full approval of, the stallion owner/manager. The veterinary surgeons involved should liaise closely to ensure adherence to the Code of Practice and to arrange any additional precautions that may be required.

Mare status	Type of swab	When/where taken	Culture/PCR
Low risk	Endometrial	During oestrus at home premises or boarding stud	Aerobic
High risk	Endometrial	During oestrus at home premises or boarding stud	Aerobic and microaerophilic

Protocol for distribution of Laboratory Certificates

Laboratory Certificates relating to repeat swabs taken from mares at the home premises should be sent in advance to the stallion owner/manager and, where appropriate, to the boarding stud. Certificates relating to repeat swabs taken from mares at boarding studs should be sent in advance to the stallion owner/manager.

If any mare returns to oestrus at an unusual (especially shorter than normal) time, this may be because she is infected. Repeat clitoral and endometrial swabs should be taken and cultured under aerobic and microaerophilic conditions.

If any mare changes premises, or stallions, between matings, repeat clitoral and endometrial swabs should be taken at least seven days after mating by the original stallion and cultured under aerobic and microaerophilic conditions.

These are minimum recommendations. Mare owners should check whether the stallion stud, boarding stud or local breeders' association (eg NSFA) has any additional requirements.

References to swab testing means appropriate testing by culture and/or PCR, where a laboratory is approved by HBLB for this method

Stallions

After 1st January in any year and before a stallion is used for mating/teasing/semen collection, the owner/manager should:

- ascertain whether the stallion is 'high risk' or 'low risk' (see Appendix 2);
- arrange for swabs to be taken by a veterinary surgeon in accordance with the protocol below;
- ensure that a Laboratory Certificate (see Appendix 4) confirming the mare's disease free status in the current breeding season, and a current Mare Certificate (see Appendix 3) are received for each mare to be mated, teased or inseminated at the stallion's premises;
- ensure that a Laboratory Certificate confirming the stallion's disease free status in the current breeding season is made available to mare owners/managers.

Protocol for swabbing (pre-breeding)

After 1st January and before any breeding activity is commenced, two sets of swabs (see definition on page 14) should be taken from all stallions at an interval of no less than seven days and cultured aerobically and microaerophilically.

If the results of swab testing are negative, the stallion is free from infection and breeding activities may commence. If they are positive, he is infected and must not be used for mating, teasing or semen collection until he has been treated and cleared under the direction of the attending veterinary surgeon and, in the case of the CEMO, in accordance with any Defra requirements.

The following should be carried out during the breeding season to check that the stallion has not become infected:

'High risk' stallions and any other stallion standing on a stud for the first time warrant additional precautions. The first four mares mated with them should be screened for the CEMO, *K. pneumoniae* (capsule types 1, 2 and 5) and *P. aeruginosa* by taking a clitoral swab two days after mating. If the mare subsequently returns to oestrus, an endometrial swab should be taken at that time. These swabs should always be tested aerobically and microaerophilically.

In stallions, bacterial growth of the CEMO is generally more easily recoverable after mating. Swabbing of all stallions after their first few matings in any season should therefore be considered in conjunction with the attending veterinary surgeon. In addition, mid-season swabbing should be considered for all stallions and teasers. These swabs should always be tested by aerobic and microphilic culture and/or by PCR testing.

Remember: 'stallion' means mating stallions, teasers and stallions used for AI

References to swab testing means appropriate testing by culture and/or PCR, where a laboratory is approved by HBLB for this method

Diagnosis

Laboratory diagnosis is essential to confirm the presence or absence of the CEMO, *K. pneumoniae* and *P. aeruginosa* in swabs taken from mares and stallions.

Types of swab

Mares

There are two types of swab:

Clitoral swab: taken from two sites; the clitoral fossa and the clitoral sinuses, at any point during the reproduction cycle to demonstrate whether these sites are free from infection. In the case of pregnant mares who have had difficult foalings requiring veterinary attention and antibiotic treatments, additional clitoral swabs should be taken after foaling and more than 7 days after antibiotic treatment has finished, in addition to routine endometrial swabs, in order to rule out acquired *Pseudomonas aeruginosa* and *Klebsiella pneumoniae* infections. Providing the pre-foaling clitoral swab was certified negative for *Taylorella equigenitalis*, the additional post-foaling clitoral swab may be tested by aerobic culture only, or by PCR.

Endometrial swab: taken during oestrus from the lining of the uterus via the open cervix to demonstrate whether the uterus is free from infection.

Mare swabs taken for disease prevention purposes should be tested according to the recommendations on pages 10–12.

Note: These are minimum recommendations. Mare owners should check whether the stallion stud, boarding stud or local breeders' association (eg NSFA) has any additional requirements.

Stallions

Swabs should be taken from three sites; the urethra, urethral fossa and penile sheath, plus pre-ejaculatory fluid when possible. Separate swabs should be used for each site and tested by aerobic and microaerophilic culture and/or by PCR, in all circumstances.

Further information on how to collect equine genital swabs in stud practice for the prevention of venereal diseases, as recommended by the Codes of Practice, is available online at <http://codes.hblb.org.uk/index.php/page/40>

Taking swabs

All swabs should be taken by a veterinary surgeon, who should:

- submerge the swabs in Amies Charcoal Transport Medium (which must be within the expiry date) to protect them from the damaging effects of light, which will readily kill any CEMO, *K. pneumoniae* or *P. aeruginosa* present;
- label them clearly to show the date and time they were taken, the horse's name and the site of swabbing;

References to swab testing means appropriate testing by culture and/or PCR, where a laboratory is approved by HBLB for this method



- indicate clearly whether aerobic, microaerophilic or both cultures, and/or PCR are required;
- submit them to an Approved Laboratory for testing.

A list of laboratories in Britain approved by the Horserace Betting Levy Board for the purposes of testing for the CEMO, *K. pneumoniae* and *P. aeruginosa* is available from <http://codes.hblb.org.uk/index.php/page/index/139>.

Submitting swabs to Approved Laboratories

The Approved Laboratories must set up swabs for conventional microaerophilic culture for CEMO within 48 hours of them being taken from the horse as this organism is short lived, even in bacteriological transport medium. Veterinary surgeons submitting swabs by routine postal services are, therefore, advised not to take swabs on Fridays, Saturdays or Sundays as they may not arrive in time. If weekend or bank holiday swabbing is unavoidable, the veterinary surgeon should ensure that the laboratory is open and able to commence cultures within the 48 hours. In this event, a suitable courier service should be used to deliver the swabs. If a swab does not arrive in time, the laboratory should reject it and advise the veterinary surgeon to repeat the swabbing.

However, time constraints do not apply to swabs submitted to laboratories that are approved to run PCR tests for CEMO as specific DNA from non-viable organisms can be detected for long periods. Experience suggests that swabs cultured aerobically for *K. pneumoniae* and *P. aeruginosa* are not so time sensitive and these organisms have a long life in bacteriological transport medium, as they do in the environment.

Laboratory culture of swabs

Laboratories can culture swabs in two ways: aerobically and microaerophilically (see Glossary, Appendix 10). The results of culture will be returned by the laboratory on an official Laboratory Certificate. When planning the timing of breeding activities, breeders and veterinary surgeons should be aware that the results of microaerophilic culture results will not be available for at least seven days and aerobic culture results will not be available for 48 hours (to exclude the possibility of slow-growing *P. aeruginosa* organisms).

Other laboratory tests

Polymerase chain reaction (PCR) testing of swabs for the CEMO, *Klebsiella pneumoniae* and *Pseudomonas aeruginosa* is now validated for industry screening purposes. PCR testing is not recognised for import/export testing in the UK. Breeders and veterinary surgeons may find PCR test results helpful, as they may be available within 24 hours of arrival at a laboratory that is able to undertake PCR testing. Positive PCR results will need to be further investigated by conventional culture to help determine their significance and, in the case of *Klebsiella pneumoniae*, for capsule typing. Positive PCR results for CEMO must be reported to Defra. The immunofluorescence test (IFT) for CEMO may be used in addition to culture, although this test is only available in France at present.

References to swab testing means appropriate testing by culture and/or PCR, where a laboratory is approved by HBLB for this method

Note
The term 'at risk' relates to any horse which may have become infected as a result of direct or indirect transmission of the disease.

Control of Infection

If infection with any of the three organisms is suspected in any mare, stallion or teaser on the basis of clinical signs, all breeding activities must cease immediately. The affected horse(s) should be isolated and swabbed by the attending veterinary surgeon.

If the CEMO, *K. pneumoniae* (capsule types 1, 2 or 5) or *P. aeruginosa* is subsequently isolated from any mare, stallion or teaser:

1. Stop mating, teasing and collection and insemination of semen immediately;
2. Seek veterinary advice immediately;
3. Isolate and treat the infected horse(s) as advised by the attending veterinary surgeon. In the case of the CEMO, the laboratory will have notified Defra, who may give directions which must be followed;
4. Arrange swabbing of any at risk horses, as advised by the attending veterinary surgeon or by Defra;
5. Disinfect all equipment used for breeding procedures.
6. Inform all owners of mares booked to the stallion, including any which have already left the premises;
7. Inform people to whom semen from the stallion has been sent;
8. Inform the national breeders' association;
9. Arrange for one straw from every ejaculate of stored semen from infected and at risk stallions to be tested by a laboratory. If a straw from any ejaculate is infected, all straws from that ejaculate should be destroyed;
10. Any at risk pregnant mare must be foaled in isolation. The placenta must be incinerated. Foals born to these mares should be swabbed three times, at intervals of not less than seven days, before three months of age. These swabs should all be tested by aerobic and microaerophilic culture and/or by PCR;
 - Filly foals: swab the clitoral fossa.
 - Colt foals: swab inside the penile sheath and around the tip of the penis.
11. Do not resume any breeding activity until freedom from disease has been confirmed in all infected horses (see below). The approval of the attending veterinary surgeon or, in the case of CEMO, of the APHA, should be obtained before resumption of breeding activity.

Remember: in any suspected or confirmed disease situation, the implementation of strict hygienic measures is essential.

In the case of the CEMO, if Defra do not believe voluntary compliance is sufficient to control infection, they will impose statutory requirements.



Treatment

Any necessary treatment will be determined by the attending veterinary surgeon.

Confirmation of Freedom from Disease

Following infection with any of the three bacteria, breeding activities should only be resumed with approval from the attending veterinary surgeon, and in the case of the CEMO, the APHA, who must be satisfied that infected and in-contact horses have been investigated, treated as appropriate and subsequently cleared on the basis of negative swabs.

The first post treatment swabs should be taken seven or more days after the treatment has ended. All post treatment swabs should be tested by aerobic and microaerophilic culture and/or by PCR. All positive isolates of *K. pneumoniae* should be capsule typed where they are identified on post-treatment samples, irrespective of whether pathogenic *K. pneumoniae* was isolated prior to treatment. All *Klebsiella pneumoniae* PCR results will need culture tests also performed to provide bacteria for capsule typing.

Mares

Three clitoral swabs should be taken at intervals of at least seven days and three endometrial swabs should be taken during the next three oestrous periods. All results must be confirmed as negative before any breeding activities resume. If any result is positive, further investigation should be undertaken in conjunction with the attending veterinary surgeon.

Stallions

Three sets of penile swabs should be taken at intervals of at least seven days and negative results confirmed. Thereafter, the first three mares mated or inseminated by the stallion should have clitoral swabs taken three times at intervals of at least seven days, starting two days after mating or insemination. If any of these swab results are positive, breeding activities should cease pending further investigation in conjunction with the attending veterinary surgeon.

Export Certification

Swabs taken for examination for the CEMO from horses in the United Kingdom for the purpose of official export health certification must be sent to the designated laboratory within the APHA. This is the APHA Regional Laboratory, Bury St Edmunds. In the case of horses that are to be exported from Northern Ireland, swabs should be sent to the Veterinary Science Division Laboratory, Belfast.

APPENDIX 1

Contact information for reporting notifiable disease suspects to Animal & Plant Health Agency (APHA) Field Offices in England, Scotland and Wales

There are statutory requirements that suspicion of the notifiable diseases of CEM, EVA, EIA and dourine must be reported immediately to the appropriate Field Service office of the Animal & Plant Health Agency (APHA). The RVLs are based at the Field Offices, as listed below.

When you telephone your local Field office, tell the switchboard that you are telephoning to report a suspect case of notifiable disease, and ask to speak to the Duty Vet. The Duty Vet is trained to handle reports of notifiable disease and will discuss the case with you. Many reports can be ruled out based on information gathered during this initial telephone conversation.

However, if a notifiable disease cannot be ruled out, the Duty Vet will arrange for a Veterinary Officer to visit the premises, usually within two hours. If considered to be appropriate, restrictions preventing movements on or off the premises, may be served verbally over the phone at this time.

When the Veterinary Officer visits, they will examine the affected animal, together with the other animals on the premises. Disease is often ruled out at this point and restrictions are lifted immediately. If disease cannot be ruled out by this examination and inquiry, then samples may be taken and sent to a laboratory for testing. In this case, restrictions will remain in place until negative laboratory results are obtained – this is often in less than 24 hours. If negative results are obtained then restrictions are lifted immediately.

England: Midlands Region

Telephone: 01162 787451

Email: AHROMidlands@ahvla.gsi.gov.uk

The Midlands region includes Birmingham District, City of Derby, City of Leicester, City of Nottingham, City of Stoke-on-Trent, Coventry District, Derbyshire, Dudley District, Herefordshire, Leicestershire, Lincolnshire, Northamptonshire, Nottinghamshire, Rutland, Trent, Sandwell District, Shropshire, Solihull District, Staffordshire, Telford & Wrekin, Walsall District, Warwickshire, Wolverhampton District, Worcestershire.

North East Region

Telephone: 0300 303 8269

Email: EnglandNorth@ahvla.gsi.gov.uk

North West Region

Telephone: 0300 303 1324

Email: EnglandNorth@ahvla.gsi.gov.uk

South East Region

Telephone: 01284 778150

Email: AHROSouthEast@ahvla.gsi.gov.uk

The South East region covers Bedford, Bracknell Forest, Brighton & Hove, Buckinghamshire, Cambridgeshire, Central Bedfordshire, East Sussex, Essex, Greater London, Hampshire, Hertfordshire, Isle of Wight, Kent, Luton, Medway, Milton Keynes, Norfolk, Oxfordshire, Peterborough, Portsmouth, Reading, Slough, Southampton, Southend-on-Sea, Suffolk, Surrey, Thurrock, West Berkshire, West Sussex, Windsor & Maidenhead, Wokingham.

South West Region

Telephone: 01392 266373

Email: APHASWEngland@apha.gsi.gov.uk

The South West region covers Bath & North East Somerset, Bournemouth and Poole, City of Bristol, City of Plymouth, Cornwall, Devon, Dorset, Gloucestershire, Isles of Scilly, North Somerset, Somerset, South Gloucestershire, Swindon, Torbay, Wiltshire.

Yorkshire & The Humber Region

Telephone: 0300 303 1324

Email: EnglandNorth@ahvla.gsi.gov.uk

Wales:

Telephone: 0300 303 8268

Email: APHA.CymruWales@apha.gsi.gov.uk

Scotland: Ayr

Telephone: 01292 291350

Email: AHVLA.Scotland@ahvla.gsi.gov.uk

Scotland: Galashiels

Telephone: 01896 758806

Email: AHVLA.Scotland@ahvla.gsi.gov.uk

Scotland: Perth

Telephone: 01738 602211

Email: AHVLA.Scotland@ahvla.gsi.gov.uk

Scotland: Inverness

Telephone: 01463 728800

Email: AHVLA.Scotland@ahvla.gsi.gov.uk

Scotland: Inverurie

Telephone: 01467 626610

Email: AHVLA.Scotland@ahvla.gsi.gov.uk

For further contact information, see

<https://www.gov.uk/government/organisations/animal-and-plant-health-agency/about/access-and-opening>

APPENDIX 2

Definition of 'high risk' and 'low risk' mares and stallions

'High risk' mares are:

1. Mares from which the CEMO, *K. pneumoniae* (capsule types 1, 2 or 5) or *P. aeruginosa* has been isolated. The 'high risk' status will remain until three sets of negative swabs have been taken at three different oestrous periods in each of two years;
2. Mares which have visited any premises on which the CEMO has been isolated within the previous 12 months;
3. Mares arriving from France, Germany, Ireland, Italy and the UK which have been mated during the last breeding season with stallions resident outside these countries;
4. All mares who have been in countries other than France, Germany, Ireland, Italy and the UK within the last 12 months.

'Low risk' mares are any mares not defined as 'high risk'.

'High risk' stallions are:

1. Stallions which have not previously been used for breeding purposes;
2. Stallions from which the CEMO, *K. pneumoniae* (capsule types 1, 2 or 5) or *P. aeruginosa* has been isolated. The 'high risk' status will remain until treatment has been undertaken and required swab results (see page 17, 'Confirmation of freedom from disease') are negative;
3. Stallions which have, in the last 12 months, been at any premises on which the CEMO, *K. pneumoniae* (capsule types 1, 2 or 5) or *P. aeruginosa* has been isolated;
4. Stallions which have mated a mare which has not been swabbed negative in accordance with the Code of Practice.

'Low risk' stallions are any stallions not defined as 'high risk'.

APPENDIX 3



CONTAGIOUS EQUINE METRITIS AND OTHER EQUINE BACTERIAL VENEREAL DISEASES 2015 SEASON MARE CERTIFICATE

This certificate must be completed by the mare owner/manager and be lodged with the prospective stallion owner/manager before the mare's arrival.

Name of mare _____

Passport number (where available) _____

Name and address of owner _____

Address of premises where mare currently resides _____

In 2012 the above mare boarded* at _____ stud
whilst visiting _____ (stallion) result _____

In 2013 the above mare boarded* at _____ stud
whilst visiting _____ (stallion) result _____

In 2014 the above mare boarded* at _____ stud
whilst visiting _____ (stallion) result _____

Additional information including the results of positive bacteriological examinations for the CEMO, *Klebsiella pneumoniae* and *Pseudomonas aeruginosa* at any time:

Name (please print) _____

Signature _____ Date _____

*If no boarding stud was used, provide the name and address of the premises where the mare resided.

APPENDIX 4



LABORATORY CERTIFICATE (CERTIFICAT LABORATOIRE) 2015 SEASON

For use only by Approved Laboratories* (Laboratoires agréés)

Swabs contained in transport medium and labelled as collected from the stallion/teaser/mare named (Nom du cheval)

Passport number (where available) (Numéro SIRE/carnet signalétique) _____

from the following sites (Prélèvements effectués) _____

were submitted by (Nom du vétérinaire ayant effectué les prélèvements) _____

for bacteriological examination on (date[s]) (Fait le) _____

I (Je) _____

of (Laboratory) (Nom du laboratoire agréé) _____

certify that the above swabs were examined: (je sousigné/e atteste que les prélèvements mis en culture),

a) with the following results: (ont livré les résultats suivants): b) by testing method: (méthode utilisée):

POSITIVE positif	NEGATIVE négatif	CULTURE	PCR
---------------------	---------------------	---------	-----

<i>Tylorella equigenitalis</i> (CEMO) (Mérite contagieuse des Equidés)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	--------------------------	--------------------------	--------------------------

<i>Pseudomonas aeruginosa</i> (<i>Pseudomonas aeruginosa</i>)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	--------------------------	--------------------------	--------------------------

<i>Klebsiella pneumoniae</i> (<i>Klebsiella pneumoniae</i>)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	--------------------------	--------------------------	--------------------------

Where *K. pneumoniae* was isolated, capsule type(s) identified were _____
(Type(s) capsulaire[s])

Name and qualifications (Responsable du laboratoire agréé) (please print) _____

Signature _____ Date _____

Laboratory name and address (Nom et adresse du laboratoire agréé) _____

*An Approved Laboratory is one whose name is published on the Horse Race Betting Levy Board website <http://codes.hblb.org.uk/index.php/page/139> for the year December 2014 – November 2015

†In the event of a positive *Klebsiella pneumoniae* isolate, capsule typing should be performed and the results detailed to aid the determination of potential venereal pathogenicity.

APPENDIX 5

EAV – Identification of shedding stallions

When a seropositive stallion is identified, it is vital to establish whether he is shedding the equine arteritis virus (EAV) in his semen. If so, he is a primary source of infection. He must be kept in strict isolation for at least 28 days while the following methods are used under the direction of the attending veterinary surgeon and the local Field Service office of the APHA to determine whether he is a shedder:

Detecting virus in semen

The virus isolation (VI) test is the internationally recognised test for the detection of EAV in semen and PCR (Polymerase Chain Reaction) testing may be used to provide an initial indication of virus in semen.

A whole ejaculate of semen should be sent to a laboratory; a second whole ejaculate should be collected at least seven days later and sent to the same laboratory. Transport requirements (eg cooling) should be arranged with the laboratory. If EAV is detected in either sample, the stallion is a shedder. He must be kept in isolation and not be used for any breeding activities while he is still shedding, unless permitted under an official licence issued by Defra.

In the event of negative results for both semen samples, experience has shown that it is advisable to confirm these results by test mating.

Test mating

This must be done in strict isolation and under veterinary supervision. The stallion and mares must have no contact with other horses. The following procedure should be followed:

- Identify at least 2 seronegative mares;
- Take and store blood samples from each and then isolate the mares. Consult the testing laboratory about storage conditions;
- Mate each mare twice a day with the stallion on 2 consecutive days;
- Keep the mares in isolation;
- After 28 days, take blood samples and send them, with the pre-isolation samples, to the laboratory.

If the mares remain seronegative, the stallion is unlikely to be a shedder and can be released after a clinical examination.

If one or more mares become seropositive, the stallion is a shedder. He must be kept in isolation and not be used for breeding activities while he is shedding, unless permitted under an official licence issued by Defra.

Seropositive mares must remain in isolation until they have a stable or declining antibody level in two sequential blood tests taken at an interval of at least 14 days.

APPENDIX 6

Guidance on isolation

The Codes of Practice often refer to the isolation of horses. In its strictest sense, 'isolation' means a separate facility with separate staff, separate protective clothing, separate utensils/equipment and thorough steam cleaning and disinfection of stables between each occupant. The following guidelines, at least, should be adhered to:

Premises

1. The isolation facility should be a separate, enclosed building of sound, permanent construction, capable of being cleansed and disinfected effectively.
2. It must not be possible for other horses to approach within 100 metres of the isolation facility while it is in use.
3. An adequate supply of fresh, clean water must be available at all times for the isolated horses and for cleaning purposes.
4. Adequate supplies of food and bedding material for the whole of the isolation period must be made available and stored within the isolation facility before isolation commences.
5. Equipment and utensils used for feeding, grooming and cleansing must be used only in the isolation facility.
6. Protective clothing must be available at the entrance to the isolation facility and not be taken outside of this facility.
7. A separate muck heap should be used within the isolation facility.

Procedures

1. Before use, all fixed and moveable equipment and utensils for feeding, grooming and cleansing within the isolation facility must be disinfected using an approved disinfectant. A list of these is provided on the Defra website http://disinfectants.defra.gov.uk/Default.aspx?Module=Approvals>List_SI (select only 'General' for suitable products).
2. Attendants of the isolated horses must have no contact with any other horses during the isolation period.
3. The isolation period for all isolated horses shall be deemed to start from the time of entry of the last horse.
4. No person may enter the isolation facility unless specifically authorised to do so.
5. When no attendants are on duty, the facility must be locked securely to prevent the entry of unauthorised persons.

If such strict measures are not possible in practice, the owner/manager of the premises where isolation is needed should devise their own isolation programme and procedures in conjunction with the attending veterinary surgeon. These should include, for example:

- The designation of a yard and associated paddock as an isolation area in a geographically separate area of the premises.
- The designation of individual staff to work in the isolation facility with separate protective clothing and approved disinfectants as and when required. These individuals should either not be involved with work on the rest of the premises during periods of isolation, or they should complete their work on the rest of the premises before entering the isolation area. They should not return to other areas of the premises thereafter.
- The establishment of 'standard procedures', the precise details of which should be agreed with the attending veterinary surgeon as they might vary according to individual circumstances.

APPENDIX 7

Transport

There is significant potential for transmission of infectious disease during transport.

Cleanliness and hygiene on board all forms of transport is the responsibility of the vehicle owner in private transport and the vehicle operator in contracted transport. The following notes are for guidance in either case.

1. Vehicles should be cleaned and disinfected frequently and regularly, using approved disinfectants capable of killing bacteria and viruses. A list of these is provided on the Defra website http://disinfectants.defra.gov.uk/Default.aspx?Module=ApprovalsList_SI (select only 'General' for suitable products).
2. Vehicles should be cleaned before horses are loaded.
3. Prior vaccination of horses may reduce the risk of disease transmission during transport. Ideally, these should be booster vaccinations but, if horses have not been vaccinated previously, then sufficient time should be allowed before transport for both primary and secondary vaccinations to produce adequate immunity.
4. When mixed loads (eg breeding and competition horses; pregnant and non-pregnant mares) are unavoidable, give careful consideration to the categories of horses which are transported together so as to minimise the disease risk (eg risk to pregnant mares of EHV-1 infection; risk of spread of EVA infection).
5. Horses should only travel if they are considered fit to do so by a veterinary surgeon.
6. Sick animals should not be transported except when they are travelling to obtain veterinary treatment. If transport of such horses is unavoidable, they must not be put in mixed loads without the consent of other owners (or those authorised to act on their behalf) of horses in that load. Veterinary advice should be taken.
7. If horses or their in-contacts are ill on, or shortly after, arrival at their destination, veterinary advice should be taken and the sick horses isolated if necessary. The transport operator should be informed at once and should then inform other clients with animals in the same load.
8. Facilities should, if necessary, be made available for cleaning/mucking out of lorries at premises where loading/unloading stops are made.

APPENDIX 8

Information on vaccines available in the UK

Brand name	Manufacturer	Licensed
Artervac*	Fort Dodge	As an aid in the prevention of EVA
Duvaxyn EHV 1,4	Fort Dodge	As an aid in the prevention of abortion and respiratory disease caused by EHV-1 and EHV-4
Equilis Resequin	Intervet UK Ltd	As an aid in the prevention of respiratory disease caused by EHV-1 and EHV-4 and equine influenza

Veterinary advice should be sought on the choice, timing and administration of any vaccine.

*Veterinary surgeons and horse owners should be aware that the current datasheet requirement for the only inactivated EAV vaccine used in Europe presently is for **6 monthly boosters** and NOT 12 monthly (annual) boosters as was previously the case for this vaccine. This has been the requirement since April 2005, when the vaccine was granted a full licence by the Veterinary Medicines Directorate. Non-compliance with this booster interval requirement may necessitate investigation of the viral shedding status of stallions by Defra under the Equine Viral Arteritis Order 1995.

Vaccination is recommended as one means of aiding the prevention of disease. The listing of vaccines above is for information purposes only and does not imply endorsement of the products by the HBLB, its Veterinary Advisory Committee or Sub-Committees. The information given is accurate at the time of printing.

APPENDIX 9

Further reading and relevant publications

Infectious Diseases of Horses Order

Reference: 1987 No. 790. Obtainable from HMSO.

www.legislation.gov.uk

Equine Viral Arteritis Order

Reference: 1995 No. 1755. Obtainable from HMSO.

www.legislation.gov.uk

Equine Veterinary Education

1996 Volume 8 (3) 166–170. Obtainable from Equine Veterinary Journal Ltd, Mulberry House, 31 Market Street, Fordham, Ely, Cambs CB7 5LQ.

www.evj.co.uk

BEVA Guide to the use of Artificial Insemination in Horse Breeding

Obtainable from the British Equine Veterinary Association, Mulberry House, 31 Market Street, Fordham, Ely, Cambs CB7 5LQ.

www.beva.org.uk

Newmarket Stud Farmers Association Breeding Regulations

Obtainable from Rustons and Lloyd, 136 High Street, Newmarket, Suffolk CB8 8JP.

www.nsfa.org.uk

National Trainers Federation Code of Practice for Infectious Diseases of Racehorses in Training

This guide for trainers and their veterinary advisors is available from the NTF.

www.racehorsetrainers.org

APPENDIX 10

Glossary of terms used in the Codes of Practice

Aerobically	In the presence of oxygen
Antibody	Protective protein produced by the body in response to the presence of a virus or bacteria
Cervix	Neck of the uterus opening into the vagina
Clitoris	A body of tissue found just inside the vulva
EDTA blood	Blood sample which has been prevented from clotting by the addition of ethylenediamine tetra-acetic acid (EDTA)
Endometrium	Tissue that forms a lining inside the uterus
Genitalia	Genital (ie reproductive) organs
Guttural pouch	Two large sacs connected to the tube (eustachian) between the horse's ear and throat
Heparinised blood	Blood sample which has been prevented from clotting by the addition of heparin
Immunofluorescence	A test that uses a specific antibody and a fluorescent compound to detect a specific organism
Jaundice	Condition in which a yellow colour can be seen in the mouth, eye and vagina
Microaerophilically	In the virtual absence of oxygen (10% of carbon dioxide)
Nasopharyngeal swab	Swab taken from the nose and throat
Oestrus/oestrous period	In heat or in season
Placenta	Membrane which surrounds the fetus in the uterus
Polymerase chain reaction (PCR)	A laboratory technique that produces multiple copies of the genetic material of a micro-organism contained within a clinical sample (eg swab). The technique amplifies the genetic material so that even tiny amounts can be detected, thereby permitting diagnoses of infections to be made.
Urethra	Tube through which urine is discharged from the bladder
Uterus	Womb
Venereal disease	A sexually transmitted disease
Vulva	External opening of the vagina

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codes.hblb.org.uk

Codes of practice

Laboratory approval scheme

racehorsehealth.hblb.org.uk

Research projects

www.hblb.org.uk

Infectious disease and equine influenza programmes

Research and clinical scholarships

