

**AFRICAN HORSE SICKNESS
CONTROL STRATEGY
FOR NORTHERN IRELAND**

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Department of
**Agriculture, Environment
and Rural Affairs**

www.daera-ni.gov.uk

Table of contents

	Page number
1. Introduction.....	4
1.1. Purpose and structure of the document.....	4
1.2. Approach	4
2. Disease control strategies	5
2.1. Strategic objectives of this work	5
2.2. Assumptions	5
2.3. Stages in controlling disease	6
3. The advisory groups	8
3.1. The National Expert Group.....	8
4. In the event of a heightened risk of AHS incursion to NI from another country.	9
4.1. Restriction zones in another EU Member State	9
4.2. AHS case in a third country	10
4.3. Raising stakeholder awareness	11
4.4. Active surveillance.....	12
4.5. Vector control.....	12
4.6. Meteorological surveillance	13
5. Suspicion of AHS infection within NI	14
5.1. General principles.....	14
5.2. Presence of virus is not suspected	14
5.3. Premises is designated a suspect premises.....	15
6. Outcome of investigation	19
6.1. Testing	19
7. Confirmation of disease	20
7.1. Notification obligations	20
7.2. Declaration of Zones.....	20
7.3. Action on premises where AHS is confirmed	22
7.4. Action to be taken in the Restricted Zones	24
7.5. Equidae living in the wild / non-captive horses	28
8. Vector investigation.....	29
8.1. Vector mitigation measures	29

8.2.	Vector monitoring	29
9.	Exports.....	30
10.	Vaccination	31
11.	General Issues.....	32
11.1.	Compensation.....	32
12.	Information management	33
12.1.	Stakeholder awareness and communication	33
13.	Long term action following confirmation of disease.....	34
13.1.	Attaining AHS free country or zone status	34
13.2.	Surveillance in the immediate subsequent years.....	34
13.3.	Vector monitoring	34
14.	Annex A: Glossary of Terms.....	36
15.	Annex B: Reference laboratories.....	38
15.1.	National Laboratory for AHS.....	38
15.2.	National Laboratory for AHS virus vectors (Culicoides species).....	38
15.3.	Community Reference Laboratory	38

1. Introduction

1.1. Purpose and structure of the document

The African Horse Sickness Regulations (Northern Ireland) 2013 provides the legal powers in Northern Ireland (NI) to allow the control of African Horse Sickness (AHS). This control strategy describes how these powers will be used.

The document is structured with the following broad sections that follow events as they might progress:

- **Heightened risk** of AHS from another country (the disease is currently absent from NI).
- **Suspicion** of infection in NI.
- **Confirmation** of disease in NI

1.2. Approach

Northern Ireland, along with the Republic of Ireland (RoI), is recognised as a separate epidemiological unit from Great Britain and would liaise closely with the RoI during an outbreak of AHS in either or both jurisdictions. It is recognised by the Department of Agriculture, Environment and Rural Affairs (DAERA) and the RoI's Department of Agriculture, Food and the Marine (DAFM) that sustained co-operation between both administrations would be essential to reduce the further spread of AHS.

This strategy reflects existing legislation, setting out control measures to be put in place from the point of suspicion of AHS through to NI regaining disease freedom. The strategy is intended to be a living document. DAERA seeks to ensure that policies and its preparedness to deliver them are regularly reviewed to ensure they remain fit for purpose.

A glossary of terms and acronyms used in the strategy is contained in **Annex A**.

The DAERA Generic Contingency Plan for Epizootic Disease summarises DAERA's objectives for controlling, eradicating and recovering from an outbreak of epizootic disease. It is supported and augmented by the overview of emergency preparedness plan which includes disease information summaries and information on specific elements of preparedness, training and key operations.

2. Disease control strategies

2.1. Strategic objectives of this work

To develop an agreed DAERA and stakeholder strategy to limit the impact of an incursion of AHS in NI by:

- Identifying any suspect case of AHS in NI with maximum rapidity;
- Determining whether the outbreak is associated with the recent importation of live animals or other method of introduction;
- Taking action to minimise spread to endemic insect vectors;
- Minimising spread of disease through the NI equine population;
- Regaining AHS free status for NI as soon as possible; and
- Complying with European Union obligations and Office International des Epizooties (OIE), the World Organisation for Animals Health, disease control codes.

2.2. Assumptions

Infective period: The OIE International Animal Health Code specifies that an infective period¹ of up to 40 days will be used for contingency planning.

Maximum period of viraemia: The maximum period of viraemia in horses is 18 days². The maximum period in donkeys and mules is 28 days³. There is some evidence that the viraemic period in zebras is 40-48 days⁴.

Vectors: Midges of the *Culicoides* group are capable of acting as AHS virus vectors.

Other potential methods of transmission: It is acknowledged that other potential methods of transmission, although not yet validated, should be considered. These include hypodermic needles, administration of infected blood containing products and biting flies. Veterinary equipment likely to be contaminated with blood, such

¹ OIE Terrestrial Animal Health Code 2009, Chapter 12.1 (www.oie.int/index.php?id=169&L=0&htmfile=chapitre_ahs.htm) African horse sickness, Article 12.1.1 (in part) "For the purposes of the *Terrestrial Code*, the *infective period* for African horse sickness (AHS) shall be 40 days for domestic horses. Although critical information is lacking for some species, this chapter applies to all equidae."

² OIE Animal Disease Data, African Horse Sickness (www.oie.int/fileadmin/Home/eng/Animal_Health_in_the_World/docs/pdf/Disease_cards/AFRICAN_HORSE_SICKNESS.pdf) "Viraemia in horses may extend for as long as 18 days, but usually lasts for fewer days - about 4-8 days. In zebras and donkeys viraemia may last up to 28 days

³ African horse sickness: Mellor PS, Hamblin C *Vet Res* 35 (2004) 445-466

⁴ Epidemiology of African horse sickness: Duration of viraemia in zebra (*Equus burchelli*) Barnard BJ, Bengis R, Keet D *et al* *Onderstepoort J Vet Res* 1994 Dec; 61(4):391-3

as hypodermic needles, intravenous giving sets, dental and obstetric equipment could result in transmission of disease to susceptible equidae; however normal good practice for cleansing and disinfection procedures, plus basic infection control approaches, such as single use of disposable needles, should prevent this from occurring. The possibility of such transmission occurring should be communicated to keepers and veterinary surgeons. In addition, there are references in the literature to transmission of the virus in germplasm, but there are no documented cases of this occurring. Neither is there substantial evidence in the literature regarding infection following ingestion of infected horse meat, nor the role of any associated viraemia in propagating onward infection.

Likelihood of introduction to NI: The likelihood of the introduction of AHS virus to NI via legal trade in horses and other equidae is considered very low. Under the current circumstances, with disease absent from Europe, it is not considered possible that infected vectors could travel to NI via windborne spread, as the distances involved would be too great from those locations where the disease is currently found. Further consideration would need to be given to this route of entry if the current geographical distribution of the disease changed. This is reviewed frequently by the International Disease Monitoring and Risk Assessment Group at the Department for Environment, Food and Rural Affairs (DEFRA), UK. There is a theoretical possibility that infected vectors could be introduced to NI or neighbouring countries through movement in aeroplanes either in cargo (on plants, animals etc. in the hold) or in the passenger compartment. Also, if the disease was present in Europe, infected *Culicoides* could be transported in vehicles.

2.3. Stages in controlling disease

The basic stages in controlling any disease are:

- **Alertness** – on-going awareness of the signs of disease by owners, occupiers, keepers and veterinary surgeons.
- **Suspicion** – of disease in an individual animal by an owner / occupier / keeper or veterinary surgeon.
- **Reporting / notification** – of that suspicion to DAERA and discussion with the duty Veterinary Officer (VO) at their local Divisional Veterinary Office (DVO).
- **Restrictions on movement** - preventing movements on or off the premises where disease is suspected
- **Veterinary investigation** – a VO visits the premises and conducts a veterinary inquiry.
- **Taking, submission and testing of samples** - If the suspicion of disease cannot be ruled out on clinical grounds, then samples are taken and submitted to the UK National Reference Laboratory (Pirbright Institute) for testing. The premises remain under restriction until the disease suspicion is ruled out.
- **Disease confirmed or negated** – if negated (ruled out), the process stops at this point. If disease is confirmed, the process continues:

- Establishment of disease control centres - Local Epizootic Disease Control Centre (LEDCC) & Central Epizootic Disease Control Centre (CEDCC).
- Establishment of zones around infected premises (IP) in which movements of equidae are restricted
- Consultation with experts

3. The advisory groups

3.1. The National Expert Group

In the event of a suspected outbreak, appropriate disease and laboratory experts will be notified to be on standby. If the level of suspicion or threat of disease is sufficiently high, the Expert Group may be notified before disease presence is confirmed officially.

The Expert Group may also be convened on an ad-hoc basis to provide advice at other times.

The group will consist of those with expertise in the following areas:

- Risk assessment;
- Veterinary epidemiology;
- Culicoides entomology;
- AHS virology and diagnosis;
- Veterinary surveillance;
- Operational delivery;
- Geographical information systems;
- Meteorology;
- Representatives from the equine industry.

In the event of a disease outbreak, the roles and responsibilities of the Expert Group for AHS are to provide advice to Chief Veterinary Officer (CVO) on:

- Potential risk pathways for introduction and disease spread;
- Interpretation of data from investigations into cases of AHS and /or vector surveillance;
- Epidemiology of the disease in the outbreak;
- Measures to control AHS virus infection, the disease and the vectors using the legal framework in existence;
- Design of surveillance programmes for AHS and vectors;
- Projections of future spread, distribution and persistence of the virus;
- Providing input to the cost benefit analysis.

3.1.1. Role of the National Expert Group in disease outbreak control mode

- The Expert Group will provide advice to the policy team on any scientific issues surrounding the outbreak, in order for quick and evidence based policy making to be decided.
- In the event of an outbreak in a neighbouring EU Member State, the Expert Group will provide advice on preventing spread from that Member State into the UK.
- The Expert Group will provide Devolved Administrations with relevant scientific advice in the event of a disease outbreak confined to or including Scotland, Wales or Northern Ireland. In these circumstances the Expert Group advice will be made available to the Devolved Administration CVO.

4. In the event of a heightened risk of AHS incursion to NI from another country.

Currently Europe is free from AHS and the AHS virus, although the disease has been recorded previously in Spain in 1966 and 1987-90, Portugal in 1989 and Cyprus in 1969.

NI will find itself at heightened risk of AHS virus incursion should a case of AHS be identified in another Member State i.e. through legal or illegal movement of equidae or movement of infected vectors. In addition, illegal movement of equidae from a Third Country where AHS is currently present poses a risk to the NI equine population. It is possible that infected vectors could also enter NI from a Third country following long distance transportation in i.e. an aeroplane.

4.1. Restriction zones in another EU Member State

In the event of any AHS case being identified within the EU, the affected Member State must immediately notify the Commission and the other States. No movement of equidae from AHS restricted areas will be allowed, except under stringent conditions.

This would also apply if AHS was confirmed in one of the other signatories to the Tripartite Agreement (TPA) (Ireland or France) (EU Directive 90/426/EEC). The TPA allows registered horses and equidae for breeding and production accompanied by valid passports to be moved between UK, France and Ireland without an Intra Trade Animal Health Certificate. Article 6 of the TPA contains provisions with regard to outbreaks of AHS in any signatory country: 'In the case of an outbreak of the following diseases listed below, signatory countries will apply the prohibition measures set out in Articles 4 (5) and 5 of Council Directive 90/426/EEC: African horse sickness, dourine, glanders, equine encephalomyelitis, equine infectious anaemia, vesicular stomatitis, rabies and anthrax.'

Safeguard measures would be drawn up by the European Commission (EC) and would be applied immediately; however, pending their adoption and in their absence, EU Member States have the right to take independent safeguard action (Article 10.1 of Directive 90/425/EC), but they must inform the EC of this.

The priority in this situation would be to keep the disease out of NI. Risk management may include one or more of the options listed below. The options followed will be based on an assessment of the risk to NI and will thus be dependent on the individual outbreak situation. Restrictions outlined in Directive 90/426/EEC are detailed below. In the event of an outbreak, the decision as to what restrictions would be imposed, will be determined in discussion at the EU Standing Committee on the Food Chain and Animal Health (SCoFCAH). For example:

- A ban on imports of equidae and equine products from a restricted zone.
- Imports from AHS virus infected areas permitted only on a risk managed basis provided they meet certain requirements (with regard to 90/426, Article 5.3).
- Requirements include:
 - a) Equidae moved only during certain periods of the year, depending on vector insect activity;

- b) Equidae must be kept in a quarantine station for a minimum of 40 days prior to being moved. Equidae must be protected from vectors during this quarantine period and during transportation from quarantine station to place of dispatch;
- c) Equidae must show no clinical signs of AHS on the day of inspection (inspection must have occurred within a 48 hour period prior to being moved from the affected area);
- d) If equidae have not been vaccinated against AHS they must have tested negatively to a suitable serological test on 2 occasions, with an interval of 21 and 30 days between the two tests and the second test being carried out within 10 days of dispatch.

If equidae have been vaccinated against the circulating serotype of AHS, this must have been performed more than 60 days prior to movement and the equidae must have undergone serological tests, as described above, with no evidence of a rising antibody titre between the two tests.

Where possible equidae that have entered NI from the affected EU Member State within 40 days (the OIE recommended infective period) will be traced, examined and tested for evidence of AHS infection. Equidae in contact with traced animals may also be tested and be subjected to movement restrictions. Where animals have left NI prior to being traced, the country of destination will be informed of concerns about the health status of the equidae in question.

4.2. AHS case in a Third Country

EU harmonised Trade and import rules require that no equidae may be imported from a Third Country or zone of that country in which AHS virus is present unless specific requirements are met (90/426/EEC Article 13).

A country or zone is considered free of AHS if there has been no clinical, serological (in unvaccinated animals) and/or epidemiological evidence of AHS in the past two years and no vaccination against AHS has been carried out in the past 12 months. Directive 90/426/EEC.

The part of the territory considered to be infected with AHS must comprise as a minimum:

- a protection zone with a radius of at least 100 km around any centre of infection,
- a surveillance zone at least 50 km extending beyond the protection zone, in which no vaccination has been carried out in the last 12 months (90/426/EEC Article 5.2)

An outbreak of AHS in a Third Country should prompt notification to the Commission and Member States that the disease has occurred (90/426/EEC Article 12). This notification may result in restrictions on trade from that country. Appropriate safeguard measures would be drawn up by SCoFCAH / the Commission and would be applied immediately. The priority in this situation (a confirmed AHS case in a third country) would be to keep the disease out of NI.

The options followed will be based on an assessment of the risk to NI and will thus be dependent on the individual outbreak situation; however, the restrictions imposed will be those under Directive 92/35/EEC⁵.

All equidae that have entered NI from the Third country within 40 days, will be traced, examined and tested for evidence of AHS infection. Equidae in contact with traced animals may also be tested. Where animals have left NI prior to being traced, the country of destination will be informed of concerns about the health status of the equidae in question.

4.3. Raising stakeholder awareness

In the event of a heightened AHS risk information needs to be effectively disseminated to the owners of equidae, stakeholders and veterinary practitioners to increase awareness of AHS, encourage vigilance and ensure suspicious clinical signs are quickly recognised. Essential information that must be communicated will be:

- The clinical signs of AHS (www.daera-ni.gov.uk/articles/african-horse-sickness).
- The action to take if disease is suspected (veterinarians must be aware of the need to report suspected cases of AHS to their local DVO).
- The ways to mitigate the risk i.e. measures to limit exposure to infected vectors, vector control methods, safe use of insecticides and veterinary equipment.

The general public should also be kept aware of the situation. Most importantly, the public should be aware of any biosecurity arrangements with which they should be complying i.e. relating to the movement of animals, bedding and feedstuffs from EU Member States or Third Countries etc., in order to reduce the risk of movement of diseased animals and the vector species.

Information will be sent to key stakeholders for further dissemination to their membership. Stakeholder meeting may also be held as and when required. The frequency of which will be determined in discussion with the stakeholders.

Communication to the veterinary profession will be through the North of Ireland Veterinary Association, the Association of Veterinary Surgeons Practising in NI, the British Equine Veterinary Association, British Veterinary Association and Royal College of Veterinary Surgeons. It will be essential to ensure veterinary surgeons are aware of their responsibility to notify, to whom to notify, and familiar with the clinical signs of AHS.

⁵ 92/35/EEC - Council Directive of 29 April 1992 laying down control rules and measures to combat African horse sickness. (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31992L0035:EN:HTML>)

4.4. Active surveillance

In the event of an increased AHS risk to NI, enhanced surveillance may be initiated. Where deemed appropriate such a regime would be defined following risk assessment, and cost benefit analysis. Surveillance could include:

- Enhanced vector surveillance to assess *Culicoides* vector populations in NI.
- Enhanced equine surveillance:
 - a) Scanning - veterinarians and pathologists would be reminded of their obligation to report suspect cases to their local DVO and would be encouraged to report suspicious cases for investigation by their local Departmental VO.
 - b) Targeted - serosurveillance could be introduced in susceptible species; however, given the high morbidity and mortality in horses and ponies it is unlikely that serosurveillance would be beneficial as sub-clinical cases are unlikely. Serosurveillance targeted at species which are less likely to show clinical disease may be introduced in order to detect silent cases (i.e. donkeys, zebras).

4.5. Vector control

Within those areas identified as being at heightened risk, the vector protection measures outlined below will be widely publicised and strongly recommended. Efforts will be made to ensure all veterinary practices, horse owners, occupiers and keepers in the high risk areas are aware of the heightened risk and from where further information can be obtained.

Owners will be advised to protect equidae against vectors to reduce the likelihood of a susceptible animal becoming infected. To help owners understand this advice the measures can be described as being the same in principle as those that would be considered for the control of sweet-itch. These recommendations will include:

- **Insecticides:** Use of an appropriate insecticide on all equidae. (N.B. No veterinary medicines are currently authorised to act specifically against *Culicoides* vectors in any species. Veterinary medicines containing deltamethrin are currently considered the most effective against *Culicoides* species; however such products are not completely effective and at best only reduce the risk of horses being bitten by midges. There are currently no veterinary medicines containing deltamethrin authorised in NI for use on horses. In the event of an increased risk of AHS in NI owners will be advised to discuss with their private veterinarian whether treatment to protect their horse against midges is appropriate and which veterinary medicine is the most suitable. In exceptional circumstances, veterinarians may find it necessary to prescribe a veterinary medicine authorised for another species or for another condition, or an unauthorised veterinary medicine (i.e. one containing deltamethrin) under the “cascade”. Care must be taken to monitor closely for adverse reactions; if any are noted they should be reported to the prescribing veterinarian. Owners must be made aware by their veterinarian of any relevant withdrawal period for the product used. Use of the product must be appropriately recorded in the horse’s passport.
- **Physical protection:** Additional vector protection methods that can be used include appropriate ‘fly-sheets/hoods’ etc.

- **Insect repellents:** Insect repellents containing the active ingredient DEET may be useful to enhance physical protection from vectors.
- **Movement of susceptible equidae:** Moving equidae to environments likely to have lower *Culicoides* populations i.e. high windy ground. Prior to such a movement it is essential that owners ensure that no movement restrictions are in place that would prevent such a movement occurring. Owners must also ensure that they take full account of their horse's welfare.
- **Housing in vector protected accommodation:** While this is unlikely to be an option for the large majority of equidae due to the cost of construction and the complexity of effective management, there may be some high value animals which have this accommodation available to them.
- **Management of vector breeding areas such as stagnant water:** Removal of stagnant water from the environment where possible, and destruction of any other identified breeding grounds.
- **Management of manure:** Careful management of manure to decrease the midge population.
- **Management with other stock:** Midges are attracted to goats, sheep and cattle as well as horses. Keeping horses with these animals may increase the risk of midge attack.
- **Time of day:** *Culicoides* are most active in the hours around sunset and sunrise thus vector protection should be targeted especially at this time.

The general environment should NOT be treated with insecticides. This will probably have little effect on midge populations and can cause serious environmental damage, particularly in water courses.

Further guidance is available at: www.daera-ni.gov.uk/articles/african-horse-sickness

4.6. Meteorological surveillance

The Meteorological Office monitors meteorological data on a daily basis and can assist in assessing the possibility for windborne spread of potentially AHS virus infected vectors to and within the UK. Information on potentially infective plumes of wind is based on metrological models and is supplied to DEFRA, DAERA and to the Institute of Animal Health Pirbright.

The heightened risk areas may be published on the DAERA website with the caveat that the model is only an estimation of potential incursions from infected vectors using relevant information available and is not a definitive picture.

5. Suspicion of AHS infection within NI

Any person e.g. veterinary surgeon, owner or keeper, who inspects or examines any equidae or equine or carcasses, and suspects the equidae or carcass to be infected with AHS virus, must immediately notify their local Divisional Veterinary Office (DVO).

Additionally, any person who examines a sample taken from equidae or carcasses and who suspects the equidae/carcass are infected with AHS virus or who detects antibodies to, or antigens of, that virus must immediately notify their local DVO. In response to this report an official veterinary inquiry, to confirm or rule out the presence of AHS, will be conducted by a Veterinary Officer (VO).

5.1. General principles

From the moment when the suspected infection is notified, the veterinary VO shall have the suspect holding(s) placed under official controls as per those described in regulation 7 (7) of the African Horse Sickness Regulations (Northern Ireland) 2013.

Any person in possession or charge of a notified horse or carcass must ensure that it is not moved from the premises where it is located, nor any equipment or genetic material. No other horse or carcass shall be moved from or to the premises, except that any horse normally kept at the premises may return there.

If required by the VO, and to the extent that it is practicable to do so, the main occupier must ensure that all horses are moved away from any part of the premises where most vectors are likely to be present. Areas which may be breeding grounds for vectors shall be identified and any vector control measures that the veterinary inspector requires shall be implemented.

Failure to observe such controls is an offence. The controls will apply until a VO confirms (orally or otherwise) to any occupier of the premises that the presence of African horse sickness virus on the premises is not suspected, or the premises becomes a suspect premises, in which case the controls applying to suspect premises will take effect.

Where the equid is at premises where it is normally resident, the VO will verbally or in writing inform the person notifying the suspicion that further investigation is needed and the control above will apply immediately. Where the equid is at another premises, the main occupier and any other occupiers will be informed of the need for further investigations and the applicable controls.

5.2. Presence of virus is not suspected

If a VO determines, through investigation, that the presence of AHS virus on the premises is not suspected, these controls will be removed.

If the VO **cannot rule out the suspicion of AHS** virus being present on the premises a notice will be served on the occupier designating the premises as a suspect premises.

5.3. Premises is designated a suspect premises

If any premises is designated a suspect premises, the VO will then:

- As far as is practically possible, identify places on the premises likely to facilitate the survival of the vectors, or to accommodate them, and assess the practicality of using appropriate vector control measures in such places.
- Take samples from any horse or carcass that is, or has been, on that premises.
- Begin an epidemiological inquiry to try to establish at least:
 - a) The length of time during which AHS virus may have existed in equidae on the premises.
 - b) The origin of the virus.
 - c) The identification of other premises on which there are equidae which may have become infected from the same source.
 - d) The presence and distribution of vectors.
 - e) The movements of any equidae on and off the premises and any carcasses removed from the premises. The time period covered for this tracing is likely to be 14 days (the incubation period is accepted as being in the range 3-14 days). If zebras or donkeys are present on the premises this time period may be extended. Premises where equidae have moved to during this period will be identified. This will be difficult given the nature of equine movements, but should be attempted in order to identify potential infection in in-contact animals.
 - f) The possibility that non-captive horses may be involved in the spread of the virus.

The VO will continue this inquiry until these facts have been established so far as is possible, or the possibility of disease has been discounted.

5.3.1. Requirements on the occupier

The notice served will require the occupier of the premises to:

- a) Ensure the notified horse or carcass is not moved from the premises where it is.
- b) Ensure no potentially contaminated equipment is removed from the premises.
- c) Ensure no other horse or carcass is moved from or to the premises, however, any horse normally resident on that premises may return to it. But it is important to note that once returned, such a horse will not be allowed to leave the premises until the restrictions have been lifted
- d) Perform an official census to record all equidae on the premises. This will include recording:
 - (i) the number of each equine species on the premises;
 - (ii) the number of each species that are already dead;
 - (iii) the number that are showing clinical signs of AHS;

- (iv) the number born and that die after restrictions are placed; and
- (v) the number that enter and leave the premises.

The occupier should update this record regularly to take account of equidae being born / dying. It would be expected that in most situations this record will be able to be kept accurately; however, on premises where equidae are kept extensively, i.e. semi-feral pony herds, this may not be possible. All reasonable steps should be taken to keep the record up-to-date. These records must be kept for at least six months after the lifting of the zone or the restrictions on the premises, whichever is later.

It should be noted that the routine, informal recording of all movements for all horses on a premises is regarded as good practice, not just during disease outbreaks.

Ensure all equidae on the premises are kept so far as is practicable on the part(s) of the premises where they are likely to be less exposed to midges. This will include areas of high, windy ground and areas away from stagnant water. If the VO directs equidae to be kept in a certain part of the premises, the occupier must ensure this is followed. The most appropriate way to protect against vectors will vary on different premises. The VO will advise what the most appropriate measures are based on each individual situation.

- e) Implement such practicable midge control measures as directed by the VO.

5.3.2. Requirements related to movements

In addition, the notice will require that:

- a) All movement of equidae to or from the holding(s) is prohibited, except under the authority of a license issued by a VO.
- b) No equine carcass or any other thing which is likely to cause transmission of midges can be moved off the premises, except under the authority of a license issued by a VO. This prohibition of movement off the premises will include horse transport vehicles, bedding, manure and feed.
- c) Enforcement of these movement controls is the responsibility DAERA Veterinary Service (VS).

5.3.3. If the premises is not known to have an epidemiological link with other premises

If the suspect premises is not known to have an epidemiological link with an Infected Premise (IP) the following steps will be taken:

- The VO will take all reasonable steps to establish whether or not the suspicion is correct. This will include:
 - a) Taking samples from equidae or carcasses on the premises (if there are any) or the environment and having them tested. If a carcass needs to be removed to allow post-mortem examination this movement will be carried out under the control of DAERA VS. It is expected that all suspect equidae and carcasses on the premises will be tested. In addition, donkeys and

zebras present on the premises are likely to be tested. The VO can test any equidae/carcasses deemed necessary.

- b) Monitoring equidae on the premises. This may include clinical examination of equidae.
- DAERA will revoke the notice designating the premises 'a suspect premises' if testing does not demonstrate the presence of AHS virus or antibodies to AHS virus in the samples.

5.3.4. If the premises has an epidemiological link with other premises

If the suspect premise has an epidemiological link to a known infected premise, the following steps will be taken:

- The VO will take steps to determine if the suspicion is correct.
- If any equidae on the premises show clinical signs of AHS virus infection initially, or during the monitoring period, the VO:
 - a) Must take samples from it and have them tested;
 - b) May take samples from any other equidae or carcasses on the premises and have them tested. Samples are likely to be taken from donkeys and zebras present on the premises and any equine with a known or possible contact with an IP.
- If no equidae on the premises shows clinical signs of AHS virus, the VO:
 - a) Must monitor any equidae on the premises for a period of at least 40 days; and
 - b) May take samples from any equidae or carcass on the premises and have them tested.
- DAERA will revoke the notice designating the premises a suspect premises if:
 - a) All equidae on the premises have died or been euthanized;
 - b) Testing does not demonstrate the presence of AHS virus or antibodies to AHS virus in the samples; and
 - c) No equidae show clinical signs of AHS virus during the 40 day monitoring period from the commencement of veterinary investigations.

5.3.5. Identification of equidae

The VO may permanently identify using a microchip (or require an owner to do so), any equidae on a suspect premises which does not currently have a microchip inserted.

5.3.6. Visits to premises

The VO may make repeat visits to the suspect premises, to inspect and take samples as necessary for the completion of the veterinary investigation.

Depending on the scale of the outbreak, and the resources available, it may not be possible to visit all suspect cases immediately. In this situation the suspect cases will be prioritised on epidemiological assessment at that time. This will be based on factors such as movement records, meteorological conditions and disease modelling.

5.3.7. Monitoring of equidae

The VO may recommend owners of equidae resident on suspected premises to check the temperature of each of the equidae at least twice daily. Any owner recording a temperature greater than 39.2°C should inform their private veterinary surgeon, who may in turn contact DAERA if there is suspicion of disease.

5.3.8. Temporary control zones

If required, DAERA can declare an appropriately sized Temporary Control Zone (TCZ) around the suspected IP prior to the presence of disease being confirmed. The size of the TCZ will depend on the assessed risk of transmission of AHS virus at the time. Any measures considered necessary to prevent the spread of disease can be instituted within the TCZ if ordered by DAERA.

5.3.9. Movement restrictions

If considered necessary, movement restrictions affecting all premises within the TCZ could be implemented in the situation where suspicion of disease was high and a movement ban was considered necessary to allow the disease control response to be implemented.

5.3.10. Welfare issues

In the event of exceptional circumstances arising due to movement restrictions, movement of individual animals may be allowed by licence under veterinary supervision to ensure the health and welfare of individual animals (regulation 36). Permission must be obtained from the veterinary inspector prior to any movement occurring.

5.3.11. Nature reserves

Specific provisions may be laid down for nature reserves in which equidae live in freedom. The VO will be responsible for determining what the most appropriate measures will be on each nature reserve. The most appropriate measures are likely to be different on each reserve due to differing environmental conditions.

6. Outcome of investigation

6.1. Testing

As described above, the VO will submit samples for testing for AHS virus or antibodies on samples from equidae and carcasses from suspect premises.

6.1.1. Presence of virus is confirmed

If initial testing demonstrates that any equidae or carcass on the suspect premises is infected with AHS virus (i.e. presence of virus demonstrated), DAERA will declare the premises to be infected. The measures outlined in 5.3.1 and 5.3.2 will continue to have effect. Tests that could be used to identify the presence of virus include real time PCR, antigen-detection ELISA and virus isolation.

If AHS infection is confirmed, the Institute for Animal Health, Pirbright will undertake serotype identification.

6.1.2. Antibodies to infection are identified

If virus is not identified in any equidae or carcasses on the premises, but antibodies against AHS are identified, the VO shall continue to monitor equidae on the premises and take further samples and test those samples. The restrictions in 5.3.1 and 5.3.2 will remain in effect. If tests for virus have already been performed and found to be negative, serology will be repeated 10-14 days later. In addition, the VO may test other equidae on the premises. All donkeys and zebras on the premises should be tested. The VO will investigate vaccination and travel history to help determine the source of AHS antibodies.

6.1.3. Investigation does not confirm infection with AHS

If the investigation does not confirm infection with AHS virus all restrictions can be lifted by DAERA once sufficient information is available to be sure of disease freedom.

7. Confirmation of disease

The CVO will confirm the first case of AHS based on laboratory results; in the event of an epidemic, on the basis of clinical signs, laboratory results and/or epidemiological investigation.

7.1. Notification obligations

AHS is notifiable to the OIE and the European Commission (EC). On confirmation that AHS is present in Northern Ireland, the CVO notifies the CVO in DEFRA and the CVO in DAFM. The CVO in DEFRA notifies the OIE of the presence of AHS in the UK within 24 hours of confirming disease. The EC is also notified.

7.2. Declaration of Zones

On confirmation of the disease, DAERA will declare:

- The **Control Zone (CZ)** - a zone of at least 20 km radius around the IP placed under restriction.
- A **Protection Zone (PZ)** of at least 100 km radius around the IP.
- A **Surveillance Zone (SZ)** of at least another 50 km beyond the Protection Zone, in which no systematic vaccination has been carried out in the last 12 months.

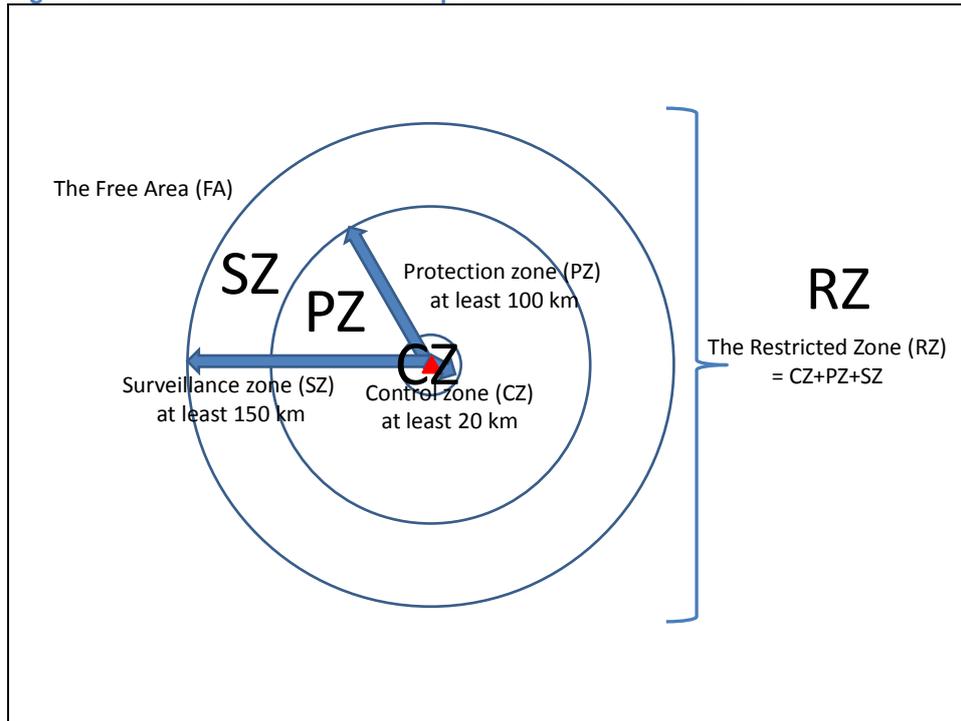
All these zones are centred on the part of the premises that DAERA considers most appropriate for disease control.

- **Restricted Zone** - These zones combined (CZ, PZ and SZ) shall be referred to as the *Restricted Zone (RZ)*.

Outside the Restricted Zones i.e. free from disease restrictions, will be referred to as the Free Areas (FA).

- **Infection Zone** – Of such a size DAERA considers necessary to reduce the risk of spread of AHS. This zone may be declared where AHS is likely to be present in non-captive horses (All normal disease control measures as described above can be declared in such a zone).

Figure 1: Illustration of the relationship of disease control zones



The establishment of the zones can take account of the natural boundaries to the dispersal of vectors, and geographical, administrative, ecological and epizootiological factors. DAERA may extend the measures provided for in the control zone if beyond that zone there are grounds for suspecting an extension of AHS virus.

Due to the size of the zones substantial areas of Northern Ireland may be within the restricted zone and subject to movement restrictions irrespective of where AHS is confirmed. With the agreement of the SCoFCAH, changes to zone sizes may be made as the disease progresses to allow the most proportionate and effective disease control.

7.2.1. Cross border zones

7.2.1.1. Zones encompassing Northern Ireland and Republic of Ireland

When disease is suspected or confirmed, in either Northern Ireland or the Republic of Ireland, notification between the respective Departments will take place as soon as is practicable. Co-operation between both administrations will be essential to reduce the further spread of disease. There are a number of areas where co-operation and agreement will be of particular importance and benefit. Action agreed in respect of these areas is detailed in the Common Chapter (Agreed approach between DAFM and DAERA in the event of a suspect or confirmed case of AHS).

Close communication will be maintained throughout the outbreak to ensure consistency of approach and measures wherever possible (e.g. the issuing and conditions of movement licenses, the ending of zones)

In such events where zones are imposed up to the border but are not required to extend further, there will be close dialogue between each Department to

discuss the extent of the zones. Any decisions on extending zones beyond borders (or not) will be based on an assessment of the risk of disease spread and also a consideration of any potential economic implications of movement controls.

7.2.1.2. Infected premises declared in adjacent GB administration

If an IP is declared outside Northern Ireland and DAERA considers that there is a risk of spread of AHS to Northern Ireland, DAERA may declare:

- a) A temporary control zone;
- b) A control zone
- c) A protection zone;
- d) A surveillance zone;
- e) An infection zone.

These zones may be of any size that the DAERA considers necessary to reduce the spread of AHS virus.

7.3. Action on premises where AHS is confirmed

When AHS is diagnosed in any equidae, or identified in any equine carcass, the premises at which those equidae resided will be declared an IP.

7.3.1. Veterinary investigation

The VO will initiate a veterinary inquiry to include as described in 5.3. The measures in 5.3.1 and 5.3.2 will apply to an IP.

7.3.2. Diagnostic testing

Depending on the stage of the outbreak, as part of the epidemiological investigation, the VO may take serological samples from all equidae on the premises whether or not they are showing signs of clinical disease.

7.3.3. Repeat visits

The VO can make repeat visits to the IP in order to progress the veterinary investigation outlined above as necessary. The occupier of the IP must notify the VO if any equidae shows clinical signs of illness. The VO shall revisit the IP at a frequency determined by the situation.

7.3.4. Monitoring of equidae

The VO may recommend owners of equidae resident on suspected premises to check the temperature of each at least twice daily. Any owner recording a temperature greater than 39.2°C should inform their private veterinary surgeon, who may in turn contact their local DVO if there is suspicion of disease.

7.3.5. Identification of equidae

The VO may permanently identify using a microchip (or require the owner to do so) any equidae on suspect IP which does not currently have a microchip inserted.

7.3.6. Culling of infected animals

In the early stages of an outbreak of AHS, DAERA will act rapidly to kill infected horses, and those showing clinical signs of the disease on infected and contact premises. This action is necessary to prevent the disease spreading to and circulating within the midge population. Any such decision on euthanasia will be taken at a senior level within DAERA, and it is expected that only very small number of equidae will be killed for disease control purposes. It is important to note that this is likely to be restricted to the beginning of the outbreak and only where such action may have an impact on limiting spread of the disease.

Should the disease continue to spread, and there is proof the disease is circulating in the midge population, continuing to kill infected animals may not be an appropriate response. In such circumstances, DAERA will, with the approval of the European Commission, stop killing animals, and instead focus efforts on available midge control, movement restrictions and possible vaccination.

Specific categories of animals may be spared, but only if such action will not jeopardise the control of the disease. Examples include animals of a recognised rare breed of genetic importance, research, zoo species and other similar animals if vector protection measures can be applied, and they can be moved immediately to a maximally vector protected building that is fully operational at the time of diagnosis.

Responsibility lies with the owners of these animals to ensure that appropriate facilities and other risk mitigations measures are fully funded, available and ready for use at the required time. A veterinary risk assessment must be undertaken before any such decision can be taken.

If any equidae require euthanasia on welfare grounds due to injury or disease (where DAERA has moved away from a culling policy), this can be carried out at the owner's request and expense by a private vet, but must be reported immediately to their local DVO.

7.3.7. Disposal of carcasses

On premises where equidae have been culled for disease control purposes, the carcass of any equidae that die or are killed on that premises will be removed under the authority of DAERA, and disposed of in such a way as to prevent onward spread of AHS.

On premises where no equidae have been culled for disease control purposes, disposal of carcasses shall remain the responsibility of the owner of the equidae. Carcasses must be disposed of in accordance with the Animal By-Products (Enforcement) Regulations (Northern Ireland) 2011, but not to a premises approved under these regulations for the collection of fallen stock for the purpose of feeding to dogs or other animals

The meat of horses infected with AHS virus is infectious to dogs. Dogs which consume the meat of an infected animal can contract AHS which is frequently fatal. Meat from infected horses must not be fed to dogs or other carnivores.

7.4. Action to be taken in the Restricted Zones

Within the RZs declared by DAERA, the following must occur:

- Premises containing equidae must be identified as soon as is practicable.
- A VO should visit, in a systematic way, premises with equidae that are within the RZs. The VO will inspect and examine equidae as necessary and collect and test any samples considered necessary.

7.4.1. Identification of equine premises

Equine premises in the control zone will be identified by DAERA VS staff undertaking local patrols on the ground, visits to individual premises and liaison with local veterinary practices. To expedite this process, and to allow identification of premises in the remainder of the restricted zones, it will be helpful for all equine premises within the restricted zones to register with DAERA.

7.4.2. Visits to equine premises

The Directive requires that equine premises within the RZ are visited. Within the RZ, priority will be to:

- a) Investigate new report cases.
- b) Investigate tracings from IP. Tracings will include equidae which have, within the last 40 days, been resident on a premises now considered to be an IP or premises with equidae which have, within the last 40 days, been resident on a premises on which any donkeys or zebras were present.
- c) Visit premises considered to present greatest risk to the rest of the equine population i.e.:
 - Neighbouring premises.
 - Premises containing donkeys/zebras/mules.
 - Premises close to likely/suspected *Culicoides* breeding sites.
 - Premises sharing veterinary equipment, e.g. dental and obstetric tools, with a known IP.

7.4.3. Contact with premises that are not visited as a priority

Information and guidance on the signs for which keepers should be vigilant will be made available to all equine premises. The owner, and the veterinary surgeon if consulted by the owner, must notify their local DVO if any suspect clinical cases occur.

7.4.4. Suspect premises in the Restricted Zones

When a VO visits premises in the RZs considered to be suspect premises, monitoring and testing will be carried out as described in 5.3.4. At all other premises, samples may be collected as necessary. It is likely all donkeys and zebras within the RZs will undergo testing (this is most likely serological testing at an interval of 10-14 days). Follow up visits will be conducted as considered necessary based on a veterinary risk assessment.

With the agreement of SCoFCAH, DAERA may reduce the size of, or remove, any or all of the zones depending on the epidemiological situation and the measures necessary to control the spread of AHS virus. In the event that a prolonged outbreak occurs, altering the size of zones may allow the equine industry to continue to function without any risk of increased disease transmission. These decisions will be taken based on epidemiological and veterinary risk assessment.

7.4.5. Actions to be taken in the control zone

The measures laid down in 5.3.1 and 5.3.2 will be extended to all premises within the control zone. These actions can be extended outside of this zone if there are reasons for suspecting an extension of AHS. DAERA will inform the Commission (through DEFRA) of any changes to the boundary.

7.4.6. Action to be taken within the 100 km Protection Zone

7.4.6.1. Movement of equidae

Equidae cannot be moved on to, or off, a premises in the protection zone unless licensed by a VO or an inspector acting under the direction of a VO. A licence may be granted at any time if:

- a) In the event of exceptional circumstances, movement of individual animals may be allowed by licence under veterinary supervision to ensure the health and welfare of individual animals (regulation 36).
- b) The move is direct to licensed place of slaughter within the PZ for the purpose of emergency slaughter.
- c) The move is direct to a slaughter house designated by DAERA within the SZ if no slaughterhouse exists within the PZ for the purpose of emergency slaughter.
- d) The move is to a quarantine station.
- e) A licence is needed to allow movement between two sets of premises divided by a road provided that the sites of premises would be contiguous except for the road.
- f) The move is direct to other premises within the PZ, provided that:
 - A veterinary surgeon has inspected all equidae on the premises and examined each of the equidae to be moved within 48 hours

preceding movement and has no reason to believe AHS is present in any of the equidae on the premises;

- The equidae are accompanied by documentation by which it can be clearly identified (in practical terms this will be its passport) and is microchipped;
- If the equidae have been vaccinated against AHS, 60 days must have passed since date of that vaccination.

No person may move horses through the PZ unless licensed by a VO, or an inspector acting under the direction of a veterinary inspector. In practice this will be by general licence which will require midge control measures to protect the horses while passing through the zone.

A veterinary risk assessment will be required to assess the specific licensing regime appropriate to the specific needs in each outbreak and the stage in each outbreak.

7.4.6.2. Sero-surveillance within the protection zone

Sero-surveillance for AHS will be required within the Protection Zone. A programme of active surveillance for susceptible animals would be developed at the time of an outbreak depending on the epidemiological assessment.

7.4.6.3. Vaccination within the Control and/or Protection Zone

The CVO may require vaccination of all equidae within the CZ and/or PZ using a vaccine authorised by the Veterinary Medicines Directorate (VMD)-. All equidae will be identified with a microchip upon vaccination (if not already identified in this way) and the vaccination will be recorded in the individual's passport as per horse passport legislation. It is important to note that it is an offence to vaccinate against AHS if this is not specifically authorised by DAERA. Equidae that have been vaccinated within the previous 60 days cannot be moved from the premises on which they resided at the time of vaccination.

7.4.7. Action to be taken within the surveillance zone (extending 50 km beyond the PZ) EC/92/35 (Article 8.2)

7.4.7.1. Movement of equidae

Equidae cannot be moved on to, or off, a premises in the SZ unless licensed by a VO or an inspector acting under the direction of a VO. A licence may be granted at any time if:

- a) In the event of exceptional circumstances, movement of individual animals may be allowed by licence under veterinary supervision to ensure the health and welfare of individual animals.
- b) The move is direct to slaughterhouse within the SZ for the purpose of emergency slaughter.

- c) The move is direct to a slaughter house designated by DAERA within the PZ if no slaughterhouse exists within the SZ for the purpose of emergency slaughter.
- d) The move is to a quarantine station.
- e) A licence is needed to allow movement between two sets of premises divided by a road provided that the sets of premises would be contiguous except for the road.
- f) The move is direct to other premises within the SZ, provided that:
 - A veterinary surgeon has inspected all equidae on the premises and examined each of the equidae to be moved within 48 hours preceding movement and has no reason to believe AHS is present in any of the equidae on the premises;
 - The equidae are accompanied by their passports and are microchipped;

A veterinary risk assessment will be required to assess the specific licensing regime appropriate to the specific needs in each outbreak and the stage in each outbreak.

7.4.7.2. Sero-surveillance within the surveillance zone

Sero-surveillance (surveillance using blood tests) for AHS will be required within the Surveillance Zone. A programme of active surveillance for susceptible animals would be developed at the time of an outbreak depending on the epidemiological assessment.

7.4.7.3. Vaccination with the surveillance zone

In accordance with the Directive (92/35/EEC), vaccination of equidae within the surveillance zone would not be allowed.

7.4.8. Activity outside the Restricted Zones

Appropriate surveillance will be undertaken outside of the RZ.

Any suspicious case, or case that is considered to be suspect on *post-mortem* examination, must be sampled and these subjected to testing at the Institute for Animal Health, Pirbright and the local DVO informed of the result. The premises of origin of the case will become a suspect premises.

Active surveillance may also be carried out depending on the need determined through epidemiological assessment of the outbreak.

7.4.9. Epidemiological links within infected premises

In the event that due to an epidemiological link with an IP, a VO suspects that a premises outside a RZ which does not contain any equidae, may contain infected vectors, DAERA may serve a notice on the owner or

occupier of that premises prohibiting equidae entering it for a specified period. In practice, this provision is likely to be used when there is suspicion that infected vectors are present for some reason on a premises where equine gatherings occur i.e. showgrounds, racecourses etc.

7.4.10. Suspect case within a slaughterhouse

If suspected equidae or carcasses are in a slaughterhouse when notification of suspicion is made and the VO at the DVO considers further investigation is necessary, the veterinary officer must tell, the person in charge of the equidae/carcasses of the following:

- a) Any live suspect equidae and any live equidae from the same premises as the suspect must not be slaughtered until examined by a VO and the VO has confirmed that the necessary samples have been taken.
- b) If any of the suspect equidae or equidae from the same premises have already been slaughtered, or have died, their carcasses must be separately identified and retained until a VO has examined them and confirmed all necessary samples have been taken.

If, after investigation, the VO suspects AHS virus does exist in any equidae or carcasses at the slaughterhouse, the VO will serve a notice requiring that all live suspect equidae and equidae from the same premises are slaughtered and the carcasses are separately identified and made available to the VO for examination and sampling. The VO must take samples and test them to ascertain if AHS virus is present. Samples can be from equidae/carcasses at the slaughterhouse or at the premises of origin. If test results show AHS virus is present, DAERA shall remove and dispose of the carcasses. The premises of origin will be investigated as a suspect premises.

If the VO determines AHS virus does not exist in any equidae or carcasses at the slaughterhouse, these controls will cease to apply.

7.4.11. Premises straddling zones

If premises straddle the border of two zones, they shall be treated as being within the higher risk zone i.e. if a premises straddles the PZ and SZ, it will be treated as being in the PZ.

7.5. Equidae living in the wild / non-captive horses

With regards to those non-captive equidae living essentially in the wild e.g. feral ponies, a VO or any other officer of DAERA may:

- a) Undertake surveillance for such equidae;
- b) Capture them and detain them;
- c) Vaccinate them;
- d) Take samples from them; and

- e) Kill them if the VO is satisfied that
- it is not possible to take samples from them without killing them; or
 - it is not reasonably practicable to detain them pending the results of any testing or sampling; or
 - they are spreading or may spread AHS virus to other horses, or are at risk of acquiring AHS virus.

8. Vector investigation

Vector investigations may be conducted on any premises. If undertaken, the aim will be to:

- a) Establish the *Culicoides* species present and the abundance of each species (this will assist in determining which vector species are involved in transmitting AHS virus).
- b) Collect insects on the suspect premises or in the local area of the affected animals and submit these to AFBI for identification as required.
- c) Isolate virus from the collected *Culicoides* sp. (Although this may be unrewarding if the vector involved has low (1-2%) competency. Best success will be achieved with vectors from premises where disease is known to be present).

8.1. Vector mitigation measures

Guidance on measures that can be taken to decrease the risk of horses being bitten by *Culicoides* species is available at: www.daera-ni.gov.uk/articles/african-horse-sickness

The general environment should not be treated with insecticides. Expert advice indicates that this will probably have little effect on midge populations and can cause serious environmental damage, particularly in water courses.

8.2. Vector monitoring

Where considered appropriate, vector sampling will also be undertaken in the Protection Zone and Surveillance Zone at sites selected for serological monitoring to establish whether competent vectors are present, their abundance, seasonality and prevalence. These data will assist in planning resource deployment, modelling and predicting spread of the outbreak.

Isolation of AHS virus from vectors is not suitable as a technique for monitoring disease.

9. Exports

It is unlikely that trading partners will allow import of equidae from Northern Ireland if AHS virus is present in the country. However, movement from free areas, PZ and SZ could occur if certain conditions are met (EU Directive 90/426).

- a) Equidae must travel from the PZ/SZ to a quarantine station where they will remain for 40 days prior to despatch.
- b) This movement and dispatch can only occur at times of year when vectors are inactive and the equidae must show no clinical signs of AHS on examination prior to dispatch (examination must occur within 48 hours of dispatch).
- c) If equidae have been vaccinated against AHS they must not have been vaccinated within the last 60 days and must undergo two serological tests with no evidence of a rising antibody titre.
- d) If the equidae have not been vaccinated, they must test negative by serological test on two occasions, with 21-30 days between tests with the final test being carried out not more than 10 days prior to dispatch.
- e) Equidae must be kept in the quarantine station for 40 days prior to dispatch. The equidae must have been protected from vectors during the quarantine period and during transport from the quarantine station to the place of dispatch.

Surveillance on IP will be conducted through testing and monitoring by a VO.

10. Vaccination

Under normal circumstances, no one in the UK is allowed to vaccinate a horse against AHS. No AHS vaccine is currently authorised by the Veterinary Medicines Directorate for use in Northern Ireland. The CVO may permit the use of an unauthorised vaccine in an emergency.

Use of any vaccine will be determined based on advice from the CVO based on the safety and efficacy information available for the vaccine. Proposals for the establishment of a vaccine bank, which will contain a number of monovalent live vaccine types, are being considered by the European Commission. This may be considered for use in an emergency situation.

Where a vaccination zone has been declared, any occupier of premises inside that zone **must** ensure the vaccination of horses on their premises in accordance with that declaration.

Horses that are vaccinated must be identified by way of a microchip and a record of such horse having been vaccinated must be kept.

No person may move a vaccinated horse from the premises where it was vaccinated until at least 60 days have elapsed since:

- a) The date of the vaccination, or
- b) If the vaccination includes a course of doses, the date of the final dose,-.

except under the authority of a licence granted by a VO.

The policy on vaccination is subject to change depending on the development of AHS vaccine technology e.g. Differentiate Infected from Vaccinated Animals (DIVA) tests.

11. General Issues

11.1. Compensation

Compensation provisions for animals culled for disease control purposes are set out in the Diseases of Animals Order (Northern Ireland) 1981. This provides that:

- where the animal slaughtered was affected with AHS, the compensation will be half the value of the animal immediately before it became affected;
- in every other case, the compensation will be the value of the animal immediately before it was slaughtered.

Compensation will be paid for anything that has to be seized and destroyed by DAERA because it poses a risk of transmitting disease and cannot be cleansed and disinfected. This will be at the value of the item at the time of seizure (that is in its contaminated state, which often means the item has no value).

12. Information management

12.1. Stakeholder awareness and communication

During an outbreak, information must be provided for all keepers of equidae, occupiers, veterinary practitioners and other stakeholders, particularly within the Restricted Zone. The key information provided will vary during the course of the outbreak, but key elements will include:

- a) Clinical signs of AHS.
- b) Action to take if the disease is suspected.
- c) The current disease situation within Northern Ireland (and possibly Europe and rest of world).
- d) Current control measures in place.
- e) Legislative and licensing procedures that must be complied with.
- f) Responsibilities and restrictions applicable to IP and those within the designated area.

The general public will be kept informed about the disease, the outbreak and the control measures being implemented. The public will be re-assured that AHS does not infect humans and has no public health implications.

Communication with the equine sector will be focus on the dissemination of information through stakeholders and wider networks.

13. Long term action following confirmation of disease

The aim will be to eradicate the disease focus and establish freedom from AHS.

13.1. Attaining AHS free country or zone status

DEFRA, on behalf of DAERA, must apply to SCoFCAH for permission to lift the restrictions and remove the zones when it is believed that AHS virus is no longer present.

If vaccination has been carried out, the restrictions and zones must remain in place for no less than 12 months after the last vaccination.

The requirements for a country being declared free of AHS are laid down in the latest version of the OIE Terrestrial Animal Health Code (2013) (Chapter 12.1.2: www.oie.int/en/international-standard-setting/terrestrial-code/access-online/) and in 90/426/EEC: (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:1990:224:0042:0054:EN:PDF>)

13.2. Surveillance in the immediate subsequent years

The aim of surveillance in the immediate subsequent years of an outbreak would be to aid eradication of disease and to attain the requirements needed to gain 'free' status.

The objectives would be to determine the following:

- a) Has AHS virus persisted over the winter?
- b) Has AHS virus been reintroduced?
- c) Confirmation that AHS virus is no longer present?

In the initial stages, it is expected that horses will exhibit severe disease, and very high levels of mortality. Donkeys will show variable levels of disease severity and zebras will not be expected to show clinical signs despite infection.

According to the OIE, in order to demonstrate AHS freedom, a Member State must provide evidence for the existence of an effective surveillance programme. The strategy and design of the surveillance programme will be dependent on the epidemiological circumstances but should be based on the methods described in the Terrestrial Animal Health Code chapter 12.1:

www.oie.int/index.php?id=169&L=0&htmfile=chapitre_ahs.htm

Susceptible wild equidae must be included in any disease surveillance scheme intended to provide evidence to all disease free status to be regained.

13.3. Vector monitoring

Vector sampling using light traps may also be undertaken to determine their geographical and seasonal distribution and prevalence in risk areas.

Vector surveillance can be used to identify high, medium and low risk areas by determining the various species present in an area, their abundance and seasonal occurrence. This information may in turn inform targeted surveillance of equidae.

14. Annex A: Glossary of Terms

AFBI	Agri Food and Biosciences Institute
AHS	African Horse Sickness
Carcass	A carcass, or part of a carcass of a horse, but does not include a sample taken from a carcass
Common Chapter	Agreed approach between the Department of Agriculture, Food and Marine (DAFM) and the Department of Agriculture, Environment and Rural Affairs (DAERA) in the event of a suspect or confirmed case of AHS
Contact premises	Premises that have an epidemiological connection with IP, including those that due to their proximity to IP that DAERA considers have an epidemiological connection with IP
Contaminated equipment	Any equipment that has been in contact with blood or other bodily fluids from a horse, including needles, surgical or dental equipment, unless that equipment has been either sterilised following such contact or is securely confined in a sharps box complying with British Standard 7320 (or equivalent standard).
CVO	Chief Veterinary Officer. DAERA official who is responsible for veterinary advice to government and ministers on all aspects of animal health and welfare. In the UK there CVOs in Northern Ireland, Scotland, Wales and England. The CVO in England represents the UK in the EU and internationally on veterinary matters.
<i>Culicoides</i>	A genus of biting midges in the family Ceratopogonidae. Around 500 species of Ceratopogonidae are at present placed in the genus and this is split into many subgenera. Several species are known to be vectors of various diseases and parasites which can affect animals.
CZ	Control Zone
DAFM	Department of Agriculture, Food and Marine (RoI)
DAERA	Department of Agriculture, Environment and Rural Affairs
DEFRA	Department for Environment, Food and Rural Affairs.(GB)
DVO	Divisional Veterinary Office
EC	European Commission. An executive of the European Union with responsibilities including proposing legislation and implementing decisions.
Equidae	Sometimes known as the horse family, is the taxonomic family of horses and related animals, including donkeys, and zebras,
Horse	The term 'horses' follows the common usage and means horses and ponies if no specific reference to ponies is made, but does not mean donkeys, zebras and any animal produced

	by crossing these species. N.B. that this differs from the definition in the AHS Regulations (NI) 2013
Infected premises (IP)	Any premises declared as such under Part 3 of the African Horse Sickness Regulations (NI) 2013
Inspector	A person appointed by the Department to be an inspector and includes a veterinary inspector.
Occupier	<ul style="list-style-type: none"> a) a person in sole occupation of premises, or where there are horses belonging to two or more persons on a premises, the person who has overall responsibility for the premises (“the main occupier”); b) any person who is not the main occupier but who has ownership or charge of any horse on the premises.
OIE	Office International des Epizooties
Premises	Includes any place N.B. this includes roads
PZ	Protection zone.
RZ	Restricted zone.
SCoFCA	EU Standing Committee on the Food Chain and Animal Health
SZ	Surveillance zone.
Third country	Any country that is not an EU Member State.
Vector	An insect of the genus <i>Culicoides</i> or any other species of arthropod capable of transmitting African horse sickness virus.
Viraemia	The presence of viruses in the blood
VO	Veterinary Officer. A person appointed to that grade by DAERA and referred to as Veterinary inspector in the African Horse Sickness Regulations (Northern Ireland) 2013
VS	Veterinary Service.

15. Annex B: Reference laboratories

15.1. National Laboratory for AHS

(Implementing Article 14 of Directive 1992/35/EEC)

The UK National Reference Laboratory for AHS is;

Institute for Animal Health
Pirbright Laboratory
Vector-borne Diseases Programme
Ash Road
Pirbright
Woking
Surrey GU24 0NF

The national laboratories for AHS are responsible for: (i) co-ordinating the standards and diagnostic methods laid down in each diagnostic laboratory of the Member State, (ii) for the use of reagents and (iii) for the testing of vaccines. To this end, they:

- may provide diagnostic reagents to diagnostic laboratories requesting them;
- will control the quality of all diagnostic reagents used in that Member State;
- will arrange comparative tests periodically;
- will hold isolates of AHS virus from cases confirmed in that Member State;
- will ensure the confirmation of positive results obtained in regional diagnostic laboratories.

15.2. National Laboratory for AHS virus vectors (*Culicoides* species)

Agri-Food and Biosciences Institute
Newforge Lane
Belfast
BT9 5PX

This *Culicoides* vector Reference Laboratory shall be responsible for:

- providing staff to collect vectors and if required to train others in vector collection;
- identification of insects collected to determine *Culicoides* sp acting as vectors;
- maintaining knowledge and providing advice on ecology, distribution, seasonality and control of vectors.
- developing novel techniques for the rapid identification of potential and proven vector species.

15.3. Community Reference Laboratory

(Implementing Article 15 of 1992/35/EEC)

Laboratorio de Sanidad Produccion Animal
Ministerio de Agricultura, Pesca y Alimentacion
28110 Algete, Madrid,
Spain

This laboratory has been designated by the European Commission as the Community Reference Laboratory for African Horse Sickness. (Directive 1992/35/EEC. Annexe II)

The Community reference laboratory has the following functions and duties:

- to coordinate, in consultation with the Commission, the methods employed in the Member States for diagnosing AHS, specifically by:
- typing, storing and supplying strains of AHS virus for serological tests and the preparation of antiserum;
- supplying standard sera and other reference reagents to the national reference laboratories in order to standardize the tests and reagents used in each Member State;
- building up and maintaining a collection of AHS virus strains and isolates;
- organizing periodical comparative tests of diagnostic procedures at Community level;
- collecting and collating data and information on the methods of diagnosis used and the results of tests carried out in the Community;
- characterising isolates of AHS by the most up-to-date methods available to allow greater understanding of the epizootiology of AHS;
- monitoring developments in AHS surveillance, epizootiology and prevention throughout the world;
- to assist actively in the diagnosis of AHS outbreaks in Member States by receiving virus isolates for confirmatory diagnosis, characterization and epizootiological studies;
- to facilitate the training or retraining of experts in laboratory diagnosis with a view to the harmonization of techniques throughout the Community;
- to carry out a mutual and reciprocal exchange of information with the other Reference laboratories for AHS designated by the International Office of Epizootics (OIE), in particular with regard to changes and developments in the world situation concerning AHS.