

# DEFRA'S OVERVIEW OF EMERGENCY PREPAREDNESS FOR EXOTIC ANIMAL DISEASES

(supplementing the Defra Framework Response Plan for Exotic  
Animal Diseases)

Presented to Parliament pursuant to Section 14A of the Animal  
Health Act 1981(as amended 2002)

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## FOREWORD

Contingency planning for exotic animal diseases remains the critical element of managing an effective response to an outbreak. Avian Influenza has captured most public attention over the last few years, but our own experiences this year of Foot and Mouth Disease and Bluetongue have shown us that we must have robust plans and be vigilant for a range of exotic animal diseases.

Last year we introduced a new format for our Contingency Plan. We removed policy information by specific animal disease and placed it on our public website. We produced two separate documents, a Framework Response Plan which is our operational manual for those involved in managing a response, and our Overview of Emergency Preparedness which provides details of how we've prepared for the operational response.

I am pleased to introduce the 2007 version of the Overview of Emergency Preparedness for Exotic Animal Diseases. Its purpose is to demonstrate the vast amount of work undertaken by Defra and Animal Health together with our operational partners and stakeholders to ensure that our level of emergency preparedness remains high. This has been work that has been critical in preparing us to be able to respond effectively to the number of challenges we have faced from animal diseases this year.

This document supplements Defra's Framework Response Plan for Exotic Animal Diseases. Whilst the response plan sets out our command and control structures and arrangements for managing an animal disease outbreak, this overview provides details of how our peacetime preparedness work translates into our operational response during an outbreak.

Animal Health takes the lead in the operational aspects of contingency planning for exotic animal diseases. Over the past year it has led the operational response to three avian influenza outbreaks as well as a foot and mouth outbreak and a bluetongue outbreak. Many lessons have been identified and these will assist us in improving our operational delivery in the future. We await the report from Iain Anderson's review of the Government's response to the 2007 foot and mouth outbreak and look forward to seeing lessons identified which can be incorporated in our future contingency planning.

What follows demonstrates that not only do we have dynamic and robust contingency plans in place to respond to an outbreak of exotic animal disease, whatever its size or scale, but we also have the operational capability to support these arrangements. We are also committed to ensuring that our policies enable disease to be contained and controlled in the most effective and efficient manner, in order to limit its impact upon our rural communities, our natural environment, and our economy.

I am confident that we will continue to work closely with our operational partners and stakeholders to ensure that we are ready and able to cope with any future challenges that may arise. Defra and Animal Health remain committed to working in partnership to improve our capability to respond for many years to come.

**FRED LANDEG**

Acting Chief Veterinary Officer

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# 1. Disease Information Summary

## Foot and Mouth Disease (FMD)

1.1. FMD is a highly infectious viral disease affecting cloven-hoofed animals, in particular cattle, sheep, pigs, goats and deer. Other susceptible animals include camelids, some wild animals such as coypu, deer and some zoo animals including elephants.

1.2. Fever is followed by the development of vesicles or blisters - chiefly in the mouth or on the feet. There are 7 main serotypes of virus, which produce similar clinical signs and which can only be differentiated in the laboratory.

1.3. FMD can spread by direct or indirect contact with infected animals. Infected animals begin excreting the virus a few days before signs of the disease develop. Pigs in particular produce large numbers of virus particles. The disease is spread mechanically by the movement of animals, persons, vehicles and other things, which have been contaminated by the virus. Airborne spread of the disease can also take place. The prevailing meteorological conditions and local topography determine the distance that the disease can travel and this may be considerable.

1.4. Meat from the carcasses of animals infected with FMD at the time of slaughter can transmit the virus. Outbreaks of the disease have been linked with the importation of infected meat and meat products.

1.5. Advice from the Department of Health is that it is very rare for humans to be affected by FMD. There has only been one recorded case of FMD in a human being in Great Britain, in 1966. The general effects of the disease in that case were similar to influenza with some blisters. The Food Standards Agency has advised that the disease has no implications for the human food chain.

1.6. The FMD virus can be destroyed by heat, low humidity, or certain disinfectants, but it may remain active for a varying time in a suitable medium such as the frozen or chilled carcass of an infected animal and on contaminated objects or in the environment.

1.7. Good biosecurity is required to stop onward spread.

1.8. The prompt detection and reporting of the initial outbreak of disease are crucial in limiting the ultimate scale of the outbreak.

1.9. Arrangements to enhance surveillance are being taken forward under Defra's Veterinary Surveillance Strategy. Part of this strategy aims to upgrade the use of information on the numbers and location of livestock, which will be important in the smooth operation of this contingency plan in the event of an outbreak. Management



of the outbreak will also depend upon the availability of geographical information systems and expertise, which is being developed with this plan.

1.10. Current policies for the control of an outbreak of FMD can be viewed online at <http://www.defra.gov.uk/animalh/diseases/fmd/default.htm>

## **Avian Influenza (AI)**

1.11. AI is a highly infectious viral disease that can affect most if not all species of birds. The clinical appearance of the disease depends upon the strain and subtype of virus and the species of bird infected.

1.12. Highly pathogenic AI (HPAI) viruses have the potential to cause severe disease in poultry, associated with a high death rate (up to 100%); the course of such disease can be so rapid the birds may die without showing signs of disease.

1.13. Infection with low pathogenic AI (LPAI) viruses usually results in milder, less apparent disease. However, some LPAI viruses can mutate into highly pathogenic strains and severe disease may be seen with concurrent infection or in immunocompromised birds.

1.14. It is possible for some species of birds such as wildfowl to be infected with avian flu viruses and show only mild or inapparent signs of disease thus acting as a potential source of infection to other birds. Some species of migratory wildfowl are considered as one of a number of risk factors for the spread of disease.

1.15. EU legislation to control and eradicate AI applies to HPAI viruses and LPAI viruses of subtypes H5 and H7. Flocks found to be infected with LPAI would be assessed. It is likely that such flocks would be culled.

1.16. Controls would apply to domestic fowls, turkeys, geese, ducks, guinea fowls, quails, pigeons (reared for meat), ratites (e.g. ostriches), pheasants and partridges and any other poultry reared or kept in captivity for breeding, the production of meat or eggs for consumption or eggs for restocking supplies of game.

1.17. It is possible that AI can be introduced to domestic poultry through contact with infective migrating wild birds, particularly wildfowl. Contact may be direct through mingling or indirect through contamination of feed, water, utensils or clothing, particularly with faeces. There is also a risk of introduction from the illegal import of live birds.

1.18. The AI virus has been shown to be infectious to humans and other animals. In rare cases, some HPAI strains have led to severe disease and deaths in people where infection has resulted from close contact with infected birds. There is a limited number of reported cases of person to person spread of AI, but no evidence of sustained transmission between people. AI viruses can exchange genetic material with human influenza viruses in humans or susceptible animals to emerge as new viruses which may be capable of being spread easily between people. This is what makes AI a potential threat to public safety. The global human population may have little or no immunity to a new influenza virus that significantly differs from recent or existing strains of human influenza viruses. So any outbreak of AI must be controlled quickly and workers and veterinarians in close contact with infected birds must be well protected. This contingency plan is in place to ensure this can be achieved.

1.19. Current policies for the control of an outbreak of AI can be viewed online at <http://www.gov.uk/animalh/diseases/notifiable/disease/ai/index.htm>

## Newcastle Disease (ND)

1.20 ND is a highly infectious disease affecting poultry and other birds. Disease is caused by infection with virulent strains of Newcastle disease virus (NDV). There are a variety of strains of NDV, which range in virulence. Low virulence strains may cause sub clinical or mild respiratory disease. Highly virulent strains can cause severe disease which is characterised by high death rates and a range of clinical signs. Control is targeted at strains with a high pathogenicity (ability to cause severe disease).

1.21 The severity of the disease also varies depending upon the species, degree of immunity and age of bird, environmental conditions and general health status of the flock.

1.22 Controls would apply to domestic fowls, turkeys, geese, ducks, guinea fowls, quails, pigeons, ratites (e.g. ostriches), pheasants and partridges and any other poultry reared or kept in captivity for breeding, the production of meat or eggs for consumption or eggs for restocking supplies of game.

1.23 It is possible that ND could be introduced to domestic poultry by contact with infective wild birds, especially pigeons or indirectly through contamination of feed or objects. The virus can be carried on objects or clothing contaminated with excretions from infective birds, particularly faeces. Such material could be imported on clothing or shoes of people that had been in contact with infective birds.

1.24 Illegal imports of live birds also pose a risk of introduction.

1.25 Good biosecurity reduces the risk of onward spread.

1.26 The ND virus has been shown to be infectious to humans and other animals, although severe disease has only been observed in birds. Infection in humans occasionally results in mild disease characterised by conjunctivitis. The majority of human cases have occurred in laboratory workers or people handling live vaccines. NDV does not pose a significant risk to public health.

1.27 Current policies for the control of an outbreak of ND can be viewed online at <http://www.defra.gov.uk/animalh/diseases/notifiable/newcastle/index.htm>

## **Classical Swine Fever**

1.28. Classical Swine Fever (CSF) is a highly contagious viral disease, which affects pigs. Infected animals suffer a variety of clinical signs including fever, loss of appetite, purple discolouration of the skin, and constipation followed by diarrhoea. More severe cases of the disease may result in abortion or weak litters, as well as nervous signs such as tremors or convulsions, particularly in newborn piglets. The disease can result in mortality of affected animals.

1.29. The movement of infected pigs is a common way of spreading CSF. However all excretions from an infected animal contain the virus. Therefore any animal, human, or object which has been in contact with such excretions and then in turn comes into contact with a pig, can spread the disease. Although other animals are able to mechanically spread the disease through contact with infected excretions it is not possible for them to display clinical signs of CSF. A main source of its spread appears to be from pigs eating infected pork or pork products. In this form the CSF virus can remain active for many months.

1.30. When CSF first enters a herd it can spread very rapidly; a high proportion of the pigs may become ill with a high fever, and many of them may die. The clinical signs of CSF are very similar to another serious notifiable disease of pigs, African Swine Fever (ASF), which is caused by an unrelated virus and they can only be differentiated by laboratory tests. Recently, less virulent forms of CSF have occurred which may not be easy to recognise. A second complication in the diagnosis of CSF is the emergence of two new pig diseases, Post-Weaning Multi Systemic Wasting Syndrome (PMWS) and Porcine Dermatitis and Nephropathy Syndrome (PDNS). PDNS, which may be a sequel to PMWS, can easily be confused with CSF and ASF.

1.31. A potential route for the introduction of CSF into the United Kingdom is through the illegal import of infective porcine meat products leading to the subsequent infection of pigs by ingestion. There is also a risk of disease introduction from the illegal import of infective live pigs, however the level of risk is difficult to quantify.

1.32. Because CSF cannot be distinguished from ASF by either clinical or post-mortem examination, all suspected cases of swine fever must be confirmed by laboratory examination.

1.33. Advice from the Department of Health is that humans are unlikely to be affected by CSF. The Food Standards Agency (FSA) has advised that the disease has no implications for the human food chain.

1.34. Current policies for the control of an outbreak of CSF can be viewed online at <http://www.defra.gov.uk/animalh/diseases/notifiable/csf/index.htm>

## **African Swine Fever (ASF)**

1.35. African Swine Fever (ASF), otherwise known as African pig disease or warthog disease is a highly infectious viral disease of pigs. Some strains of the virus can cause severe disease and high mortality.

1.36. The clinical signs are indistinguishable from those seen in classical swine fever and vary with virus strain.

1.37. Disease caused by ASF virus can vary in severity, being either acute, sub acute or chronic. In parts of Africa where the disease is endemic wild pigs and hogs can be infected without showing signs of disease. However, infection of domestic pigs with virulent strains of the virus may result in very high death rates.

1.38. Acute disease is characterised by a period of fever which is followed by a range of clinical signs such as: appearance of blotchy skin lesions, depression, inappetence, weakness, vomiting, diarrhoea, nasal and ocular discharges, coughing, breathing difficulties, rapid pulse rate, reluctance to move. Groups of affected pigs may huddle together and sows may abort.

1.39. Sub acute disease is characterised by fever that may persist for up to 2-3 weeks and less intense clinical signs such as depression, lethargy and abortion in pregnant sows. The mortality rates due to sub acute disease vary and may be less than 5%. Recovered pigs and their meat products may remain infectious for several weeks.

1.40. Chronic disease is characterised by weight loss, intermittent fever, skin ulcers, arthritis, swelling over joints and respiratory signs. Mortality due to chronic disease is low.

1.41. The severity and distribution of lesions vary with virus strain. Haemorrhages occur in the lymph nodes, heart and kidneys; haemorrhages in other organs are variable in incidence and distribution.

1.42. On the grounds of clinical signs and post-mortem findings the disease and pathology of the disease may be confused with classical swine fever. However, CSF virus and ASF virus are not related and laboratory tests are required to differentiate between the two diseases. Immunity to CSF does not confer immunity to ASF or vice versa.

1.43. ASF can be spread by direct contact, ingestion of contaminated porcine meat products and by specific tick vectors. The virus is present in all secretions and excretions during the acute period of infection. Pigs are usually infected by nuzzling, although primary infection may sometimes occur through the lower respiratory tract. At present there are not any significant numbers of specific tick vector species in the UK. Therefore the current risk of spread by this route in the UK is negligible.

1.44. A potential route for the introduction of swine fever to the United Kingdom is through the illegal import of infective porcine meat products leading to the subsequent infection of pigs by ingestion. There is also a risk of disease introduction from the illegal import of infective live pigs, however, the level of risk is difficult to quantify. It is also possible for infective ticks to introduce disease to the UK.

1.45. Direct contact with infected pigs up to one month after infection and the ingestion of waste food containing uncooked pig meat or pig meat products are the main ways by which infection spreads.

1.46. Because ASF cannot be distinguished from CSF by either clinical or post-mortem examination all suspected cases of swine fever must be confirmed by laboratory examination.

1.47. Advice from the Department of Health is that humans are unlikely to be affected by ASF. The Food Standards Agency (FSA) has advised that the disease has no implications for the human food chain.

1.48. Current policies for the control of an outbreak of ASF can be viewed online at <http://www.gov.uk/animalh/diseases/notifiable/asf/index.htm>

## Swine Vesicular Disease (SVD)

1.49. Swine vesicular disease (SVD) is a contagious viral disease of pigs, the signs of which in the acute forms of the disease are clinically indistinguishable from the other vesicular diseases of pigs, notably Foot and Mouth disease (FMD).

1.50. Clinical disease is of high morbidity in groups of pigs. Initially there is a fever and a transient loss of appetite followed by the development of vesicles or blisters. Lameness develops due to the eruption of vesicles at the top of the hooves and between the toes. Vesicles may also develop on the snout, tongue and lips.

1.51. The disease usually appears suddenly, but does not spread as rapidly as foot-and-mouth disease. Recovery is usually complete within two or three weeks. The descriptions of the signs of SVD will vary according to the age of the pigs affected, the conditions under which they are kept, and the strain of SVD virus involved.

1.52. The disease is usually mild, but in acute cases there can be some loss of production. However, due to its similarity to FMD, it is of economic importance and as a result strict control measures are in place.

1.53. Infection can start in abrasions on the feet or through the tonsil depending on the route of exposure to infected material. Vesicular fluid/material, faeces and any viraemic tissue are all highly infective. The incubation period is 2-7 days and pigs can excrete virus prior to exhibiting disease for a period of up to 3 weeks.

1.54. The SVD virus is very resistant to chemical and physical disinfection (more so than FMDV) and is only inactivated by extremes of pH and temperatures. The virus can persist in manure for 6 months and indefinitely in pork or pork products that are not heated to 56 degrees centigrade for 1 hour.

1.55. Clinical disease has only been observed in pigs. Advice from the Department of Health is that humans are unlikely to be affected by SVD. The Food Standards Agency (FSA) has advised that the disease has no implications for the human food chain.

1.56. A potential route for the introduction of SVD to the United Kingdom is through the illegal import of infective porcine meat products leading to the subsequent infection of pigs by ingestion. However, the ban on swill feeding has reduced this risk to farmed pigs; although illegal feeding practices or scavenging on discarded illegally imported pork and pork products remain a concern. Feral pigs and wild boar are more likely to acquire infection through scavenging than farmed pigs.

1.57. There is also a risk of disease introduction from the illegal import of infected live pigs. However, in view of strict import regulations there is negligible risk from the legal import of live pigs or porcine meat products. There is also a risk from movement of contaminated pig transport vehicles.



1.58. Current policies for the control of an outbreak of SVD can be viewed online at <http://www.defra.gov.uk/animalh/diseases/notifiable/svd/index.htm>

## Rabies

1.59. Rabies is a viral disease which affects humans and all mammals, including cats, dogs, wildlife and farm animals.

1.60. The disease is absent from land mammals in the UK but has been detected at a low prevalence in certain species of bats in GB. It is invariably fatal once signs of the disease have appeared. Infection is almost always spread by the bite of an infected animal because the virus may be present in the saliva approximately two weeks before the first clinical signs appear.

1.61. After infection it may take several months for the disease to develop. At first, affected animals show changes in their behaviour. They may appear anxious or irritable, or wild animals may seem unnaturally friendly and approach people. As the disease progresses they begin to drool saliva, may become excited and aggressive, may attack people or other animals, and may have convulsions.

1.62. Finally they become paralysed and die, usually within days of the first signs of illness. Some species of bats may carry certain strains of lyssaviruses without developing disease themselves immediately, but can still on very rare occasions spread it to other animals or humans.

1.63. Current policy on rabies can be viewed online at <http://www.defra.gov.uk/animalh/diseases/notifiable/rabies/index.htm>

## **Bluetongue (BT)**

1.64. Bluetongue (BT) is a severe and highly infectious disease of sheep and some species of deer. Most ruminants are susceptible to a variable degree. Globally it is one of the most economically important diseases of livestock. It occurred in the UK for the first time in September 2007, after infected midges from Northern Europe reached East Anglia.

1.65. The disease is caused by a virus which is transmitted by certain species of biting midges (adult female Culicoides). Bluetongue virus (BTV) can also infect all other species of domestic and wild ruminants but does not usually cause disease in them. Therefore, some ruminants which appear to be healthy can act as reservoirs (carry high levels of the virus and provide a source of further infection in sheep).

1.66. The virus does not affect people.

1.67. The severity of the disease depends upon the virus strain as well as the species and breed of infected host. Some live vaccines (originally developed in South Africa for use in local breeds of sheep) can cause severe disease in European breeds.

1.68. The disease occurs only where the adult vector midges are abundant and active.

1.69. Current policy on bluetongue can be viewed online at <http://www.defra.gov.uk/animalh/diseases/notifiable/bluetongue/index.htm>

## **Equine Infectious Anaemia (EIAV)**

1.70. Equine Infectious Anaemia (EIA) or "swamp fever" is a viral disease of horses, mule and donkeys causing intermittent fever, anaemia, emaciation and death. It can be transmitted by mechanical transfer of blood by biting insects and occurs typically in low-lying swampy areas.

1.71. The disease is caused by infection with equine infectious anaemia virus (EIAV), a type of lentivirus. Animals may be acutely, chronically or subclinically affected. The incubation period is variable, from a matter of days to a few months but generally from 1 to 3 weeks. Antibodies usually develop 7 to 14 days after infection and last for life. There is currently no cure or vaccine available to prevent infection by EIAV.

1.72. EIA does not cause disease in humans.

1.73. EIAV is transmitted from infected to uninfected horses through transfer of infected blood or blood products. This may occur via insect vectors such as biting flies (including horse and stable flies) and mosquitoes, transplacentally from infected mares to their unborn/newborn foals or through use of contaminated medical instruments, administration of infected blood products and the use of unauthorised veterinary medicinal products. Infection between mare and foal may also occur through infected colostrums or milk or through fly bites. Inhalation of aerosolised infected material has recently been suggested as a potential mode of transmission in special circumstances.

1.74. Current policy on equine diseases is under review.

## **Equine Viral Encephalomyelitis (EVE)**

1.75. Equine Viral Encephalomyelitis is a generic term for a number of diseases (listed below) and are infectious mosquito-borne disease of horses characterised clinically by paralysis and other signs of nervous derangement. With certain of these diseases, e.g. West Nile virus, the same virus strains can cause serious human disease as well as infecting poultry and other farmed birds including quail, ostriches and emus.

1.76. The EVE diseases are:

Borna, Eastern Equine Encephalomyelitis (EEE), Japanese Equine Encephalomyelitis (JEE), Venezuelan Equine Encephalomyelitis (VEE), Western Equine Encephalomyelitis (WEE),

Encephalomyelitis is caused by any alphavirus or flavivirus, though excludes louping ill Hendra disease and West Nile virus (see below).

1.77. Birds, small mammals and possibly reptiles and amphibians are the natural reservoir of the virus. Transmission of infection to horses and man occurs following bites by mosquitoes or biting flies. The disease is not directly contagious between horses and man.

1.78. The incubation of the disease after infection with these viruses is from 1 to 3 weeks. In the initial stage clinical signs include fever, which may be accompanied by depression, and loss of appetite, but the reaction may be so mild it goes unnoticed. The virus causing EEE is the most virulent of the three types and the symptoms produced are the most severe, with a case fatality rate of up to 90%. The level of virus in the blood may be so high with this strain that horse to mosquito to horse cycling can occur.

1.79. The nervous signs, when they appear, are hypersensitivity to sound and touch with periods of excitement and restlessness with apparent blindness. Affected horses may walk blindly into objects or walls. Muscle twitchings may occur in the face and shoulder muscles. A period of severe depression follows.

1.80. Current policy on equine diseases is under review.

## **West Nile Virus (WNV)**

1.81. West Nile Virus (WNV) is a viral infection of birds, horses and humans, spread by the bite of infected mosquitoes that can cause encephalitis (inflammation of the brain) or meningitis (inflammation of the lining of the brain and spinal cord).

1.82. WNV can be transmitted to humans and animals via the bite of an infected mosquito. A mosquito becomes infected by biting wild birds that carry the virus. The infection is a zoonosis, i.e. a disease which can be transmitted between animals and humans. In the case of WNV, the virus is transmitted between birds and man, though a wide range of other animal species can also become infected.

1.83. The horse seems to be the most susceptible to infection but most cases are sub-clinical with horses showing no obvious signs of disease but becoming seropositive (i.e. positive to the blood test for antibodies to the virus). Affected animals develop a fever and often encephalitis with nervous signs. Whilst birds are the main carrier and most remain apparently unaffected, some species are susceptible to disease - especially corvids (crow family). Mass die-offs can occur in these species.

1.84. Poultry can be infected and have been used in the USA as "sentinels" to detect infection in areas thought to be at risk. They do not usually develop disease. WNV is primarily an infection of birds and although a range of other animal species, such as goats and sheep can be infected, these species only develop low levels of virus.

1.85. Many infected people show no symptoms. When disease does occur, it is usually a flu-like illness with fever. There is currently no evidence that WNV can be spread directly from birds to people.

1.86. Control is based on the restriction of movement of suspected animals and their contacts combined with clinical observation.

1.87. Current policy on equine diseases is being reviewed though further information can be found at:

<http://www.defra.gov.uk/animalh/diseases/notifiable/westnilevirus/index.htm>

## **Hendra Virus (HeV)**

1.88. Hendra virus (HeV) (formerly known as equine morbillivirus) was first isolated in 1994 in Hendra, Australia. The virus causes respiratory and neurological signs in horses and humans.

1.89. It is likely that the natural reservoirs for HeV are bats (flying foxes) and that infection is transmitted by direct exposure to body fluids and excretions. It is clear from exhaustive research in Australia that HeV infection of horses is not a usual occurrence with very few outbreaks having occurred there. The first outbreak was 4 weeks prior to the second and 800km away. The second had several horses in close contact with a brood mare, and pregnancy is thought to have played a part in allowing susceptibility.

1.90. A further outbreak was in a single horse and 4 years later. No link has ever been established between them. Experimental challenge of a range of animals with HeV showed that the disease could be reproduced in cats and guinea pigs. A survey of 500 cats from the Brisbane area showed that none tested positive for HeV.

1.91. Following the negative results of testing a wide range of animal species for infection with HeV, the search was focused on animals present in the outbreak areas and with possible contact with horses. Fruit bats (flying foxes) fitted these criteria and antibodies to HeV were found in all four species of fruit bats in Australia in 1996. Follow-up testing has shown that about 13% of these bats had been exposed to HeV and infected bats have been found from Darwin across to the east coast and south to Melbourne. This finding was followed in September of the same year by the isolation of an HeV-like Paramyxovirus (Bat Paramyxovirus - BPV) from a grey-headed fruit bat. A further four isolates of the virus have been made from three species of fruit bat.

1.92. Flying foxes are dispersed widely throughout Australia and overseas and are an Australian native species. As only two outbreaks of HeV infection have been recorded it appears that spill over of this virus from a natural host to other species is a very rare event.

1.93. Despite evidence that 13% of fruit bats were exposed to HeV, it appears that they do not pose a significant risk to people. This is based on the negative results of testing of 130 people, all with close contact with flying foxes and the fact that all three human cases of infection with HeV appear to have been contracted from acutely ill horses.

1.94. Therefore the risk of a Hendra virus incursion into the UK is very low. If it did occur, it would most likely be in horses with a history of recent travel to countries where fruit bats are found.

1.95. Current policy on equine diseases is being reviewed.

## **2. Preparedness**

### **Animal Health and Emergency Response to Exotic Animal Disease**

2.1. Animal Health, an executive agency of Defra, takes the lead in the operational aspects of containing and controlling an outbreak of exotic animal disease.

2.2. Disease control operations are centrally coordinated by Defra's National Disease Control Centre in London. Alongside this the local response is managed by a Local Disease Control Centre (LDCC) which would usually be based at the appropriate Animal Health Divisional Office (AHDO).

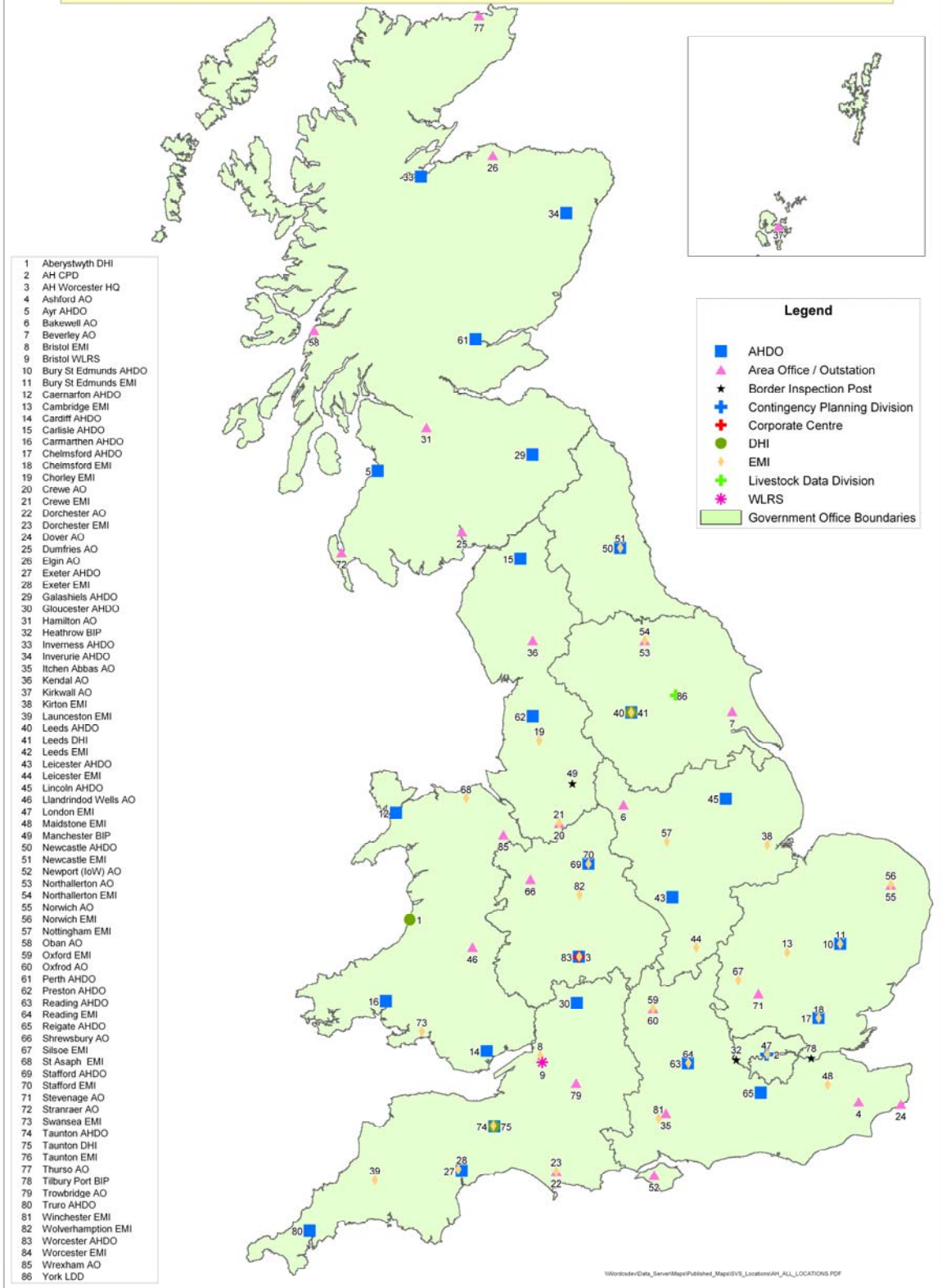
2.3. Defra's Framework Response Plan for Exotic Animal Diseases (which accompanies this document) sets out the structures and systems which have been put in place to coordinate the disease control operation, together with the roles and responsibilities of the individuals involved.

2.4. This overview of emergency preparedness describes Animal Health's contingency planning function and its role in responding to an outbreak of animal disease. It also demonstrates Defra/Animal Health's capability in managing a outbreaks of different types of animal disease of varying size and scale.

2.5. Defra and Animal Health work closely with a variety of other agencies and operational partners such as Local Authorities, the Health Protection Agency (HPA) and the Veterinary Laboratories Agency (VLA) to ensure that any response is integrated and coordinated, and involves the appropriate specialists.



## ANIMAL HEALTH LOCATIONS & GOVERNMENT OFFICE BOUNDARIES



This map shows the locations of the 24 Animal Health Divisional Offices (AHDOs) which may be used as Local Disease Control Centres, depending on the type of disease and scale of the outbreak

## Human Resources

2.6. There are many individual roles which contribute to our ability to be prepared to respond to an outbreak of exotic animal disease. The following describes these functions, and the training which is provided to ensure that each individual concerned is able to carry out their duties effectively.

### **Animal Health Divisional Office (AHDO) Readiness and Resilience Managers (RRMs)**

2.7. Each of the AHDOs throughout Scotland, England and Wales have appointed a Readiness and Resilience Manager (RRM). The RRM is responsible for supporting the Divisional Veterinary Manager (DVM) in the preparation of contingency and emergency plans, so that the AHDO maintains a continuous state of emergency readiness and resilience within a Government Office (GO) Regional strategy framework, and in line with national Defra and Animal Health policies and procedures.

2.8. The primary role of the RRM is to support the DVM in ensuring that their AHDO is always at the required state of readiness and has the resilience to deal with emergencies caused by animal diseases and also to deal with situations where animal welfare is in jeopardy as a consequence of other types of emergencies. However, the scope of the work undertaken by each AHDO will differ and reflect the particular animal health and welfare needs within the area for which it has responsibility. As a consequence, there may be differences in the responsibilities of RRM's from office to office. Their primary responsibilities are as follows:

- To ensure that the AHDO has in place a contingency plan that complements the Defra Contingency Plan and Animal Health instructions and arrangements to deliver readiness as set out in and measured by the Emergency Response Management Assurance Scheme (ERMAS).
- To ensure that the AHDO has in place business continuity plans to deal with incidents that may interrupt the delivery of services by the AHDO.
- To build effective networks through the Regional Contingency Planning Groups, with Animal Health Contingency Planning Division and with other RRM's to share best practice and to ensure that the AHDO's contingency plans and processes are consistent with national policies and procedures.
- In liaison with Animal Health Contingency Planning Division (CPD) to assess current coverage and capability of locally based contingency

contracts and where necessary to propose additional contractors and thereafter to keep under continuous review.

- To work with the DVM and other staff in the AHDO to plan, organise and deliver AHDO exercises as set out in the National AHDO Exercise Programme.
- To agree and establish with the DVM the role that the RRM would take in an outbreak.

### **Regional Operations Directors (RODs) & Divisional Operations Managers (DOMs)**

2.9. Members of the Senior Civil Service have been appointed for three year terms as contingency Regional Operations Directors (RODs) to take up post in the event of an outbreak of any exotic animal disease covered by this plan to lead the LDCCs. They are each allocated to a group of AHDOs in England. Animal Health Contingency Planning Division (Animal Health CPD) maintains a list of RODs.

2.10. Grade 6 Defra staff (or Grade 7s on temporary promotion) have been appointed for three year terms as contingency Divisional Operations Managers (DOMs) to take up posts in the event of an outbreak of any animal disease covered by this plan and to work alongside DVMs to manage the administrative (non-veterinary) part of the operation. Like RODs, they have been allocated to a group of AHDOs in England

2.11. During their period of appointment, the contingency RODs and DOMs will spend 5 days a year training, developing effective links with AHDOs, DVMs and operational partners and local stakeholders and taking part in contingency planning exercises.

2.12. There are similar arrangements in Scotland and Wales.

### **Veterinary Resource**

2.13. Veterinary staff from Animal Health, Defra policy divisions and other government departments will provide the initial emergency response capability.

### **Contingency Local Veterinary Inspectors (CLVIs)- Non Government Veterinary Personnel**

2.14. CLVIs have an important role which has been negotiated in peacetime.

2.15. In event of outbreak of exotic notifiable disease CLVIs would be called upon immediately to undertake roles that would otherwise be undertaken by permanent Animal Health Veterinary staff. The roles could include:

- providing veterinary expertise to teams within the LDCC, e.g. to prioritise tracings or job allocations.
- providing veterinary expertise that can take account of the local situation, e.g. husbandry, geography, marketing, movements etc.
- advice on the disease situation to incoming staff.
- approval of licence applications.
- acting as a point of contact and mentoring for casual or temporary veterinary staff undertaking work in the Field, e.g. Veterinary Inquiries, supervision of slaughter or killing, assessment of dangerous contacts, etc.
- It is not the intention that they will undertake routine field work. Other veterinary surgeons will provide this resource and arrangements relating to this are being taken forward separately.

Actions in pre outbreak:

2.16. Initially on appointment there will be a significant training requirement for these CLVIs. This will need to cover:

- Similar induction to new Veterinary Officers (VOs) (everything from layout of the AHDO/LDCC, through financial procedures in Defra and Animal Health to HR policies etc).
- Awareness and use of Veterinary Instructions.
- Establishment of LDCC and roles the CLVI would fill.

2.17. Up to four contingency LVIs have been appointed to each AHDO. They have 3 days training a year and will supplement Animal Health veterinary resource within the LDCC in the event of an outbreak.

2.18. Their engagement includes:

- Training for suitable roles (excluding Veterinary Inquiries or other Field Work) as part of emergency preparedness and during an outbreak of any exotic disease.

- Providing a rapidly available local veterinary resource for augmenting emergency response in the event of an outbreak.

2.19. Exercising – a component of training is the involvement of the LVIs in exercises.

2.20. Emergency Preparedness: As the CLVIs become familiar with their roles the amount of such preparatory training that is required will decrease. Involvement in exercises will still be required but it is likely that there will be a number of days for which the contingency LVIs are available for other activities (assuming a commitment of 3 days per year).

2.21. The CLVIs could be used on these “spare” days on tasks that could lead to an improvement in the wider context of local emergency preparedness.

2.22. In addition to providing advice to the local community on disease prevention, suspicion etc, these staff might be able to act as the Department’s ears, eyes and mouthpiece, listening to local concerns, and providing feedback to the DVM and explaining the Department’s policies and views.

## **Overseas Government Veterinary and Technical Personnel**

2.23. The International Animal Health Emergency Reserve (IAHER) agreement was signed in 2004 with Ireland, USA, Canada, Australia and New Zealand to provide vets and technical staff in the event of an outbreak of disease. Assistance may also be sought from other EU member States and is arranged by means of contact between Chief Veterinary Officers (CVOs).

## **Emergency Volunteers Register**

2.24. In the event of an outbreak of exotic animal disease Animal Health HR will liaise with Defra’s Human Resource Services Division (HRSD) and will co-ordinate action on the redeployment of administrative staff from the Defra Emergency Volunteers Register, and other staff, to the NDCC and to LDCCs. They will also lead on the recruitment of veterinary, technical and administrative personnel except those employed on a short-term (casual) basis who will be recruited locally taking advice from Animal Health Human HR.

## **Training**

### **Animal Health Staff (Veterinary, Technical and Administrative staff)**

#### **Veterinary staff**

2.25. All new veterinary entrants attend a one-day course on exotic viral diseases at the Institute for Animal Health, Pirbright, in addition to general and specific training related to other work areas including training in notifiable disease procedures. Selected individuals attend specific Continuing Professional Development training, e.g. in Epidemiology. Courses are held, as required, to ensure an adequate resource of trained staff.

### **Technical staff**

2.26. Some training packages are now in place and more are being developed for existing staff which would also be suitable for casual staff employed during an outbreak. All new technical staff receive background training in animal disease awareness, this covers the specific roles in a disease outbreak.

### **Staff involved in finance or procurement**

2.27. AHDO Finance staff will be involved in a training programme to ensure they are trained to use all appropriate systems such as : Buy4Defra and iExpenses to support the financial management of the outbreak from the initial financial decisions, including setup of the LDCC, and all the subsequent financial information.

2.28. They will also be trained to set up the appropriate files to capture financial information that will support any claim to both the EU and HM Treasury and also provide timely, financial management information to senior management.

### **Administrative staff**

2.29. Staff in AHDOs are involved in a structured programme of training designed to equip them with the skills and knowledge to provide administrative support during an outbreak situation and to support the requirements for Finance and Management Information. Additionally, there is local and national level exercising of the contingency plan. The FMD Plan in particular, must be exercised at national level at least twice within a five year period under the terms of the EU FMD Directive. Some local offices will also participate in these national exercises, testing their ability to function as a LDCC during a national disease outbreak.

### **Key Administrative, Field & Technical Staff**

2.30. The NDCC and LDCCs will require middle managers who are able to take up key positions on confirmation of disease. Key posts have been identified in the NDCC & LDCCs, together with job descriptions and Day 1 tasks.

2.31. Staff in an AHDO in which an LDCC is being set up, and in Animal Health more widely, will be the first to be called upon if disease is confirmed. Key administrative, field and technical personnel will be expected to take part in contingency exercises. This is part of their job descriptions and work objectives.

## **General Field, Technical and Administrative Staff**

2.32. The NDCC and LDCCs will require general field and administrative staff to support key personnel and veterinary colleagues in the eradication of disease.

2.33. If necessary, at the start of and during an exotic animal disease, the Chief Executive of Animal Health will seek Defra Emergency Management Board authority to require the release of staff from Defra and Defra Agencies to work on emergency duties. As appropriate, the Emergency Management Board will provide clear direction to Divisions, Agencies and work groups, in order that non-essential staff can volunteer their services and be released quickly. First called will be those staff on the Defra Emergency Volunteers Register and those who have left the Department but have said they would wish to be contacted in the event of an emergency.

2.34. Animal Health HR in conjunction with Defra Shared Services, will lead on coordinating staff deployments in response to needs.

2.35. The Department will also make use of the central Memorandum of Understanding on Mutual Aid and the Redeployment of Human Resources, which will be triggered if necessary. This relates to the loan of staff from other government departments.

### 3. Arrangements

#### Arrangements for Regional Response for exotic animal disease outbreaks

3.1. To ensure that the disease control operation and the wider local response are integrated effectively the following framework sets out a flexible framework that can be tailored to meet the needs of a wide range of scenarios:

- On confirmation of a case of an exotic animal disease, Defra/Animal Health will establish an LDCC and invite representatives from key operational partners to join them to assist in managing the animal disease outbreak. Defra/Animal Health communications will produce initial communications messages and top lines briefs and will cascade these to regional teams for cascade locally. The Government News Network (GNN) will liaise to ensure the lines reflect the local position if appropriate.
- The ROD will brief the appropriate Regional Resilience Director (RRD) and agree on whether convening a Regional Civil Contingencies Committee (RCCC) is an appropriate and proportionate response to the outbreak. If it is agreed then a request will be made via Department for Communities and Local Government (DCLG) to this effect. Additionally the ROD should invite a member of the RRD's team to join the LDCC along with other local operational partners involved in assisting with the management of the outbreak.
- Unless there are strong reasons to the contrary, the expectation is that the Regional Resilience Team (RRT) will convene a meeting of the RCCC to brief responders on developments and report back any concerns i.e. the RCCC meets at level 1 (for briefing). At this stage, unless significant wider impacts (e.g. health, economic, social, environmental) emerge that require a co-ordinated local response, it is not expected that local Strategic Co-ordinating Groups (SCGs) will be convened (though local representatives will of course wish to cascade information to local networks). The RCCC will be able to take an overview of the wider impacts of an outbreak which may cross local boundaries, engaging local partners as necessary.
- If it is not considered necessary for the RCCC to convene, the RRD and the ROD, in consultation with the chair (designate) of the SCG, need to agree if a local SCG should be convened to cover wider consequences. Local operational partner representatives at the LDCC have a responsibility to report back to their senior managers and other relevant people in their organisations, not just their specific disciplines, to keep them informed on the progress of the disease control operations. Local authorities should ensure that there are effective internal flows of information on all necessary elements of the response,



especially between trading standards and emergency planning disciplines.

- Where a local SCG is established, they will work in close collaboration with the Regional teams who will be taking a close interest in the wider impacts work on behalf of central government (e.g. public information, public health issues and economic impact). Where an RCCC is not established, SCGs will liaise with the RRD to facilitate regional co-ordination and effective flow of information to the centre. Where an RCCC is established alongside several SCGs it is likely to meet at level 2 of CONOPS (Cabinet Office Concept of Operations).

No two incidents are the same and while these arrangements set out default arrangements for planning purposes, in practice, they may need to be tailored to meet the precise circumstances at the time.

### Regional roles

- Regional Resilience Teams are responsible for ensuring that any wider impacts that are, or may, affect the region are identified and addressed at an appropriate level. The RRD will liaise with the ROD to agree a mutually convenient location for any meeting of RCCC and ensure that public information and other briefing material is cascaded to regional and local operational partners. The RRD in consultation with the ROD will be responsible for agreeing advice to local responders as to whether SCGs should be established locally to share information the outbreak and manage any wider impacts. (Where SCGs are convened, they will normally be chaired by the lead local authority and will work in close collaboration with the RRD who will provide co-ordination of the wider impacts work through the RCCC mechanism). The RRTs will also be responsible for ensuring briefing and central messages are quickly disseminated to local authorities and other operational partners as required.
- Cabinet Office will agree in consultation with Defra (including the ROD) and DCLG (including the RRD) whether meetings of RCCC should be convened and in which regions. Cabinet Office will also ensure that a co-ordinated top lines brief is prepared, in consultation with Defra and other departments, and shared with national, regional, and where appropriate local stakeholders.
- Local authorities - in conjunction with other local partners - should be ready to convene local SCGs where necessary to share information on the outbreak and to manage any wider impacts that emerge. The Local Government Association (LGA) would normally be represented in COBR (Cabinet Office Briefing Rooms) via DCLG/Regional Coordination Unit (RCU). They will work with the GNN as required to

ensure local issues and impacts are reflected in communications packages. They will ensure effective communications within their organisation of information reported by their representative at the LDCC.

### **Operational Instructions**

3.2. Operational instructions are available for Animal Health staff and for any other staff assisting in an outbreak. They provide instructions and guidance for key tasks in responding to an outbreak of exotic animal disease.

### **Contingency Contracts**

3.3. Defra Procurement and Contracts Division (PCD) and Animal Health Divisional Offices (AHDOs) have arranged national and local contingency agreements and supply contingency arrangements to meet anticipated needs in an exotic animal disease outbreak. The suppliers are vetted and subjected to regular review and appraisal by Defra PCD to ensure their ongoing suitability for use in an outbreak.

3.4. These agreements and arrangements cover all the relevant supply chains and include culling and disposal, shepherds and gatherers, poultry catchers and ancillary equipment; carcase pick-up and transportation; preliminary cleansing and disinfection (C&D) including pressure washers, mobile units; slurry treatment; lagoon and environmental protection measures; electrical works and technical services e.g. dairy engineers. A list of call-off contracts/agreements and contingency supply arrangements is available on-line for internal use on the PCD intranet site with links from Animal Health operational instructions.

3.5. Supplementary lists of preferred and vetted suppliers for use in an emergency situation are also available for internal use. These suppliers are a back-up to the contingency agreements already in place and are likely to be engaged where existing contracts cannot meet the demand. The Procurement Emergency Response Team (PERT) will be responsible for negotiating robust contracts with these suppliers should the extent of the outbreak require additional supply.

3.6. Information on the capability is available to AHDO staff to allow effective invocation of contracts and deployment of resources.

3.7. Details of agreements made and preferred suppliers available to AHDOs are on the PCD webpage for internal use. DVMs liaise with PCD to ensure timely, scalable and appropriate supply arrangements in the event of an outbreak of an animal disease covered by this plan. PCD emergency contacts and their details are available for internal use.

### **Equipment and stores**

3.8. Provisions of stores and equipment at National level: Animal Health has a Service Level Agreement with VLA Weybridge. Under the terms of this agreement

equipment required by Animal Health to carry out its routine duties are provided within defined time limits. VLA normal stocking levels would provide for initial requirements until emergency contracts with key suppliers take effect. Animal Health has a national network of stores facilities.

3.9. Divisional minimum stocking levels: At the local level, each AHDO is required to hold or have immediate access to sufficient equipment to deal with up to 10 cases in the first 48 hours, including provision for equipping up to 20 additional Veterinary personnel. Stock levels are managed by designated local staff, who have day to day responsibility for monitoring availability and serviceability of stores. A new generic stock control system is being developed this will provide visibility of all stock held within Animal Health allowing for mutual support across AHDOs.

## **Health and Safety**

3.10. On confirmation of an outbreak of exotic animal disease the Departmental Health and Safety Manager (DHSM) will allocate a safety professional(s) to be attached to each LDCC. The name of this person will be passed to the relevant Regional Operations Director (ROD) or Divisional Veterinary Manager (DVM) as will details of arrangements for local welfare provision.

3.11. The DHSM will ensure that there is sufficient health and safety professional resource to support the required working pattern in the LDCC.

3.12. Where the disease is zoonotic, the DHSM will ensure that the relevant arrangements in place with the occupational health provider are put into place and operated consistently throughout Defra. They will also ensure that a similar regime is in place with the Health Protection Agency (HPA) (if involved), whereby the HPA and the occupational health provider maintain appropriate contact.

3.13. The DHSM will provide strategic safety advice and guidance to the Animal Health Director of Field Services. The Animal Health, Health and Safety Manager will have oversight of the operational aspects of the work. The DHSM and the Animal Health HSM will work together to ensure that risks are appropriately mitigated.

3.14. The DHSM will inform the relevant senior managers within the Health and Safety Executive (HSE) of developments and will ensure liaison between Defra and HSE is undertaken at a national level.

3.15. Depending on the scale of the outbreak the DHSM will arrange for assistance from external health and safety providers.

3.16. The DHSM in liaison with the Animal Health HSM will ensure that relevant risk assessments and other documentation/arrangements necessary to comply with legislation are produced in relation to the work undertaken by Defra and Animal Health.

3.17. The DHSM and the Animal Health HSM will ensure that the safety professionals in the LDCC work in a co-ordinated manner to ensure consistency of approach.

## Role of the Safety Professional in LDCC

- To act as Health and Safety Adviser at the LDCC advising and assisting LDCC Managers to fulfil their H&S responsibilities;
- To provide a contact/liaison point for Health and Safety issues between the LDCC and NDCC;
- To liaise with the DHSM; Animal Health, HSM and other safety professionals as necessary (including the occupational health service) to ensure parity of approach for Health and Safety issues across the Department.

## Job Functions of the Safety Adviser within the LDCC

### 3.18. The safety adviser attached to each LDCC will:-

- ensure that Health and Safety office is established with all necessary facilities including telephone and PC Communications links, files, documentation and dedicated administrative support.
- establish lines of communication with NDCC via head of Department Health & Safety Unit (DHSU) (or other nominated safety professional in NDCC), with Health and Safety professionals in other LDCCs, with local Health and Safety Executive, with the occupational health service/ HPA (where relevant) and with Health and Safety persons in other organisations working with or under contract to Defra relevant to the locality of work.
- establish a Health and Safety team within the locality, based on risk (numbers will depend on size of emergency within any particular LDCC), drawn from local staff with appropriate experience or from register of available persons with H&S expertise. Any shortfall in numbers of available staff will be identified by the safety professional, who will inform DHSU.
- provide basic training to others to enable the health and safety team to function appropriately.
- undertake safety briefings for all staff from day one and ensure that these are done on a sufficiently regular basis so that all are briefed on health and safety issues, relevant to the risk, before starting work. These briefings should include the arrangements in place to ensure employee support. Records must be kept of those staff attending briefings.
- organise and deliver under national guidelines (to be agreed via DHSU) more in depth training and safety briefings for managers and specialist groups locally e.g. culling teams, cleansing and disinfection teams, sampling teams and if necessary outside bodies which may include contractors representatives and military personnel.

- ensure that basic health and safety information packs and other local documentation are kept up to date and include centrally issued information and are available/issued to all staff that need them and as far as possible records are kept of those staff issued with the documents.
- ensure that there is health and safety documentation relevant for each premises and that all safety reports, records and information are filed appropriately.
- ensure visits to premises are undertaken by the local safety team to carry out preliminary inspections.
- monitor compliance of health and safety procedures and assist and advise managers on appropriate safety requirements relevant to the risk.
- attend management meetings/briefing and debriefing sessions and ensure that Centre Managers and NDCC (via DHSU) are kept informed and advised on current and anticipated Health and Safety issues and problem areas.
- monitor and assess the requirements for additional health & safety support as situations develop/risk increases and ensure NDCC (via DHSU) are kept appraised.
- ensure that the Departmental system for reporting and recording accidents is in place and that all staff are aware of accident reporting procedures and accidents are reported appropriately.
- assist with investigation of accidents and incidents liaising with HSE and other outside bodies as necessary. Feed information back to NDCC via DHSU so that Risk Assessments and work practices can be reviewed and updated.

## Public Health

3.19. In the event of an outbreak of zoonotic disease such as Avian Influenza the Divisional Veterinary Manager of the local Animal Health Divisional Office (AHDO) will notify:

- the HPA duty officer at the HPA Centre for Emergency Response.
- the local Consultant in Communicable Disease Control (CCDC) and Director of Public Health within the Primary Care Trust.

3.20. Upon receipt of a notification of suspected or confirmed zoonotic disease, the role of the Health Protection Agency is to support Defra and Animal Health in the investigation and control of the incident in relation to the protection of human health. This support will include the surveillance of zoonotic diseases in the populations at

risk associated with the outbreak, provision of advice and guidance on public health control measures, medical interventions and health advice to the public. Specifically the HPA will:

- Notify the local Health Protection Unit (HPU) in the area within which the disease is occurring.
- Notify the Department of Health.
- Liaise with the local Director of Public Health in the area where the disease is occurring as to the steps needed for the protection of human health and communication with the public.
- Locally, through the HPU and in consultation with the local Director of Public Health and NHS colleagues and Defra's occupational health services, coordinate the investigation of human health implications of confirmed disease in animals and birds and the provision of all necessary medical interventions, such as the administration of antiviral drugs and flu vaccine to those at risk of avian influenza infection including to those at risk of infection as a result of occupational exposure.
- Locally through the Health Protection Unit and in consultation with the local Director of Public Health and DVM, ensure that a joint Incident Control Team is convened as appropriate.

#### Worker Protection for Avian Influenza

3.21. Everyone in contact with potentially diseased birds or contaminated materials must follow the precautions detailed in the relevant risk assessment. Because of the possible different strains and varying infectivity of each strain of avian influenza virus to people, a precautionary approach should be taken. Anyone with medical conditions that may increase the risk of infection with avian influenza, such as respiratory disease or a reduced immuno-competence will be advised to stay away from poultry farms, avoid all contact with infected birds and infective material and seek appropriate medical advice.

3.22. All who have had, or are likely to have contact with infected birds or contaminated materials will need to be provided with information as to how to protect themselves and their families from infection.

3.23. To protect against infection, a hierarchy of control measures are needed which include:

- safe working practice in accordance with the risk assessment
- the wearing of all appropriate personal protective equipment by poultry workers/handlers/cullers/veterinarians/disposal site operatives

- safe disposal of used personal protective clothing and equipment
- the use of the antiviral oseltamivir ('Tamiflu') or other appropriate antiviral agent for the prescribed period by all who are considered to be at risk of infection and for whom antiviral therapy is not contraindicated
- vaccination with seasonal flu vaccine of all those considered to be at risk of infection and for whom vaccine is not contraindicated
- monitoring of health status of persons exposed to infected birds
- guidance to those at risk of infection on the personal hygiene measures to be taken to protect their health and to prevent the spread of infection.

3.23 The Joint Committee on Vaccination and Immunisation has advised that in the event of an outbreak of HPAI in poultry, those exposed to infection should be offered seasonal flu vaccine as a precaution against the possibility of co-infection with human flu. Vaccine should be given as soon as possible, either before or at time of exposure, and at least within 48 hours of initial exposure. The Department of Health have now introduced a programme of immunisation for poultry workers.

3.24 Antiviral therapy should be given as soon as possible, either before or at the time of exposure, and at least within 48 hours of initial exposure.

3.25 Information and guidance for anyone working with poultry that may be affected with avian influenza, may be found at:

<http://www.defra.gov.uk/animalh/diseases/notifiable/disease/ai/keptbirds/>

3.26 Persons not employed by Defra should also seek health and safety guidance from their employer's Health and Safety adviser or medical practitioner. Advice is also available from the Health and Safety Executive on their website:

<http://www.hse.gov.uk>

### **Laboratory Capacity**

3.27 The Institute for Animal Health (IAH) Pirbright and the Veterinary Laboratories Agency (VLA) at Weybridge provide the diagnostic testing service for FMD. IAH also carries out additional tests on positive or inconclusive serology samples submitted by VLA.

3.28 IAH Pirbright offers an immediate serology capacity of up to 8,000 samples per week. Defra has an agreement with the VLA that they will provide serological

testing capacity for FMD on a contingency basis of 120,000 samples per week at three laboratories. The first laboratory would be ready to start testing within three weeks of notification with an initial capacity of 7,000 tests per week, 20,000 tests in the second week and reaching full capacity of 40,000 in the third week. The second laboratory would be operational within 6 weeks and a third laboratory within 8 weeks with the same capacity build up. Full capacity of 120,000 tests per week would be reached by the 10<sup>th</sup> week.

3.29 VLA also provides the diagnostic testing service for Avian Influenza, Rabies and Classical Swine Fever. IAH Pirbright is the National Reference Laboratory for African Swine Fever, Swine Vesicular Disease and Bluetongue. Both IAH and VLA test for equine exotic diseases.

### **Emergency Readiness Management Assurance Scheme (ERMAS)**

3.30 The aim of ERMAS is to undertake an annual assessment of the preparedness of Animal Health to respond to an outbreak of animal disease. There are two ERMAS's in operation:

- ERMAS1- measures the readiness of the AHDO to operate in response to an animal disease in an emergency, to effect the transition to the status of a functional LDCC and to sustain operations at a reinforced level thereafter.
- ERMAS2- measures the readiness of the Corporate Centre of Animal Health to support the actions of the AHDO during the initial stages of an outbreak.

Readiness is measured against an agreed disease scenario.



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## **4. Key Operations**

### **Veterinary Operations**

4.1. During an outbreak of Exotic Animal Disease the Veterinary Operations Team of the National Disease Control Centre (NDCC) coordinates and manages the veterinary aspects of the control, eradication and recovery operation in liaison with the local Divisional Veterinary Manager.

4.2. Depending on the size and scale of the outbreak additional veterinary resource may also be obtained by appointing official veterinarians, private vets and vets from other countries.

### **Culling**

4.3. Culling as a disease control measure is carried out on the affected premises under the supervision of a veterinary surgeon. The methods deployed will depend on the species and number of livestock that need to be culled and will take account of the specific site conditions and any resource constraints.

4.4. In most cases the culling will be undertaken by licensed slaughtermen who will be contracted by the department and a range of contingency contracts are in place with licensed slaughtermen and marksmen.

4.5. The following are the main culling methods for cattle, sheep and pigs.

- Lethal injection
- Electrical stun/kill
- Captive bolt followed by pithing
- Use of a free bullet

4.6. Detailed guidance to staff is available in Animal Health Operational Instructions and the department has produced an interactive training guide “Getting it right first time, every time” which is available from the Stationery Office.

4.7. For poultry the main options are:

- Maceration (limited to day old chicks)
- Lethal injection
- Neck dislocation

- Percussion killing
- Electrical stun/kill
- Exposure to anoxic gas mixtures

4.8. Under certain very limited circumstances where there is a threat to public health or where resources to combat the disease are severely stretched, the department would consider the use of ventilation shutdown where no other practical method of killing is available.

4.9. Many of the options for poultry require the birds to be caught and either placed in crates or restrained prior to killing. The department has contingency contracts with a number of specialist catchers and in the event of a major disease outbreak Defra would seek to work with the poultry industry to get additional catchers released from their existing work.

4.10. For poultry there are insufficient licensed slaughtermen and equipment available outside of slaughterhouses to provide the capacity that may be required in an outbreak of exotic disease where culling normally takes place on farm. It is therefore likely that Animal Health staff will undertake the culling.

4.11. Animal Health has 50 containerised gassing units available for immediate deployment as well as a number of poultry transport modules and stocks of specialist percussion killers. Animal Health is also working with a preferred gas supplier to enhance its capability to deliver whole house gassing. During the last 12 months Animal Health has conducted two successful whole house gassing trials in association with animal welfare scientists and have refined the procedures and protocols required to ensure an effective and humane cull.

4.12. Information on Defra's policies for culling can be found at:

<http://www.defra.gov.uk/animalh/welfare/farmed/slaughter.htm>

## **Disposal Policy**

4.13. A range of disposal options are available for the disposal of carcasses culled as part of disease control measures. Defra's preferred hierarchy of disposal options for carcasses is

- Commercial fixed plant incineration
- Rendering (Category 1 and 2 animal by-product approved)
- Permitted commercial landfill sites.

4.14. Each option is supported by a detailed protocol covering operational considerations. This hierarchy was agreed for FMD following the outbreak in 2001 and has formed the basis of disposal policy for all exotic disease outbreaks since then, its applicability to avian influenza has recently been reviewed by a cross departmental working group and found still to be appropriate for avian influenza and other diseases of poultry as well. The study is available on the Defra website at:

[www.defra.gov.uk/animalh/diseases/control/contingency/index.htm](http://www.defra.gov.uk/animalh/diseases/control/contingency/index.htm)

The study has also informed the operating protocols that Defra has put in place.

4.15. Other disposal options available, such as on-farm burial, pyre burning, air curtain burners, incineration in cement kilns and the use of hazardous or municipal incineration etc are potentially also available in certain limited circumstances and would only be considered where none of the preferred options are available.

4.16. A number of strategies, such as emergency vaccination are now available. These could help reduce the numbers of animals to be disposed of in an outbreak and this should mean that these three disposal routes would be sufficient. Although mass pyres will not be used in England in the future, the use of alternative methods of disposal routes, such as on-farm pyres and on-farm or mass burial cannot be completely ruled out if demand exceeds the capacity of the preferred options of incineration/rendering and permitted commercial landfill.

4.17. On-farm pyres and on-farm burial will normally only be considered in remote areas (e.g. The Isles of Scilly) where access to other routes of disposal is limited. Any decisions to use these disposal routes will be taken in consultation with key stakeholders and appropriate environmental and public health assessments will be undertaken at each disposal location prior to use.

4.18. Defra recognises that there are several factors that may impact on the disposal hierarchy in the future. These include the implementation of possible new environmental or waste management legislation and changes to capacity and accessibility of the disposal outlets. The hierarchy will therefore be regularly reviewed, in consultation with relevant stakeholders, to take account of these issues. New technologies and facilities will also be reviewed on a regular basis.

## **Disposal Capacity**

4.19. Disposal capacity is limited and subject to significant seasonal variation. Capacity is also poorly matched to the distribution of poultry within the UK since the main disposal facilities are Category 1 and Category 2 Animal By Product facilities which are generally located in areas of high cattle and sheep densities.

4.20. In an outbreak there will be a need to optimise disposal capacity and to work with the disposal industry to either divert existing business to other facilities or to ensure that biosecurity at a facility site is rigorous enough to permit existing waste streams to continue to be received alongside infective material. For diseases such

as foot and mouth disease, Animal Health is likely to require a dedicated disposal site. For some poultry diseases it may be preferable, for operational reasons, for a mixed poultry and mammalian waste stream to be received.

4.21. Additional capacity would be arranged as required in consultation with the association of Registered Incinerator Operators (RIO) and the United Kingdom Renderers Association (UKRA). Readily available disposal capacity in the UK varies between 2,500 and 10,000 tonnes per week depending on the time of year, although additional capacity could be brought on stream over a period of weeks. It is unlikely that more than about 16,000 tonnes per week would ever be available for carcase disposal without major diversion of existing waste streams to landfill. Local Animal Health Offices have plans in place to invoke these disposal routes as required. Operational protocols for use of rendering in an outbreak of an exotic disease have been produced and shared with the Environment Agency, RIO, UKRA and the Environmental Services Association (ESA).

### **Disposal options**

4.22. **Incineration** - Defra has obtained agreement in principle with most large animal incinerators in GB to dispose of carcasses. The contractual position varies between plants with some having contracts with the Rural Payments Agency (RPA) under the Older Cattle Disposal Scheme (OCDS), some having contracts under the Scrapie Scheme and some having framework contingency contracts which would be invoked in the event of an outbreak. Animal Health keeps this list under review and as part of its ongoing contingency and resilience planning. However, incineration capacity is limited and may only be sufficient for small outbreaks involving small premises.

4.23. Operational protocols for use of incineration in an outbreak of an exotic disease have been produced and shared with the Environment Agency and the RIO.

4.24. **Rendering** - Defra has arrangements with a number of major rendering operators to ensure a minimum lead-in time in the event of an outbreak of disease and there are a range of contracts in place through the OCDS and Scrapie Schemes. Procurement and Contracts Division are working with the UK Renderers Association (UKRA) on a framework contract, which would be used in the event of an outbreak or incident.

4.25. **Permitted commercial landfill sites** - The use of permitted landfill may need to be considered if incineration or rendering capacity has been exhausted or where the distance from the infected premises to the nearest available facility is considered to be too great or to pose a risk to animal or public health. A protocol detailing the requirements for individual sites has been produced in consultation with the Environment Agencies, the DoH, the HPA, the Environmental Services Association (ESA) and the devolved administrations.

4.26. Amendments to section 57 of the Environmental Protection Act 1990 have been introduced and have extended the Secretary of State's (SoS's) power of

direction to require sites to accept carcasses and other wastes. These powers were originally limited to sites subject to waste management licensing, however, as landfills now increasingly operate under the Pollution Prevention and Control (PPC) regime the powers were extended to PPC permits. The availability of powers of direction does not necessarily mean that the powers will need to be exercised since it may be possible to obtain voluntary agreement with site operators subject to the Environment Agency's satisfaction.

4.27. It should also be noted that the SoS powers of direction would only extend to England – Ministers in Wales and Scotland would need to take similar powers.

4.28. **On-Farm Burial** - If incineration and rendering capacity has been exhausted and licensed landfill capacity is limited, it may be necessary to consider on-farm burial. In this event Defra will consult with the EA to ensure that no burial is undertaken until an appropriate risk assessment has been completed and prior written authorisation from the EA has been obtained. All burials would be undertaken in accordance with the relevant EU and national regulations so as to minimise the risk of environmental and public health impact.

4.29. **Pyre Burning** - Pyre burning would not normally be considered in England or Wales until the use of Air Curtain Burners had also been considered, and then only in exceptional circumstances. If it is decided that pyre burning had to be utilised on a limited basis, Animal Health operational instructions will be followed. The ROD and Animal Health field operations staff will consult with local authorities, the Health Agencies and EA and ensure that any burning is undertaken in accordance with the relevant EU and national regulations so as to minimise the risk of environmental and public health impact.

4.30. Advice on air quality issues would be obtained from the local authority in the case of pyres and from the EA in the case of Air Curtain Burners. Pyre burning will not be considered for the disposal of poultry. Defra has no plans to use mass pyres.

### **Arrangements for the disposal of carcasses**

4.31. Subject to the above considerations the NDCC disposal cell will identify suitably approved ABPR (Animal By Products Regulations), Waste Incineration Directive and Waste Framework Directive facilities taking account of the proximity of the facilities to the affected premises, the tonnage of carcass material that needs to be disposed and any epidemiological data or modelling which may suggest the likely scale of the outbreak. Once a potentially suitable site is identified the EA, local authority and relevant Defra policy teams will be consulted to establish whether or not there are any known constraints (e.g. issues over permits, ongoing nuisance or litigation etc.) affecting the use of the facility by Defra.

4.32. Available capacity can however only be assessed on the day, although Animal Health regularly reviews capacity generally through stakeholder meetings and local intelligence. Accidents, breakdowns and routine maintenance can all have a

major effect on disposal capacity as can changes in plant, management and seasonal demand.

4.33. Once a site has been identified and the regulatory bodies have confirmed that there are no known issues, the contractual arrangements are finalised with the operator. The local Animal Health staff are responsible for reviewing the site biosecurity and ensuring that the plant complies with the disposal site protocols. For zoonotic diseases, HPA are also involved assessing the potential exposure of workers and will issue guidance and prophylaxis as appropriate. Once agreements and biosecurity protocols are in place, transport will be tasked to deliver the carcasses to the disposal site.

4.34. The NDCC disposal cell will use the disposal hierarchy as a guide, but for large units it is preferable to use rendering since the greater individual disposal capacities available at each rendering plant means that all carcasses from a premises can be disposed of at a single site, whereas it may require 2 or more incinerators to be used – the decision is based on a balance of distance, available capacity at each site, quantity and type of carcasses to be disposed, forecast culls and the ability of each site to comply with the strict biosecurity requirements. Where possible the closest disposal facility to the affected premises will be used.

4.35. In an outbreak disposal capacity will be optimised and it is recognised that in the event of demand exceeding supply there will be a need to give priority to rendering and incineration of infected carcasses even if this means that some lower risk wastes e.g. carcasses of welfare culls have to be transported longer distances or are diverted to landfill. The NDCC disposal manager in consultation with the EA and waste management policy officials will take an overview of the disposal of all wastes for which Defra/Animal Health is responsible for the application of agreed hierarchy and will seek to optimise the utilisation of appropriate disposal capacity.

4.36. For other waste arising, such as the disposal of disinfectant washwaters, litter/manure and slurry, where the department is not responsible for treatment, waste disposal or recovery, guidance for those responsible for disposal is being produced jointly by the EA and Defra. Individual producers will however need to consider the options for treatment/disposal of such wastes as part of their own contingency plans.

## **Transport**

4.37. Defra has in place a number of centrally negotiated call-off agreements with a range of specialist local, regional and national haulage companies. Procurement advisers will identify and procure appropriate transport for carcase disposal in consultation with the NDCC Disposal team, the local DVM and the LDCC Disposal Manager.

4.38. Defra also has an emergency call-off contract in place to supply a national transport logistics manager and supporting local transport manager(s) within 36 hours of confirmation of an outbreak. The local transport managers will take over

responsibility for all transport logistics and tasking from the local DVM. There is sufficient contracted transport capacity to transport around 50,000 tonnes of carcase material per day.

4.39. Each vehicle would be leak-tested prior to being loaded and would travel by a prescribed route to the chosen disposal facility. Each vehicle would also be escorted and the driver would carry a transport incident record card, which advises police and emergency services of any precautions that should be taken in the event of an accident or incident.

## **Valuation**

4.40. Animal Health holds and maintains a list of approved valuers, which is subject to review on an annual basis. In the event of an outbreak all valuers on the list will be contacted to ensure they are still eligible for approval and to remind them of their responsibilities.

4.41. Valuations of animals culled for control of FMD or CSF must be undertaken only by a valuer from the approved list.

4.42. In order to ensure consistency in delivery of valuation policy the Department has appointed four Monitor Valuers (these appointments are reviewed on a regular basis, at least every three years). Although initially based in London, the Monitor Valuers may visit LDCCs as necessary, depending on the extent of the outbreak and monitor the issues arising.

4.43. For most species and classes of poultry valuation rate cards will be used. These are updated regularly.

4.44. Defra is currently undertaking a review of animal disease valuation and compensation procedures with a view to rationalising and simplifying them. Part of this process will be to look at the case for compulsory standard valuations. This would remove the need for individual valuation by approved valuers in many cases and would allow culling to be undertaken quicker.

## **FMD Emergency Vaccination Operations**

4.45. Genus plc has been appointed under a contract which runs until May 2009, to implement any future vaccination programme for FMD under the direction of Animal Health.

4.46. Under the terms of the contract, Genus is required to be operationally ready to implement a programme of emergency vaccination within 5 days of an outbreak, if requested. As a first response, some 50 (3 person) teams and 60 vets have been recruited and trained. Genus have also built up a register of an extra 360 staff who are on standby to assist if an outbreak occurs. There is also provision to require



Genus to ramp up the level of response to meet any reasonable disease scenario at 4 to 5 days notice.

4.47. A detailed emergency vaccination plan for FMD can be found at **Annex A**.

### **Classical Swine Fever Vaccination**

4.48. Vaccination would not normally be considered as a control measure in the current CSF control strategy. CSF vaccination is restricted by legislation, which states that no person shall administer a CSF vaccine to any pig unless authorised to do so by the Secretary of State.

4.49. In exceptional circumstances, emergency vaccination may be considered, for example where there was a dramatic increase in the number of premises being confirmed each day or in areas of very high pig density areas during a prolonged outbreak. This would need to be approved by the SoS.

4.50. Since emergency vaccination is not likely to be used in the UK there are currently no operational arrangements in place to mount a widescale CSF emergency vaccination programme in the event of an outbreak in Great Britain.

4.51. However, in accordance with our obligations under obligations under the provisions of EU Classical Swine Fever Directive 2001/89/EC, a detailed vaccination plan for CSF can be found at **Annex B**.

### **Information Management/ Information Technology**

#### **Disease Control System (DCS)**

4.52. DCS is the key management information system to be used in the event of an outbreak. There are currently three similar DCS systems: the CSF DCS, the FMD DCS and the Diseases of Poultry (DP) DCS. The appropriate system would be used in the event of a disease emergency.

4.53. The system records all actions taken to control the disease in relation to each premises affected and provides reports on the progress of the disease and its management. DVMs will ensure that AHDO staff are familiar with the functionality of DCS, requesting additional staff training from Animal Health Learning and Development Team as appropriate.

4.54. Preventative contingency measures for system failure of all DCSs are in place at the national level. These include the use of a cluster server, which enables mirroring between two web servers and databases. This will ensure that should one fail, the second will take over. In addition, the back up routine that is in place means that the risk of data loss in cases of total failure is minimal.

## **Vetnet Tracing Verification System (VTVS)**

4.55. A system for the tracing of animals - Vetnet Tracing Verification System (VTVS), updated and enhanced during the 2001 outbreak of foot and mouth disease to take account of vehicle and personnel movements, is used for tracings on a day-to-day basis. A project to review further tracings work has been initiated, with a view to encompassing both endemic and exotic diseases. There is also now an Avian Influenza Tracing System (AITS).

## **Geographical Information System (GIS)**

4.56. GIS is a key component of the departments delivery response and trained operators are now available in all regions. Animal Health GIS Operators will liaise with the Animal Health Business Development Division (Animal Health BDD) for IT hardware/software support and configuration.

## **Firearms**

4.57. As result of a review of the use of firearms by all Animal Health Divisional Offices (AHDOs), it has been decided that all AHDOs should take the following actions:

- Dispose of all free bullet weapons within Animal Health by making arrangements with or through the Police.
- Review existing stocks of captive bolt and dart guns in order to minimise stocks to meet core requirements only.
- Review and ensure that sufficient contractual arrangements exist to fill any gaps created by the above two actions.
- Deliver a consistent standard of training in the following:
  1. the effective use and management (inc. transportation) of captive bolt and dart guns;
  2. their storage and security.
- Ensure that there is sufficient expertise within Divisions to allow Animal Health to meet supervisory obligations in managing any free bullet contractual arrangements.

4.58. A training programme is now being developed for AHDO staff by the Animal Health Contingency Planning Division (Animal Health CPD), in close liaison with the Health & Safety and Learning & Development Units, which focuses on effective contract management, health and safety issues associated with the management of

culling and slaughter contracts, and the storage, transport and use of captive bolt guns and dart guns as set out in the firearms protocol.

## **Rural Issues**

4.59. During any outbreak of animal disease Defra pays close consideration to the needs of the rural communities affected. Defra's policies to assist rural communities in such situations can be found at <http://www.defra.gov.uk/rural/stress/default.htm>

## **Biosecurity**

4.60. In order to limit the spread of disease, strict biosecurity arrangements must be enforced upon farms where disease control work is taking place. Cleansing and Disinfection is carried out on all affected premises. Defra's policies on Biosecurity can be found at

<http://www.defra.gov.uk/animalh/diseases/control/biosecurity/index.htm>

## **Animal Welfare**

4.61. Defra is committed to ensuring that the welfare of animals is considered at all times in its methods of disease control. For all involved with the keeping of livestock, there is a responsibility to anticipate problems and to take steps to mitigate the effects. Guidance will be issued by Defra to farmers in advance of, or in the early stages of, movement restrictions being put in place. If welfare problems arise, which cannot be alleviated by management or husbandry practices, animal keepers will, where possible, be given the opportunity to move their animals under licence. Such movements will include movement to slaughter for the food chain or to more suitable land or buildings. If it is more appropriate fodder may be taken to the stock and Defra will assist in facilitating access to fodder and bedding.

Information on Defra's animal welfare policies can be found at :

<http://www.defra.gov.uk/animalh/welfare/default.htm>

## **Livestock Welfare Disposal Scheme**

4.62. Keepers of livestock have a duty of care to their animals. They should anticipate problems (including those associated with disease control measures) and make appropriate plans to mitigate the effects. This should form a routine part of their business planning processes. In the normal course of business, a livestock keeper should expect to assume responsibility where it becomes necessary to cull stock for welfare reasons. The introduction of disease control measures do not alter this obligation and normal business planning should cover action necessary to protect the welfare of animals in the event of an emergency.

Defra will only consider introducing a Livestock Welfare Disposal Scheme to facilitate killing and disposal of animals as an absolute last resort when all other options have been exhausted, and only if necessary to prevent an unacceptable deterioration in welfare standards. If introduced, a disposal scheme would only apply to animals that cannot be moved under licence to a slaughterhouse, abattoir or purpose built killing plant. No payment will be made to livestock keepers for animals slaughtered/killed under such a scheme.

## 5. Major Recent Developments

### Animal Health , Defra, and its agencies, working in partnership

#### Exercises

##### National Exercises

5.1. The EU FMD Directive 9474/03 requires Member States to exercise their FMD contingency plans twice within a five-year period although there is derogation allowing one of these real-time exercises to be for another “major epidemic disease affecting terrestrial animals” (Annex XV11 par. 11.2.3).

5.2. Exercise Hawthorn, a national exercise to test the avian influenza elements of the contingency plan took place in April 2006. A report summarising the lessons learned from Exercise Hawthorn and can be viewed at:

<http://www.defra.gov.uk/animalh/diseases/control/contingency/hawthorn/hawthorn-report.pdf>

5.3. The next national scale exercise to test arrangements for responding to an outbreak of Classical Swine Fever is planned for 2008.

##### Local Exercises

5.4. Animal Health began a programme of coordinated animal disease exercises for Animal Health Divisional Offices in April 2006 in order to refine and demonstrate the Agency’s emergency preparedness to deal effectively with outbreaks of exotic animal disease. The programme of exercises has been provisionally set in advance up to 2011. The programme requires:

- Full-scale exercises that are :
  - Jointly run, i.e. 2 or more Animal Health Divisional Offices (AHDOs) participating.
  - Operational Partners and industry involved.
  - With the majority of the AHDO involved.
- Each AHDO to take part in at least one full-scale exercise a year.
- The testing of plans for the 8 diseases that are deemed to be a high priority for contingency planning.
- Animal Health Contingency Planning Division to sign-off the high-level objectives and priorities for each of the full-scale exercises through sight of each Project Initiation Document (PID).

- AHDOs to use a project management approach for each exercise.
- AHDOs to work together with operational partners in their region to plan and execute the exercises.
- AHDOs to liaise with Animal Health CPD to set lower level objectives.

5.5. Regional Contingency Planning Groups send lessons identified from exercises, in the form of an Exercise Evaluation Report to Animal Health CPD and the National Contingency Planning Group shares lessons, updates plans and sets best practice.

5.6. In 2006/ 2007 the exercises highlighted many areas that worked well, as well as issues that need to be taken forward for resolution. The exercises were required to involve operational partners and they proved most effective at this, providing excellent opportunities for engaging with operational partners and stakeholders and so developing working relationships. They were well received by all attendees. Lessons from the exercises are being taken forward and re-tested in future exercises and contribute to the continual development of contingency plans, procedures and operational instructions.

### **Responding to Outbreaks of Disease**

5.7. In 2007 Defra has successfully deployed its contingency plans and operational instructions in order to respond to an outbreak of highly pathogenic avian influenza in Holton, Suffolk and an outbreak of low pathogenic avian influenza in North Wales and cases linked to Chelford Market, Foot and Mouth disease in Surrey and Bluetongue in the south east of England. Disease control measures for both Foot and Mouth disease and Bluetongue are continuing and lessons to be learned exercises are currently underway. Current situation updates are available at:

<http://www.defra.gov.uk/animalh/diseases/notifiable/disease/ai/index.htm>

The formal “lessons to be learned report” from the Suffolk highly pathogenic avian influenza outbreak is available on the Defra public website:

<http://www.defra.gov.uk/animalh/diseases/notifiable/disease/ai/archive/holton.htm>

5.8 Lessons learned from these experiences continue to be incorporated into the continual development of contingency plans and operational instructions.

## **Annex A**

### **Foot & Mouth Disease (FMD)- Emergency Vaccination**

#### **Background**

1. In accordance with the provisions of EU Foot and Mouth Disease Directive 2003/85/EC, to move emergency vaccination from a measure of last resort more to the forefront of control strategies and thus enhance our capacity to respond to an outbreak, the following provides an overview of our operational capability to implement an emergency vaccination programme within Great Britain.
2. Genus PLC have been appointed under a contract which runs to May 2009, to implement any future vaccination programme under the direction of Animal Health. Under the terms of the contract, Genus are required to be operationally ready to implement the vaccination programme within 5 days of an outbreak. To arrive at this state of readiness, 50 teams (150 staff) of sufficient vaccinators and support staff have been trained to provide assistance at the outset. Further to this, some 60 veterinary surgeons have been recruited to check for disease prior to vaccination and to direct the work of the lay teams in the field.
3. We also have a provision to require Genus to ramp up the level of response to meet any reasonable disease scenario at 4 to 5 days' notice. This includes the recruitment of an extra 360 staff to be on standby to assist as the outbreak situation dictates.
4. As part of the management of the FMD vaccination operation, we have agreed with Genus, a set of Standard Operating Procedures (SoPs) which set out the roles and responsibilities of those involved in implementing an effective vaccination programme.
5. We have also agreed a Health and Safety Policy which incorporates the need for Genus, all employees, sub and external contractors to comply with best practice and all relevant provisions, whether statutory or otherwise, relating to health and safety at work, including Biosecurity protocols. Specific Health and Safety training continues to be provided for all staff.
6. Further to the Health and Safety policy, a team has been set up to deal specifically with Health and Safety related issues. This team will produce risk assessments for pre-vaccination visits by vets, for on-farm vaccinators and handling facilities, and maintain the necessary documentation to accompany this.

## **Delivery arrangements**

### Accommodation

7. Genus will provide 3 portable forward vaccination centres capable of being relocated to areas of the country where vaccination services are required, thus enabling a vaccination programme to commence on day 5 of an outbreak. Contingency arrangements have been put in place to use market sites to house vaccination centres.

### Equipment

8. Genus is required to supply, store, distribute and maintain the necessary equipment to support the vaccination programme. Stores Managers have been appointed to maintain these stores and contracts are in place to allow for the replenishment of stocks within 48 hours.
9. Animal Health will remain responsible for the maintenance of call-off contracts for disinfectant, ear tags and applicators, and mobile handling facilities, including vehicles to tow mobile facilities complete with disinfectant containers and power washers.

### Vaccine Supplies

10. The UK has its own stocks of 9 different strains of FMD antigen, adding up to over 20 million doses, held on its behalf by a commercial supplier. In addition, the EU Vaccine Bank holds a wide range of antigens for emergency use. All antigens are administered according to their authorised Marketing Authority and the number of doses available and strains is kept under review. We have call-off contracts in place with the supplier for the delivery of vaccine (maintaining the cold chain throughout) to the vaccination centre.

### Lay Vaccination

11. To ensure that emergency vaccination could be implemented without delay in any future outbreak, Orders have been made under the Veterinary Surgeons Act 1966 and the Medicines Act 1968 to allow non-veterinary personnel to handle and administer FMD vaccine and, in particular, will allow vaccine to be supplied and administered by lay vaccinators who meet specified eligibility criteria, thus reducing pressure on veterinary resources during an outbreak.

## **Process**

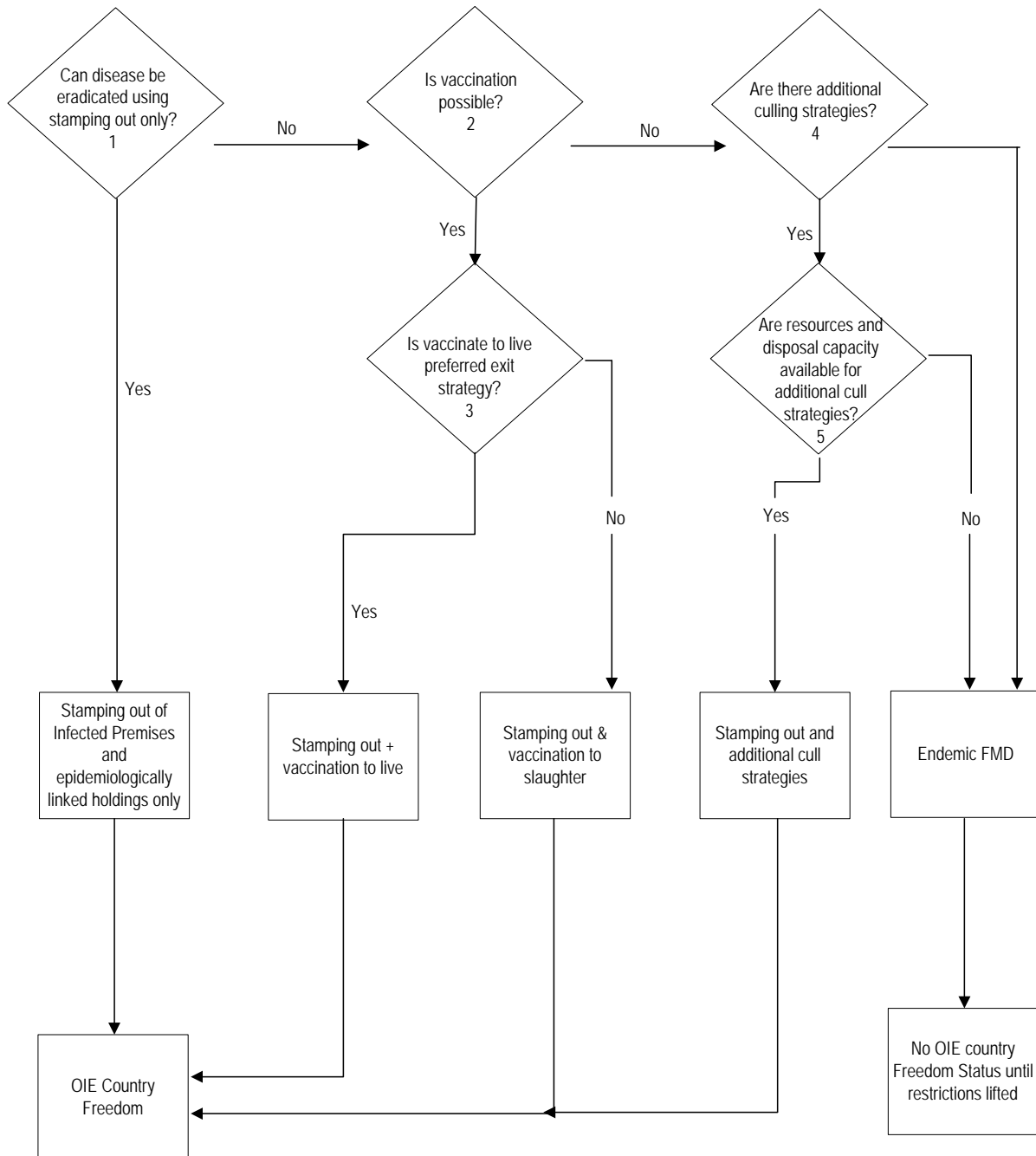
12. In the event of a confirmed outbreak of FMD, Animal Health will convey the scope and policy of the project to Genus, and confirm the approach to be taken (this will involve providing vaccine delivery arrangements). Animal Health will also keep Genus informed of all suspect and confirmed cases as they occur and inform them of any changes which may affect field operations.



13. A Vaccination Zone will be set up, and a Vaccination Surveillance Zone of at least 10 km width surrounding the Vaccination Zone will be designated. Genus will be supplied with a complete list of holdings within the Vaccination Zone and identify those with animals that require vaccination as advised by Animal Health.
14. Genus will then contact farmers to arrange visits (giving 3 days notice where possible) and check animal handling facilities. Pre-vaccination visits by veterinary surgeons appointed by Genus will be arranged to carry out inspections which will detect suspected FMD and to exclude these from the vaccination programme.
15. Where clinical signs of FMD have been discovered, teams will be withdrawn from farms and Biosecurity protocols will need to be adhered to. Vaccination teams would then be redeployed following a 72 hour break.
16. Where FMD is not found, vaccination teams will be deployed to carry out vaccination, record animal numbers, collect and return records. Vaccinated animals will be ear-tagged in a manner outlined in the FMD (Control of Vaccination) (England) Regulations 2006 and advised by Defra.
17. For identification purposes, vaccinated cattle will also have their details recorded on the cattle passport and, for all animals, on the Defra Disease Control Database (DCS).

# Decision Tree for the Use of Emergency Vaccination During an Outbreak of Foot and Mouth Disease (FMD)

Note: Start at top left decision – diamond box



## **Annex B**

### **Classical Swine Fever (CSF)- Emergency Vaccination**

1. In accordance with the provisions of EU Classical Swine Fever Directive 2001/89/EC, the following sets out arrangements for consideration of an emergency vaccination programme.
2. Both the EU Directive and our domestic legislation permits the use of vaccination as a disease control measure in certain circumstances. The primary disease control measure that would be adopted would be a policy of culling infected and dangerous contact pigs. The option to use vaccination would be considered regularly by the CSF Expert group at its meetings and would take account of Annex VI of Council Directive 2001/89/EC which lists the main criteria and risk factors to be considered for the decision to apply emergency vaccination in pig holdings.
3. A decision to use emergency vaccination would therefore be considered in any of the following circumstances:
  - a) disease had become well established in the country and there were was a dramatic increase in the number of premises being confirmed each day
  - b) disease was established in an area with a high density of pigs e.g. Humberside
  - c) the predictions from disease modelers and epidemiologists suggest that it would take more than 2 months to bring the outbreak under control.
  - d) there was a shortage of rendering or incineration capacity such that infected animals could not be processed after being culled.
4. If emergency vaccination was to be adopted the CSF expert group would consider the extent of the geographical area in which the emergency vaccination is carried out and would make recommendations to the CVO. They would also make recommendations on the categories of pigs to be vaccinated and the duration of the vaccination campaign. The latter would be affected by the number of premises to be vaccinated and the availability of vaccine.
5. In evaluating potential vaccines it is imperative that the vaccines used are effective and rapid at stimulating a good protective immunity in the vaccinated animal. It is also important that a vaccinated animal should not become infected when challenged by a field virus as such an animal may not develop clinical signs but be infectious as the field virus replicates and contaminates the

environment. It is also essential that a vaccine should prevent congenital infections via the trans-placental infection of field virus which could result in persistently infected carriers and shedders of field virus.

6. There are two types of vaccines currently available – the live attenuated and the sub-unit vaccines. Of these, the live attenuated type is better at stimulating a rapid immune response. The sub-unit vaccines induce a slow immune response and need two vaccinations to produce full protection. This effectively means that the sub-unit vaccines are not suitable for use in emergency conditions due to the slow onset of immunity and the need for two vaccinations to induce full protection. In addition, these vaccines reduce clinical signs and mortality but do not prevent infection. Vaccinated pigs are therefore still capable of shedding infection and, in the case of sows, of producing persistently infected piglets.
7. At the present time the only Classical Swine Fever vaccines which are authorised for use are two sub-unit vaccines. These vaccines were authorised by the European Medicines Agency. There are no live attenuated vaccines approved for use in the UK. In an emergency situation the CVO would therefore need to assess the risks and benefits of using the authorised vaccines for emergency use in relation to the perceived risks of using the unauthorised conventional product which has demonstrated better efficacy in terms of onset of immunity and protection. Given this, it is likely that GB would only use suppressive vaccination to control the disease. This means that vaccinated pigs would be marked and then culled. This is necessary due to the fact that vaccinated pigs are still capable of shedding infection.
8. The choice of vaccine to be used would be reviewed regularly by the CSF Expert group as they evaluate any new marker vaccines that are produced and marketed and tests which can effectively differentiate between an infected animal; a vaccinated animal; a vaccinated and infected animal and a non-infected and non-vaccinated animal. At the time of writing Commission Decision 2003/22/EC provides for the setting up of a Commission vaccine bank that should contain 1,000,000 doses of the live attenuated classical swine fever vaccine. Defra would be able to call on this vaccine bank.

### **Implementation plans for vaccination**

9. Consideration is being given to the detailed arrangements which would need to be put in place to implement an effective vaccination programme for CSF.

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## **Glossary**

<b>ABPR</b>	<b>Animal By Products Regulations</b>
<b>ADR</b>	<b>International Carriage of Dangerous Goods by Road (UN Regulation)</b>
<b>AHDO</b>	<b>Animal Health Divisional Office</b>
<b>AHO</b>	<b>Animal Health Officer</b>
<b>AI</b>	<b>Avian Influenza</b>
<b>ASF</b>	<b>African Swine Fever</b>
<b>C&amp;D</b>	<b>Cleansing and Disinfection</b>
<b>CLVI</b>	<b>Contingency Local Veterinary Inspector</b>
<b>CSF</b>	<b>Classical Swine Fever</b>
<b>DC</b>	<b>Dangerous Contact – These are animals of susceptible species which are believed to have been exposed to infection.</b>
<b>DCS</b>	<b>Disease Control System</b>
<b>Defra</b>	<b>Department for Environment Food and Rural Affairs</b>
<b>DHSM</b>	<b>Departmental Health and Safety Manager(Defra)</b>
<b>DHSU</b>	<b>Departmental Health and Safety Unit (Defra)</b>
<b>DOH</b>	<b>Department of Health</b>
<b>DOM</b>	<b>Divisional Operations Manager</b>
<b>DVM</b>	<b>Divisional Veterinary Manager</b>
<b>EA</b>	<b>Environment Agency</b>
<b>ESA</b>	<b>Environment Services Association</b>
<b>EU</b>	<b>European Union</b>
<b>FMD</b>	<b>Foot and Mouth Disease</b>
<b>FSA</b>	<b>Food Standards Agency</b>
<b>GIS</b>	<b>Geographic Information Systems</b>
<b>HASANS</b>	<b>Defra Departmental Health and Safety Notices</b>
<b>HO</b>	<b>Home Office</b>
<b>HPA</b>	<b>Health Protection Agency</b>
<b>HR</b>	<b>Human Resources</b>
<b>HSE</b>	<b>Health and Safety Executive</b>

<b>IAH</b>	<b>Institute for Animal Health</b>
<b>IP</b>	<b>Infected Premises</b>
<b>JCC</b>	<b>Joint Coordination Centre</b>
<b>LA</b>	<b>Local Authority</b>
<b>LACORS</b>	<b>Local Authorities Co-ordinators of Regulatory Services</b>
<b>LASSA</b>	<b>Licensed Animal Slaughterers and Salvage Association</b>
<b>LDCC</b>	<b>Local Disease Control Centre</b>
<b>LVI</b>	<b>Local Veterinary Inspector</b>
<b>MOD</b>	<b>Ministry of Defence</b>
<b>NCC</b>	<b>News Co-ordination Centre</b>
<b>ND</b>	<b>Newcastle Disease</b>
<b>NDCC</b>	<b>National Disease Control Centre</b>
<b>NEEG</b>	<b>National Emergencies Epidemiology Group</b>
<b>NFU</b>	<b>National Farmers Union</b>
<b>NWMT</b>	<b>National Wildlife Management Team</b>
<b>OD(W)</b>	<b>Operations Director Wales</b>
<b>OGD</b>	<b>Other Government Department</b>
<b>PCD</b>	<b>Procurements and Contracts Division (Defra)</b>
<b>PERT</b>	<b>Procurement Emergency Response Team</b>
<b>PPC</b>	<b>Pollution and Prevention Control</b>
<b>“Pre-emptive” or “preventative cull” “firebreak” cull</b>	<b>This involves the culling of animals which are not on infected premises nor are dangerous contacts or necessarily exposed to the disease, in order to prevent the wider spread of disease outwith an area. Use of this power is described by a Disease Control (Slaughter) Protocol as required by the Animal Health Act 1981, as amended.</b>
<b>Preliminary cleansing and disinfection</b>	<b>Biosecurity procedures put in place during the culling and disposal of animals and the initial treatment of contaminated areas of a premises with disinfectant.</b>
<b>PZ</b>	<b>Protection Zone</b>

<b>RCU</b>	<b>Regional Co-ordination Unit (Department of Communities and local Government)</b>
<b>RIDDOR</b>	<b>Reporting of Injuries, Diseases and Dangerous Occurrences Regulations</b>
<b>RIO</b>	<b>Registered Incinerator Operations (association of)</b>
<b>ROD</b>	<b>Regional Operations Director</b>
<b>RPA</b>	<b>Rural Payments Agency (Defra Agency)</b>
<b>RSAP WG</b>	<b>Rural Stress Action Plan Working Group</b>
<b>SAC</b>	<b>Science Advisory Council (Defra)</b>
<b>SAPER</b>	<b>Science Advisory Panel for Emergency Response</b>
<b>Secondary Cleansing &amp; Disinfection</b>	<b>After preliminary cleansing and disinfection, the cleansing (including disposal of manure, bedding etc.), degreasing, washing and disinfecting of premises to remove the infective agent, reduce the level of it, such that recrudescence will not occur on restocking.</b>
<b>SEPA</b>	<b>Scottish Environment Protection Agency</b>
<b>Sitrep</b>	<b>Situation Report</b>
<b>SCoFAH</b>	<b>Standing Committee (of the European Commission) on Food Chain and Animal Health</b>
<b>SVD</b>	<b>Swine Vesicular Disease</b>
<b>TVI</b>	<b>Temporary Veterinary Inspector</b>
<b>UKRA</b>	<b>United Kingdom Renderers Association</b>
<b>VA</b>	<b>Veterinary Adviser</b>
<b>VENDU</b>	<b>Veterinary Exotic Notifiable Diseases Unit</b>
<b>VLA</b>	<b>Veterinary Laboratory Agency, Weybridge</b>
<b>VO</b>	<b>Veterinary Officer</b>
<b>VTVS</b>	<b>Vetnet Tracing Verification System</b>
<b>WAG</b>	<b>Welsh Assembly Government</b>
<b>WAG EPC</b>	<b>Welsh Assembly Government Environment Planning and Countryside Department</b>
<b>WID</b>	<b>Waste Incineration Directive</b>