

Consultation on Defra's Contingency Plan for Exotic Diseases of Animals

Overview of Emergency Preparedness

(for Foot and Mouth Disease, Avian Influenza, Newcastle Disease and all other exotic diseases of animals)

June 2009

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Defra's Overview of Emergency Preparedness for Exotic Diseases of Animals

Supplementing Defra's Framework Response
Plan for Exotic Diseases of Animals

June 2009

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FOREWORD

To be included in final version

Chief Veterinary Officer

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1. Disease Information Summary

Background

1.1. The Animal Health Act 1981 requires that contingency plans for dealing with outbreaks of Foot and Mouth Disease, Avian Influenza and Newcastle Disease are developed, reviewed at least annually and, where appropriate, updated. This document, together with the Framework Response Plan forms Defra's generic contingency plan for responding to these diseases.

Additionally, it is the response plan which would be used for dealing with a range of other exotic diseases of animals, including new or emerging ones.

1.2. The Disease Summary Information section contains detailed information on some of the most high profile of these diseases, including Classical Swine Fever, Swine Vesicular Disease, Rabies and various equine diseases. The summaries contain a brief guide to their symptoms and clinical signs, routes for introduction, modes of transmission and current disease control policy.

Foot and Mouth Disease (FMD)

1.3. 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.

1.4. 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.

1.5. 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.

1.6. 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.

1.7. 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. This case presented as a flu-like illness with the addition of blisters not observed in influenza. The Food Standards Agency has advised that the disease has no implications for the human food chain.

1.8. 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 carcase of an infected animal and on contaminated objects or in the environment.

1.9. Good biosecurity is required to stop onward spread.

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

1.11. 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.

1.12. Current policies for the control of an outbreak of FMD and a disease profile, providing technical information on this disease, can be viewed on the Defra website (www.defra.gov.uk/footandmouth).

Avian Influenza (AI)

1.13. 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.

1.14. 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.

1.15. 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.

1.16. It is possible for some species of birds such as wildfowl to be infected with avian flu viruses and show only mild or no 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.

1.17. 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. EU legislation to control and eradicate AI applies to HPAI viruses and LPAI viruses of subtypes H5 and H7.

1.19. 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, restocking supplies of game, or for industrial use.

1.20. 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 are 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.

1.21. Current policies for the control of an outbreak of AI and a disease profile, providing technical information on this disease, can be viewed on the Defra website (www.defra.gov.uk/avianflu).

Newcastle Disease (ND)

1.22. 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 infection 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).

1.23. 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.

1.24. 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, restocking supplies of game, or for industrial use.

1.25. 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.

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

1.27. Good biosecurity reduces the risk of onward spread.

1.28. 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.

1.29. Current policies for the control of an outbreak of ND and a disease profile, providing technical information on this disease, can be viewed on the Defra website (www.defra.gov.uk/animalh/diseases/notifiable/newcastle).

Classical Swine Fever (CSF)

1.30. 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.

1.31. 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.

1.32. 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, can easily be confused with CSF and ASF.

1.33. 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.

1.34. 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.

1.35. 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.

1.36. Current policies for the control of an outbreak of CSF and a disease profile, providing technical information on this disease, can be viewed on the Defra website (www.defra.gov.uk/animalh/diseases/notifiable/csf).

African Swine Fever (ASF)

1.37. 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.

1.38. The clinical signs are indistinguishable from those seen in Classical Swine Fever and vary with virus strain.

1.39. 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. Conversely, infection of domestic pigs with virulent strains of the virus may result in very high death rates.

1.40. 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, and reluctance to move. Groups of affected pigs may huddle together and sows may abort.

1.41. 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.

1.42. 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.

1.43. 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.

1.44. 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.

1.45. 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.

1.46. A potential route for the introduction of ASF 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.

1.47. 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.

1.48. 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.

1.49. 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.

1.50. Current policies for the control of an outbreak of ASF and a disease profile, providing technical information on this disease, can be viewed on the Defra website (www.defra.gov.uk/animalh/diseases/notifiable/asf).

Swine Vesicular Disease (SVD)

1.51. 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).

1.52. 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.

1.53. The disease usually appears suddenly, but does not spread as rapidly as FMD. 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.

1.54. 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.

1.55. 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.

1.56. 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.

1.57. 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.

1.58. 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.

1.59. 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.

1.60. Current policies for the control of an outbreak of SVD can be viewed on the Defra website (www.defra.gov.uk/animalh/diseases/notifiable/svd).

Rabies

1.61. Rabies is a viral disease of the nervous system caused by a rhabdovirus which affects humans and all mammals, including cats, dogs, wildlife and farm animals. It is invariably fatal once signs of the disease have appeared.

1.62. Classical rabies was eradicated from GB in 1922 and the Pet Travel Scheme and quarantine help protect against infected animals entering the UK, but because of the existence of the disease elsewhere there is concern about rabies being reintroduced by illegally imported mammals. 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.

1.63. 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. 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. Finally they become paralysed and die, usually within days of the first signs of illness.

1.64. Some species of bats may carry certain strains of lyssaviruses without developing disease themselves immediately, but can still on very rare occasions infect other animals or humans.

1.65. The principal objective of control, should there be an outbreak of terrestrial mammal rabies in GB, will be to control and eradicate the disease in order to protect public and animal health and to re-establish national freedom from terrestrial mammal rabies according to the Animal Health Code of the OIE (World Animal Health Organisation). This will be done by:

- the identification and laboratory confirmation of cases of rabies;
- determining the genotype and epidemiological characteristics of the virus;
- tracing the origin of infection;
- identification of human beings and contact animals at risk;
- control of contact animals including the humane destruction of high risk contacts;
- limiting spread of disease by declaring infected places and infected areas, thereby controlling the movements of domestic animals and reducing the opportunity for potentially infected animals having contact with susceptible animals;

- reducing the numbers of susceptible animals in an Infected Area by the removal of strays, vaccination of domestic animals and, if required, the destruction.

1.66. Further information, together with details of the current policy on rabies and a disease profile, providing technical information on this disease can be viewed on the Defra website (www.defra.gov.uk/animalh/diseases/notifiable/rabies).

Bluetongue (BT)

- 1.67. Bluetongue (BT) is a severe and highly infectious disease of cattle, sheep and some species of deer. Most ruminants are susceptible to a variable degree. Globally it is one of the most economically important diseases affecting livestock.
- 1.68. The disease is caused by a virus which is transmitted by certain species of biting midges (adult female *Culicoides*). The disease occurs only where the adult vector midges are abundant and active.
- 1.69. 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).
- 1.70. 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.
- 1.71. The virus does not affect people.
- 1.72. Bluetongue virus serotype 8 (BTV-8) occurred in the UK for the first time in September 2007, after infected midges from Northern Europe reached East Anglia.
- 1.73. A UK BTV-8 vaccination strategy was agreed with industry stakeholders. Vaccination began in April 2008 using an inactivated Bluetongue BTV-8 vaccine.
- 1.74. Current policy on bluetongue and vaccination can be viewed on the Defra website (www.defra.gov.uk/animalh/diseases/).

Equine Infectious Anaemia (EIA)

1.75. 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.

1.76. 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.

1.77. EIA does not cause disease in humans.

1.78. 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.

1.79. Further details about the disease can be viewed on the Defra website (www.defra.gov.uk/animalh/diseases).

Equine Viral Encephalomyelitis (EVE)

1.80. 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.

1.81. 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).

1.82. 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.

1.83. 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.

1.84. 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 twitching may occur in the face and shoulder muscles. A period of severe depression follows.

1.85. Further information about these diseases can be viewed on the Defra website (www.defra.gov.uk/animalh/diseases).

West Nile Virus (WNV)

1.86. 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).

1.87. 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.

1.88. 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.

1.89. 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.

1.90. 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.

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

1.92. Current policies for the control of an outbreak of WNV and a disease profile, providing technical information on this disease, can be viewed on the Defra website (www.defra.gov.uk/animalh/diseases).

Glanders and Farcy

1.93. Glanders is a serious bacterial disease of the respiratory tract and skin, affecting mainly equids. It is also a zoonosis. The disease was eradicated from this country in 1928. It still survives in parts of Europe, Asia, Asia Minor, South America and North Africa. It remains a notifiable disease in this country.

1.94. There are two forms of the same disease caused by a bacteria, *Burkholderia mallei*. The disease is called "Glanders" when the principal lesions are seen in the nostrils, submaxillary glands and/or lungs and "Farcy" when located on the surface of limbs or body.

1.95. Horses, mules and donkeys are the species most often affected. Horses tend to be chronically affected, whereas donkeys and mules get the disease in the acute form. Recovered animals can remain sub-clinical carriers. Infection occurs by ingestion, contact with contaminated secretions or aerosol transmission. Infection leads to infection localised in the lungs, and also in the skin and the mucous membrane of the nasal passage. Dogs, cats and wild carnivora may be infected and there are reports of Glanders in goats, sheep and camels.

1.96. Humans can be infected from affected horses by inoculation through a wound or by inhalation. If untreated, the mortality rate in humans is as high as 95%. Field veterinarians and veterinary pathologists must take strict precautions to prevent human infections, via either the cutaneous or the respiratory route, during clinical or post-mortem examination of suspected cases.

1.97. Horses are usually infected by eating or contacting contaminated food/ water/ troughs/ tack. The disease is characterised by the formation of nodular lesions in the lung and other internal organs and ulcerations of the mucous membrane at the upper respiratory tract. In the acute form, nasal discharge, coughing, a high fever, and ulceration of the nasal mucous are symptoms of this disease. Death occurs from septicaemia in a few days. The discharges are infectious.

1.98. In chronic forms, nodules develop subcutaneously and ulcerate. The lymph vessels thicken and there is enlargement of the lymph nodes of the area. Nodules develop in the nose, the turbinate bones and on the nasal septum. They enlarge up to 1cm in diameter then ulcerate. The animals are sick for months and then die or remain carriers. These carrier animals may continue to spread the disease.

1.99. Horses imported to the United Kingdom from regions where there is a risk of Glanders, are routinely blood sampled during importation to the UK. The implications for both human and equine health make this a significant disease for ongoing vigilance.

1.100. Further information about the disease can be viewed on the Defra website (www.defra.gov.uk/animalh/diseases).

Dourine

1.101. Dourine is a contagious disease of horses, mules and donkeys transmitted only by coitus and characterised by inflammation of the external genital areas, skin lesions and paralysis. The causal agent is a trypanosome - *Trypanosoma equiperdum* - which is incapable of living outside the horse and dies quickly in the carcass.

1.102. Dourine is endemic in Africa, Asia, South eastern Europe and South America. The disease has never occurred in this country.

1.103. Mortality rates in Europe this may be as high as 50 to 75% but in the areas where the disease is endemic, a milder form of the disease exists with much lower mortality figures. Many chronically affected animals may have to be destroyed.

1.104. The incubation period varies from between one to four weeks and may be transmitted from stallion to mare or vice versa.

1.105. Clinical symptoms vary in severity depending on the strain of trypanosome and the general health of the horse. Malnutrition and intercurrent disease conditions may exacerbate the symptoms.

1.106. In stallions the initial signs are swelling and oedema of the penis, scrotum and prepuce and surrounding skin which may extend as far forward as the chest. There is a mucourulent urethral discharge. In mares there is oedema of the vulva with a profuse fluid discharge and sometimes ulceration of the vagina. The oedema extends to the perineum, udder and along the abdominal floor.

1.107. Nervous signs appear at a variable time following the genital involvement. These nervous signs are stiffness and weakness of the limbs with inco-ordination and general loss of condition. Atrophy of the hindquarters with extreme emaciation may necessitate destruction of the animal.

1.108. Symptoms may also be associated with the appearance of urticaria-like plaques 2 to 5 centimetres in diameter along the body and neck. These persist from a few hours up to a few days and succeeding crops of plaques may occur for several weeks.

1.109. Further information about the disease can be viewed on the Defra website (www.defra.gov.uk/animalh/diseases).

African Horse Sickness

1.110. African horse sickness is a severe and highly infectious disease affecting horses, mules and donkeys. Other susceptible animals include zebras and elephants which may be infected without showing signs of disease.

1.111. The disease is caused by a virus which is transmitted by certain species of biting midges, most commonly *Culicoides* spp. The severity of the disease depends upon the virus strain as well as the species and breed of infected host.

1.112. The disease is not directly contagious between susceptible animals and does not affect people.

1.113. The spread of disease is influenced by climatic conditions which favour the spread of vectors, including warm, moist weather and high rainfall, as well as spread by wind dispersal.

1.114. Disease in horses and ponies is most severe, with clinical signs including fever, respiratory distress, coughing, copious nasal discharge, swelling of the head (particularly above the eyes), colic and sudden death.

1.115. Further information about the disease can be viewed on the Defra website (www.defra.gov.uk/animalh/diseases).

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2. Preparedness

Animal Health Emergency Planning and Emergency Response to Exotic Diseases of Animals

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

2.2. Disease control operations are centrally coordinated by Defra's National Disease Control Centre (NDCC) in London. The local response is managed by one or more Local Disease Control Centres (LDCCs) which would usually be based at the appropriate Animal Health office. Depending on the location of the outbreak or incident, a Forward Operations Base (FOB) may also be established.

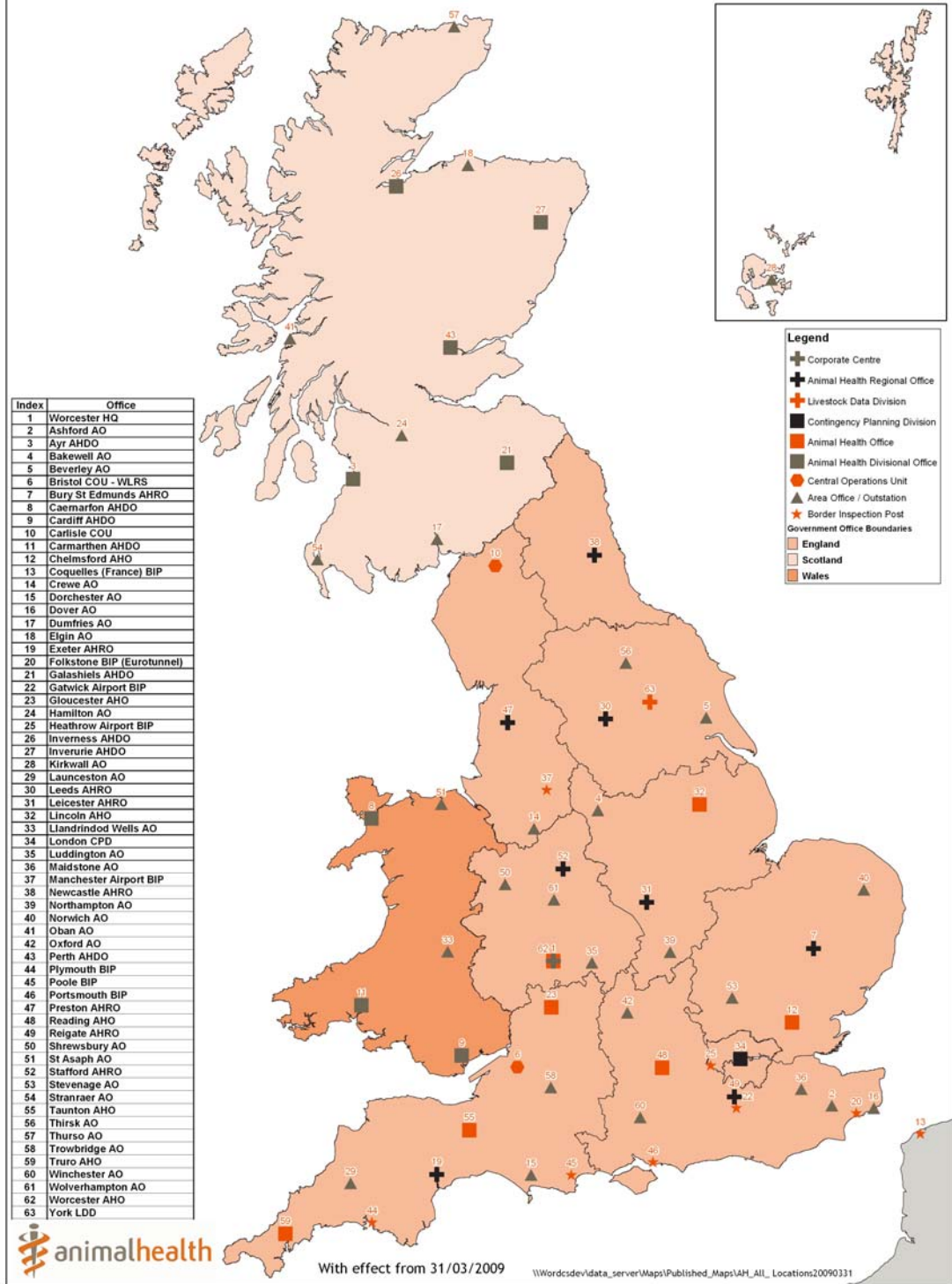
2.3. Defra's Framework Response Plan for Exotic Diseases of Animals (which accompanies this document) sets out the structures and systems which have been put in place to coordinate the disease control operation, together with the roles and responsibilities of the individuals involved.

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

2.5. Defra and Animal Health work closely with a variety of other agencies, organisations and operational partners such as Local Authorities, Government Offices (GOs), Local Resilience Forums (LRFs), Regional Resilience Forums (RRFs), Regional Resilience Teams (RRTs), the Health Protection Agency (HPA), the Police, the Environment Agency (EA), and the two main reference laboratories the Veterinary Laboratories Agency (VLA) and the Institute of Animal Health (IAH) to ensure that any response is well planned, integrated and coordinated, and involves the appropriate specialists.

2.6. The Science Advisory Council play a very important role in scrutinising Defra contingency plans in advance of any emergency, and reviewing how an emergency was managed in a lessons learned context.

ANIMAL HEALTH LOCATIONS



This map shows the location of each of Animal Health's offices which may be used as Local Disease Control Centres or Forward Operations Bases, depending on the type of disease and scale of the outbreak

Human Resources: Key Roles

2.7. There are many individual roles which contribute to Defra/ Animal Health's preparedness to respond to an outbreak of exotic diseases of animals. The following describes many of these functions and the training that is provided to ensure that each individual concerned is able to carry out their duties effectively.

Regional Operations Directors

2.8. Each of Animal Health's offices is responsible for ensuring that Animal Health is prepared to respond to an outbreak or incident of exotic diseases of animals. The Regional Operations Director (ROD) in England, (known as Divisional Veterinary Manager (DVM) in Scotland & Wales), is the individual responsible for ensuring that plans are in place and that staff are suitably trained.

2.9. The ROD has responsibility for local preparedness to deal with disease outbreaks which might be small and localised or part of a much larger national (or international) disease emergency. They also understand the national context in which disease response needs to be set (for example international trade might not be a local issue but what is done locally will have an impact at the national level).

2.10. RODs are responsible for building and maintaining effective local relationships with the local livestock/food chain sector as well as other parts of the public sector delivery chain (e.g. GOs, LRFs, Police, LAs, the HPA, English Nature and EA). They also have an important role between outbreaks informing policy development – through feeding back into the centre, intelligence on local issues/practices which could impact on disease preparedness, risks and handling.

2.11. In an outbreak, the Regional Field Manager (in England) or DVM (in Scotland & Wales) takes responsibility for the local veterinary and technical aspects of the disease control response.

Regional Resilience Managers (RRMs)

2.12. Each region in England has appointed a Regional Resilience Manager (RRM) In Scotland and Wales, these are appointed on a divisional basis and known as Readiness and Resilience Managers. The RRM is responsible for supporting the preparation of local contingency and emergency plans, so that Animal Health maintains a continuous state of emergency readiness and resilience. The response plans are closely aligned with the well established civil emergency response structures and Animal Health works closely with Local Resilience Forums (LRFs) and Government Office Regional Resilience Teams (RRTs) to ensure that Defra's policies and disease control strategies are fully understood and that the necessary multi-agency plans are in place.

2.13. The primary role of the RRM is to support the ROD in ensuring that their region 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 may be compromised as a consequence of other types of emergencies. However, the scope of the work undertaken by each region 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 from office to office. Their primary responsibilities are as follows:

- To ensure that the region has in place a contingency plan that complements the Defra Contingency Plan and Animal Health instructions and arrangements to ensure readiness. This state of readiness is regularly assessed using the Emergency Readiness Management Assurance Scheme (ERMAS) tool;
- To ensure that the region has in place business continuity plans to deal with incidents that may interrupt the delivery of services;
- To build effective networks with neighbouring regions and with Animal Health Contingency Planning Division (CPD) and with other RRM to share best practice and to ensure that the region's contingency plans and processes are consistent with national policies and procedures;
- In liaison with Animal Health 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 ROD and other staff in the region to plan, organise and deliver local exercises as set out in the Animal Health Programme of local exercises;
- To support the ROD planning, establishing and managing the LDCC.

Regional Policy Advisers (RPAs)

2.14. RPAs improve the two-way communication between policy officials in the NDCC and with the front line delivery teams. The RPA will be a Defra policy official identified between outbreaks and will receive briefing and training to develop effective links with local offices, operational partners and local stakeholders. They will be expected to take up their roles within a few days of an outbreak being confirmed. For smaller outbreaks and incidents the Chief Veterinary Officer (CVO) may decide that an RPA is not required.

2.15. They will contribute to strategic leadership and direction within the Local Disease Control Centre(s) (LDCC(s)) via participation and membership

of the Management Control Team. They will also ensure that Animal Health and other delivery partners understand and advocate the policy objectives and help collect intelligence on whether the policy objectives are being delivered and if not offer opinions on why and what needs to change to ensure they can be in future.

2.16. The RPAAd will represent Defra in dealings with local operational partners, stakeholders and media.

Veterinary Resources

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

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

2.18. CLVIs have an important role between outbreaks as well as during an actual incident or outbreak.

2.19. In the event of an outbreak of exotic diseases of animals 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 between outbreaks:

2.20. 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 local office/LDCC, through financial procedures in Defra and Animal Health to HR policies etc);
- Awareness and use of the Animal Health Operations Manual;
- Establishment of LDCC/FOB and roles the CLVI would fill;
- Up to four CLVIs have been appointed to each office.

2.21. Local Exercises – a component of training is the involvement of the CLVIs in the managed programme of local exercises.

2.22. 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 CLVIs are available for other activities (assuming a commitment of 3 days per year).

2.23. 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.

2.24. 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 ROD and explaining the Department’s policies and views.

Non-Government Veterinary Personnel - Temporary Staff

2.25. Non-Government veterinarians may be engaged on temporary contracts.

Non-Government Veterinary Personnel - Overseas Government Veterinary and Technical Personnel

2.26. 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).

General Field, Technical and Administrative Staff

2.27. If necessary, at the start of and during an outbreak of exotic diseases of animals, 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. Those who have left the Department but have said they would wish to assist in the event of an emergency may also be contacted.

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

2.29. 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.

Training

Animal Health Staff (Veterinary, Technical and Administrative staff)

Veterinary staff

2.30. All new veterinary entrants attend a 4-day course on notifiable diseases, which includes exotic viral diseases, at the Institute for Animal Health, Pirbright and Veterinary Laboratories Agency. This is in addition to the 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

2.31. A number of 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 in animal disease awareness; which covers the specific roles in a disease outbreak. There has been a major programme of practical and classroom based training for technical staff identified to take on the role of Case Officer. This programme was designed to address issues identified following previous outbreaks.

Staff involved in finance or procurement

2.32. 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.

2.33. 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

2.34. Staff are involved in a local 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.

Key Administrative, Field & Technical Staff

2.35. 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 responsibilities and working instructions.

2.36. Staff in an office in which an LDCC is being established, 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.

3. Arrangements for Emergency Response

Operational Instructions

3.1. 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 diseases of animals. These are set out the Animal Health Operations Manual.

Contingency Contracts

3.2. Defra Procurement and Contracts Division (PCD) and Animal Health have arranged national and local contingency agreements and supply contingency arrangements to meet anticipated needs in an exotic diseases of animals outbreak. The suppliers are vetted and subjected to regular review by Defra PCD and Animal Health to ensure their ongoing suitability for use in an outbreak.

3.3. These agreements and arrangements cover all the relevant supply chains and include on-farm culling (including catchers and licensed slaughtermen); carcass transportation; carcass disposal (rendering and incineration); and the provision of specialist services and equipment for undertaking cleansing and disinfection. A register 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.

3.4. Supplementary lists of preferred 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.

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

3.6. Details of agreements made and preferred suppliers available to Animal Health are on the PCD webpage for internal use. RODs and RRM's 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

3.7. 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.

3.8. Local minimum stocking levels: Each office 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 stock control system is being developed to provide visibility of stock held by Animal Health allowing for mutual support across offices.

Health and Safety

3.9. On confirmation of an outbreak of exotic diseases of animals the Departmental Health and Safety Manager (DHSM), in consultation with the Animal Health Head of Health and Safety (AHHHS), assess the requirements for a safety professional to be attached to each LDCC. The arrangements will be communicated to the relevant ROD, as will details of arrangements for local welfare provision.

3.10. The DHSM and AHHHS will ensure that there is sufficient health and safety professional resource to support the required working pattern in the LDCC(s) and that appropriate advice is available to the NDCC.

3.11. Where the disease is zoonotic, the DHSM will ensure that Defra's occupational health provider is notified and are represented at each LDCC if the occupational health risks of the outbreak are considered significant. The AHHHS will make arrangements to ensure that the occupational health provider liaise with the Health Protection Agency (HPA) (if involved) appropriately at the LDCC.

3.12. The DHSM will provide strategic safety advice and guidance to the NDCC. The AHHHS, will maintain an oversight of the safety implications of the operational aspects of the disease control work. The DHSM and the AHHHS will work closely together to ensure that all risks are identified and appropriately mitigated.

3.13. 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.

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

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

3.16. The DHSM and the AHHHS will ensure that the safety professionals in the LDCC work in a co-ordinated manner to ensure consistency of approach. This will include the production of health and safety factsheets, distilling the control measures from appropriate risk assessments and the maintenance of the outbreak/disease specific guidance pages on the Defra intranet.

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, AHHHS 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 Health and Safety Professional within the LDCC

3.17. The safety professional attached to the 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 the DHSM and the AHHHS, and with Health and Safety professionals in other LDCCs, local Health and Safety Executive, 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 and seconded staff with appropriate experience. Any shortfall in numbers of available staff will be identified by the safety professional, who will inform the AHHHS;

- 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 with the DHSM and AHHHS) 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. To do this the LDCC safety professional must ensure close working relationships with the appropriate teams within the LDCC, significantly Field Operations and Allocations;
- 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;
- liaise closely with the Field Operations Team to ensure that preliminary inspections of affected premises are conducted and that the appropriate safety sections of the Field Operations Log are completed satisfactorily for each location prior to work on the site. Where the on-site assessor requires specialist support, arrange for a suitably qualified or experienced person to assist with the on-site assessment;
- 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 LDCC Managers and NDCC (via DHSM/AHHHS) 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 DHSM/AHHHS) are kept appraised;
- ensure that the Animal Health agency 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;
- Liaise closely with the LDCC stores team to ensure that safety critical equipment, such as Personal and Respiratory Protective Equipment (P/RPE) is available;
- Liaise with appropriate managers of non LDCC sites (for example any office that is responsible for monitoring disposal sites) to ensure appropriate risk mitigation controls are instigated;
- Arrange for safety audit of at least 5% of field activities.

Public Health

3.18. In the event of an outbreak of zoonotic disease such as Avian Influenza, the Emergency Response duty officer at the HPA Centre for Emergency Preparedness and Response (CEPR) will be notified by Animal Health's Contingency Planning Division.

3.19. The local ROD will notify the local Consultant in Communicable Disease Control (CCDC) and Director of Public Health within the Primary Care Trust at suspicion and again once disease has been confirmed.

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 ROD, ensure that a joint Incident Management 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, 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.

Information and guidance for anyone working with poultry that may be affected with avian influenza is on the Defra website (www.defra.gov.uk/animalh)

3.25 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: www.hse.gov.uk/

Laboratory Capacity

3.26 The Disease Emergency Response Committee (DERC) has a specific remit to ensure that sufficient laboratory facilities for the diagnosis and surveillance for exotic notifiable animal diseases are available during outbreaks and other surges in demand. The committee is constituted from representatives from VLA, IAH, Animal Health and Defra's Food and Farming Group.

3.27 VLA is the national reference centre and provides the diagnostic and surveillance testing service for a number of notifiable diseases including Newcastle disease, Avian Influenza, Rabies and Classical Swine Fever, Equine Infectious Anaemia, Equine Encephalomyelitis, West Nile Virus, Dourine and Glanders. IAH Pirbright is the National Reference Laboratory and provides the same services for diseases including FMD, African Swine Fever, Swine Vesicular Disease, Bluetongue, Peste des petits ruminants, Rinderpest, several ruminant poxviruses and African Horse Sickness.

3.28 Test surge capacity, in the event of a disease outbreak, is provided by the VLA. Serological testing capacity is provided on a contingency basis of up to 120,000 samples per week. The 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, 40,000 in the third week and building to full capacity of 120,000 tests per week at week 10.

Emergency Readiness Management Assurance Scheme (ERMAS)

3.29 ERMAS is a tool used to enable Animal Health to establish the extent of the Agency's capability to respond effectively to disease outbreaks. There are two components:

- ERMAS1 - measures the readiness of Animal Health's local offices to operate in response to an animal disease 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 Animal Health's Corporate Centre to support the actions of the local offices during the initial stages of an outbreak.

Readiness is measured against agreed disease scenarios.

Local Emergency Planning, Exercises and Incident Response Plans

3.30 The Local Resilience Forum (LRF) is a statutory process for bringing together all the Category 1 and 2 responders within a local police area for the purpose of facilitating co-operation in fulfilment of their duties under the Civil Contingencies Act. They do not have a separate legal personality, powers to direct their members, or an incident management role, although the LRF chair often becomes the chair of the Strategic Co-ordinating Group (SCG) if one is formed. The Defra Framework Plan recognises the important role that LRFs and SCGs perform in managing the wider consequences of animal diseases.

3.31 The purpose of the LRF is to ensure effective delivery of those duties under the Act that need to be developed in a multi-agency environment. In particular, the LRF process should deliver:

- the compilation of agreed risk profiles for the area, through a Community Risk Register;
- a systematic, planned and co-ordinated approach to encourage Category 1 responders, according to their functions, to address all aspects of policy in relation to:
 - risk;
 - planning for emergencies;
 - planning for business continuity management;
 - publishing information about risk assessments and plans;
 - arrangements to warn and inform the public; and

- other aspects of the civil protection duty, (including the promotion of business continuity management by local authorities; and
- support for the preparation, by some or all, of its members of multi-agency plans and other documents, including protocols and agreements and the co-ordination of multi-agency exercises and other training events.

3.32 The recently published National Risk Register, which is available online at (www.cabinetoffice.gov.uk/reports/national_risk_register.aspx), provides further details of the zoonotic (animal diseases which can be passed on to humans, such as Avian Influenza) and non-zoonotic (animal diseases which cannot be passed on to humans, such as African Horse Sickness) animal disease outbreak risks for which LRFs need to review and assess the local impacts. The risks assessed as being significant will need to be included within the local community risk registers. In many areas, Animal Health is fully engaged in this process and can help with information on the density of livestock and with assessing the impacts on local communities.

3.33 Animal Health recognises that the principal mechanism for multi-agency co-operation under the Act is through LRFs. Although Animal Health is not a category 1 or 2 responder under the provisions of the Civil Contingencies Act, in practice LRF membership often expands to include relevant responders, and Animal Health is keen to further improve the strong links that it has developed.

3.34 Animal Health, through its RRM, is also involved in the production and maintenance of generic and bespoke animal disease multi-agency response plans. The approach across England is varied; many areas have regional plans and others local plans, often based on the LACoRS contingency plan templates. Engagement of local responders in the Animal Health programme in local exercises will help test the Defra and multi-agency response plans.

3.35 Animal Health should be fully engaged in all aspects of emergency planning and incident response related to outbreaks of exotic diseases of animals. Animal Health plans to work more closely with the local and regional tiers over the next twelve months. The key objectives are to ensure that there is a complete understanding of roles and responsibilities, and that the disease control structures and processes are aligned with the well-established emergency response structures that may be required to manage the wider consequences of an animal disease outbreak.

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4. Key Operations

Veterinary Operations

4.1. During an outbreak of Exotic diseases of animals the Veterinary Operations Team within the National Disease Control Centre (NDCC) coordinates and manages the veterinary aspects of the control, eradication and recovery operation in liaison with the local ROD, Regional Veterinary Lead (RVL) and Regional Field Manager (RFM).

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 the Animal Health Operations Manual and Defra has produced an interactive training guide "Getting it right first time, every time" which is available from Animal Health Contingency Planning Division.

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 lethal gas mixtures.

4.8. Under certain very limited circumstances where highly pathogenic influenza has been confirmed and 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 and Animal Health 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 or trained contractors 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. Following a number of successful trials, Animal Health negotiated a contract with a major bulk gas supplier to deliver a whole house gassing service using carbon dioxide. The use of gas-filled foam is also being investigated.

4.12. Information on Defra's policies for culling can be viewed on the Defra website (www.defra.gov.uk/animalh/welfare/).

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

4.15. Other disposal options, 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 for FMD 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 incineration, rendering and permitted landfill 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 contracts and agreements in principle with most large animal incinerators in GB to dispose of carcasses. The contractual position varies between plants. Animal Health keeps this list under review and as part of its ongoing contingency and resilience planning. However, incineration capacity is very 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 contracts and agreements with a number of major rendering operators to ensure a minimum lead-in time in the event of an outbreak of disease. Operational protocols for use of rendering in an outbreak of an exotic disease have been produced and shared with the Environment Agency and UKRA.

4.25. **Permitted commercial landfill sites** - The use of permitted landfill may need to be considered if incineration and 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 give the Secretary of State (SoS) power of direction to require sites to accept carcasses and other wastes. 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 or mobile incinerators 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 Field Operations team will identify suitably approved ABPR (Animal By Products Regulations), Waste Incineration Directive (WID) and Waste Framework Directive facilities taking account of the proximity of the facilities to the affected premises, the tonnage of carcase 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 Field Operations team will use the disposal hierarchy as a guide, but for large units it may be preferable to use rendering rather than incineration, 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. The closest suitable disposal facility with sufficient capacity to the affected premises will normally 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 have to be transported longer distances or are diverted to landfill. The NDCC JCC Field Operations 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 and will promote the application of agreed hierarchy for wastes where disposal is the responsibility of others e.g. disposal of fallen stock or welfare culls.

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. The local field operations manager will identify and procure appropriate transport for carcass disposal in consultation with the NDCC Field Operations team, the local ROD 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 on responsibility for all transport logistics once appointed. There is sufficient contracted transport capacity to transport around 50,000 tonnes of carcass material per day.

4.39. Each vehicle will be leak-tested prior to being loaded, ADR placarded 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. For animals culled for disease control purposes the transport of carcasses is undertaken by and under the control of Defra.

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 disease control purposes must be undertaken only by a valuer from the approved list or appointed by Defra.

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 quarterly.

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 more quickly.

Exotic Disease Emergency Vaccination Operations

4.45. Genus plc. has been appointed under a contract, which runs until May 2012, to implement any future vaccination programme for FMD. The contract also includes the potential for them to undertake the vaccination of FMD susceptible species against other exotic diseases for which vaccination is required - 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 FMD vaccination by day 5 of an outbreak. It is recognised there would be a delay in the lead time for other diseases whilst approved vaccines and other consumables were sourced. As a first response, Genus would provide one tier of staff to perform this requirement. This team consists of 1 x Vaccination Manager, 10 x call centre staff/schedulers, 17 x vets and 50 x 3 person vaccination teams. Genus have the ability to deploy up to another two tiers if the vaccination program required ramping up. For contingency purposes, Genus also maintain a

register of trained people (vets, technicians, general labour etc) who are willing to be called upon to assist in vaccination operations if their dedicated team members were unavailable to attend.

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 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. RODs will ensure that 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 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 Defra's 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 Defra review of the use of firearms, a decision was taken to:

- Dispose of all free bullet weapons within Animal Health;
- 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 standardised training in the following:
 - the effective use and management (inc. transportation) of captive bolt and dart guns;
 - the safe storage and security of firearms.
- Ensure that there is sufficient expertise within Animal Health to meet supervisory obligations in managing any free bullet contractual arrangements.

4.58. A training programme is now being rolled out for staff in close liaison with the Health & Safety and Learning & Development Units. The training 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 viewed on the Defra website (www.defra.gov.uk/rural).

Biosecurity

4.60. In order to limit the spread of disease, strict biosecurity arrangements must be enforced upon premises where disease control work is taking place. Cleansing and Disinfection is carried out on all affected premises. Defra's policies on Biosecurity can be viewed on the Defra website (www.defra.gov.uk/animalh).

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. All people involved with the keeping of livestock, have a responsibility to anticipate problems and take steps to mitigate the effects of a disease outbreak or other emergency. Defra will issue guidance on welfare issues 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 help facilitate access to fodder and bedding.

4.62. Local authorities enforce welfare legislation.

Information on Defra's animal welfare policies can be viewed on the Defra website (www.defra.gov.uk/animalh/welfare).

Welfare Disposal

4.63. 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.

4.64. During a disease outbreak Defra action to alleviate welfare problems requiring on farm disposal of livestock will be limited to advice on how to access killing and disposal services. The industry will be expected to meet the cost of killing and disposal. If all other options have been exhausted to prevent an unacceptable deterioration in welfare standards, Defra will consider the need for a Welfare Disposal Scheme on a case by case basis during a disease outbreak. 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 would 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 on the Defra website

www.defra.gov.uk/animalh/diseases/control/contingency).

5.3. The next national scale exercise to test arrangements for responding to an outbreak of Classical Swine Fever was planned for 2008. Due to the Foot and Mouth Disease outbreak which began in August 2007 which tested contingency arrangements for exotic diseases of animals, it was decided to postpone the next national exotic diseases of animals exercise, ‘Exercise Cedar’. A policy related classical swine fever tabletop exercise was held on 2 June 2008 and a report can be viewed on the Defra website

www.defra.gov.uk/animalh/diseases/control/contingency).

Local Exercises

5.4. Animal Health began a programme of coordinated animal disease exercises for local offices in April 2006 in order to refine and demonstrate the Agency’s emergency preparedness to deal effectively with outbreaks of exotic diseases of animals. 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 offices participating;
 - Involve Operational Partners and industry;
 - With the majority of the office involved.
- Each office to take part in at least one full-scale exercise a year;

- The testing of plans for the 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);
- Use of a project management approach for each exercise;
- Offices to work together with operational partners in their region to plan and execute the exercises;
- Offices to liaise with Animal Health CPD to set any additional objectives.

5.5. Exercise Evaluation Reports, detailing lessons learned from the exercise, are sent to Animal Health CPD, who have responsibility for sharing lessons, updating plans and promoting best practice.

5.6. In 2008/ 2009 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. Exercises are undertaken to test the full response chain, including key contractors.

Responding to Outbreaks of Disease

5.7. In 2009 Defra has successfully deployed its contingency plans and operational instructions in order to respond to an outbreak of low pathogenic avian influenza in East Anglia .

5.8. Lessons learned from outbreaks/ incidents continue to be incorporated into the continual development of contingency plans and operational instructions.

Anderson Review

5.9. Sir Iain Anderson conducted an independent review into the lessons learned from the response to the 2007 outbreak of foot and mouth disease.

5.10. The final report was published on 11 March 2008 and can be viewed on the Cabinet Office website at:

<http://archive.cabinetoffice.gov.uk/fmdreview/>

5.11. All 26 of the main recommendations made by Sir Iain Anderson, were accepted by Defra in their response to his review. The response can be viewed on the Defra website (www.defra.gov.uk/footandmouth).

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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 2012, 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, Genus have 150 teams of trained lay vaccinators (450 staff) (or three tiers – one tier is made up of 50 x 3 person teams, plus relevant support staff)] ready to provide assistance from the outset. Further to this, some 75 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. Genus may be required to ramp up the level of response, utilising the second and third tiers.
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 markets, local airports and MOD 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 ear tags, applicators and mobile handling facilities.

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.

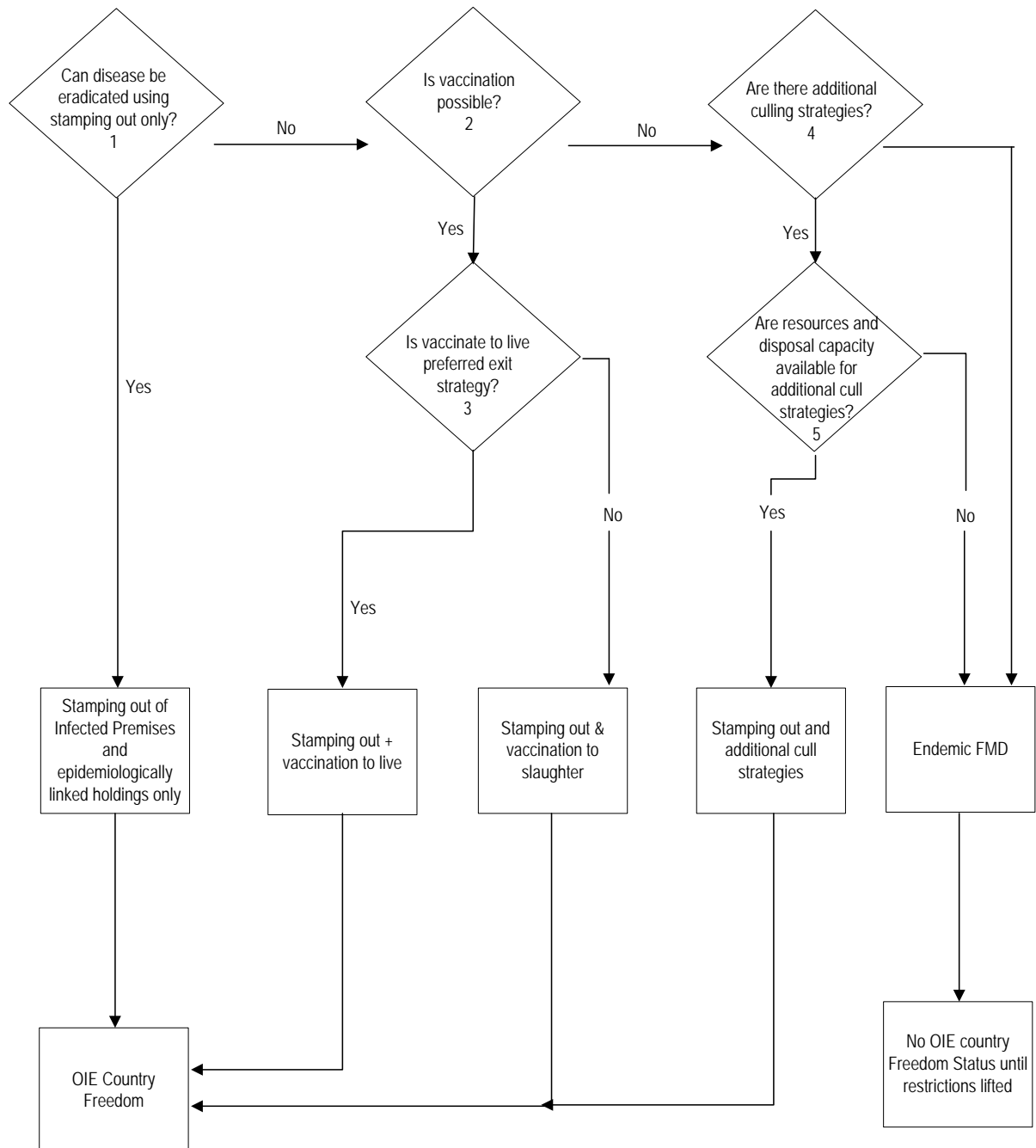
Process

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 in 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 pre-vaccination visits by veterinary surgeons appointed by them. The visits will check animal handling facilities and will also inspect for suspected FMD.
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 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.

Glossary

ABPR	Animal By Products Regulations
ACPO	Association of Chief Police Officers
ACRE	Action with Communities in Rural England
ADPG	Animal Disease Policy Group
ADR	International Carriage of Dangerous Goods by Road (UN Regulation)
AHDO	Animal Health Divisional Office
AHHHS	Animal Health Head of Health and Safety
AHO	Animal Health Officer
AHRO	Animal Health Regional Office
AHS	African Horse Sickness
AHW	Animal Health and Welfare
AHWDG	Animal Health and Welfare Directorate General
AI	Avian Influenza
ASF	African Swine Fever
BDD	Business Development Division (Animal Health)
BVA	British Veterinary Association
C&D	Cleansing and Disinfection
CCC	Civil Contingencies Committee
CCC(M)	Civil Contingencies Committee (Ministers)
CCC(O)	Civil Contingencies Committee (Officials)
CCDC	Consultant in Communicable Disease Control
CCS	Civil Contingencies Secretariat (Cabinet Office)
CCU	Customer Contact Unit (of Defra)
CD	Defra Communications Directorate
CE	Chief Executive
CEPR	See HPA CEPR
CIOD	Chief Information Officers Directorate
CLA	Country Land & Business Association
CLG	Communities & Local Government
cLVI	Contingency Local Veterinary Inspector
CMO	Chief Medical Officer
COBR	Cabinet Office Briefing Room
COI	Central Office of Information
Comms	Communications
CONOPS	Concept of Operations (Cabinet Office)
COO	Chief Operating Officer (Animal Health)
CPSD	Contingency Planning & Securities Division
CRIP	Commonly Recognised Information Picture (CCS)
CRPE	Campaign to Protect Rural England
CSA	Chief Scientific Adviser (Defra)
CSF	Classical Swine Fever
CVO	Chief Veterinary Officer
DA	Devolved Administration
DARDNI	Department of Agriculture and Rural Development Northern Ireland
DC	Dangerous Contact – These are animals of susceptible

	species which are believed to have been exposed to infection.
DCLG	Department of Communities and Local Government
DCMS	Department for Culture, Media & Sport
DCS	Disease Control System
DCSA	Deputy Chief Scientific Adviser (Defra)
DCVO	Deputy Chief Veterinary Officer, Director Vet Policy
Defra	Department for Environment, Food and Rural Affairs
DERC	Departmental (or Disease) Emergency Response Committee
DfT	Department for Transport
DG	Director General
DHSM	Departmental Health and Safety Manager (Defra)
DoH	Department of Health
DHSU	Departmental Health and Safety Unit (Defra)
DRT	Disease Reporting Team
DVM	Divisional Veterinary Manager (Scotland & Wales only)
DWP	Department for Work & Pensions
EA	Environment Agency
EAs	Emergency Actions (Animal Health instruction)
EC	European Commission
ECCW	Emergency Co-ordination Centre Wales
EDARP	Exotic Disease and Relationship Portfolio
EDPP	Exotic Diseases Policy Programme
EDPRT	Exotic Disease Policy Response Team
EFRA	Environment, Food and Rural Affairs (Select Committee)
EI	Emergency Instruction (Animal Health)
EMB	Emergency Management Board (Defra)
ENPAA	English National Parks Authority Association
EPO	Emergency Planning Officer (Local Authority)
ESA	Environment Services Association
EU	European Union
FCO	Foreign and Commonwealth Office
FFG	Food and Farming Group (Defra)
FMD	Foot and Mouth Disease
FOB	Forward Operations Base
FSA	Food Standards Agency
GAH	Global Animal Health (formerly International Animal Health) Core Function (Defra)
GB	Great Britain
GCN	Government Communications Network
GIS	Geographic Information Systems
GOs	Government Offices in the Regions
H&S	Health and Safety
HASANs	Defra Departmental Health and Safety Notices
HMT	Her Majesty's Treasury
HO	Home Office
HPA	Health Protection Agency
HPA CEPR	HPA Centre for Emergency Preparedness & Response
HPAI	Highly Pathogenic Avian Influenza
HPU	Health Protection Unit

HQ	Head Quarters
HR	Human Resources
HSE	Health and Safety Executive
IAHER	International Animal Health Emergency Reserve
IP	Infected Premises
JCC	Joint Coordination Centre
JRLO	(Military) Joint Regional Liaison Officer
LA	Local Authority
LACORS	Local Authorities Co-ordinators of Regulatory Services
LASSA	Licensed Animal Slaughterers and Salvage Association
LDCC	Local Disease Control Centre
LGA	Local Government Association
LPAI	Low Pathogenic Avian Influenza
LRF	Local Resilience Forum
LVI	Local Veterinary Inspector acting as an Official Veterinarian
MACA	Military Assistance to Civilian Authorities agreement
MHS	Meat Hygiene Service
MoD	Ministry of Defence
MoU	Memorandum of Understanding
NAO	National Audit Office
NCC	News Co-ordination Centre
NCVO	National Council for Voluntary Organisations
ND	Newcastle Disease
NDCC	National Disease Control Centre
NE	Natural England
NEG	National Experts Group
NEEG	National Emergencies Epidemiology Group
NFU	National Farmers Union
NWMT	National Wildlife Management Team
OD(W)	Operations Director Wales
OGD	Other Government Department
OIE	World Organisation for Animal Health (known as Office International des Epizooties until 2003)
PCD	Procurements and Contracts Division
PERT	Procurement Emergency Response Team
PLDS	Public Health Protection, Livestock Demographics and Surveillance (formerly SZER)
PPC	Pollution and Prevention Control
PPE	Personal Protective Equipment
P/RPE	Personal and Respiratory Protective Equipment
PQ	Parliamentary Question
“pre-emptive”	or “preventative cull” firebreak cull”
	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.

PR	Public Relations
Preliminary Cleansing and Disinfection	Biosecurity procedures put in place during the culling and disposal of animals and the initial treatment of contaminated areas of a premises with disinfectant.
PZ	Protection Zone
RADAR	Rapid Analysis and Detection of Animal-Related Risk
RAM	Regional Admin Manager (LDCC Manager in an outbreak)
RCC	Records Control Centre
RCCC	Regional Civil Contingencies Committee
RCU	Regional Co-ordination Unit of DCLG
RCVS	Royal College of Veterinary Surgeons
RDS	Rural Development Service
RFM	Regional Field Manager
RHA	Road Haulage Association
RIDDOR	Reporting of Injuries, Diseases and Dangerous Occurrences Regulations
RIMNET	Radioactive Incident Management Network
RIO	Registered Incinerator Operations (association of)
ROD	Regional Operations Director
RPA	Rural Payments Agency (Defra Agency)
RPAAd	Regional Policy Adviser
RPE	Respiratory Protective Equipment
RRD	Regional Resilience Director (Government Office)
RRF	Regional Resilience Forum
RRM	Regional Resilience Manager (Animal Health) (England) Readiness & Resilience Manager (Scotland & Wales)
RRT	Regional Resilience Team (Government Office)
RSAP WG	Rural Stress Action Plan Working Group
RSPB	Royal Society for the Protection of Birds
RSPCA	Royal Society for the Prevention of Cruelty to Animals
RVL	Regional Veterinary Lead
SAC	Science Advisory Council (Defra)
SAC-ED	Science Advisory Council – Epidemic Diseases sub-group
SAGE	Science Advisory Group for Emergencies
SCG	Strategic Co-ordinating Group
SCoFAH	Standing Committee (of the European Commission) on Food Chain and Animal Health
Secondary Cleansing and Disinfection	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.
SEPA	Scottish Environment Protection Agency
SIR	Security, Intelligence and Resilience Directorate of the Cabinet Office
Sitrep	Situation Report
SoS	Secretary of State

SOS	Slaughter On Suspicion
SRO	Senior Responsible Owner
SSD	Shared Services Directorate
SVD	Swine Vesicular Disease
TSO	Trading Standards Officers
TUC	Trades Union Congress
UK	United Kingdom
UKRA	United Kingdom Renderers Association
UKREP	United Kingdom Permanent Representation to the European Union
VA	Veterinary Adviser
VI	Veterinary Inspector
VENDU	Veterinary Exotic Notifiable Diseases Unit
VLA	Veterinary Laboratories Agency
VO	Veterinary Officer
VTVS	Vetnet Tracing Verification System
WAG	Welsh Assembly Government
WAG RA	Welsh Assembly Government Rural Affairs Department
WCC	Welsh Co-ordination Centre
WID	Waste Incineration Directive
WLGA	Welsh Local Government Association