Rabies Disease Control Strategy

for Northern Ireland

February 2024

The attached is the control strategy for dealing with outbreaks of Rabies in Northern Ireland.

This strategy is supported by information within:
The DAERA Generic Contingency Plan for Epizootic Disease

Department of
Agriculture, Environment and Rural Affairs
www.daera-ni.gov.uk

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https://www.daera-ni.gov.uk/publications/rabies-control-strategy

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Glossary

AFBI	Agri, Food and Biosciences Institute
AHWPD	Animal Health and Welfare Policy Division
AQ	Assembly Question
AVSPNI	Association of Veterinary Surgeons Practicing in NI
C&D	Cleansing and Disinfection
CEDCC	Central Epizootic Disease Control Centre
CPED	Contingency Planning for Epizootic Disease
CVO	Chief Veterinary Officer
DAFM	Department of Agricultural Food and the Marine
DAERA	Department of Agriculture, Environment and Rural Affairs
DCVO	Deputy Chief Veterinary Officer
DEFRA	Department of Environment, Food and Rural Affairs
DoH	Department of Health
DVO	Divisional Veterinary Office
DVO	Divisional Veterinary Officer
EC	European Commission
ECG	Emergency Command Group
EU	European Union
GB	Great Britain
HR	Human Resource
H&S	Health and Safety
ICMU	Information and Communications Management Unit
IP	Infected Place
LEDCC	Local Epizootic Disease Control Centre
MLA	Member of Local Assembly
MP	Member of Parliament
NI	Northern Ireland
NIEA	Northern Ireland Environment Agency
NIOBR	Northern Ireland Office Briefing Room
NISAF	Northern Ireland Scientific Advisory Forum
PETS	Pet Travel Scheme
PHA	Public Health Agency
PQ	Parliamentary Question
PSNI	Police Service Northern Ireland
PVP	Private Veterinary Practitioner
ROI	Republic of Ireland

RSF	Rural Stakeholders Forum
SG	Strategy Group
SPVO	Senior Principal Veterinary Officer
TRIM	Tower Records Information Management
TSG	Tactical Steering Group
UFU	Ulster Farmers Union
UK	United Kingdom
USPCA	Ulster Society Prevention of Cruelty to Animals
VetNI	Veterinary Northern Ireland
VI	Veterinary Inspector
VS	Veterinary Service
OIE	World Organisation for Animal Health
WHO	World Health Organisation

1 Introduction

1.1 This document sets out a framework for how an outbreak of rabies in Northern Ireland (NI) would be managed.

1.2 It covers general control principles for the most likely scenarios for cases of Classical rabies virus and the rationale for such controls. It is not intended to provide detailed operational instructions for how to deal with an outbreak. The Department of Agriculture, Environment and Rural Affairs' (DAERA) Generic Contingency plan for Epizootic Diseases covers these arrangements and should be referred to for detailed explanation of the systems, structures, roles and responsibilities implemented during an outbreak which are referenced in this control strategy.

1.3 By describing this framework all parties affected during an outbreak of rabies will be better placed to respond quickly and effectively to control the outbreak in order to protect public health, maintain or regain our disease-free status as quickly as possible, and to minimise the wider impact on tax payers, the public and the natural environment.

1.4 If an outbreak occurs, evidence and analysis from a number of sources (including veterinary, scientific and economic) will be used to assess the effectiveness of different control options. This strategy should enable affected parties to prepare for the likely impact of these control measures during a rabies outbreak.

1.5 The plan covers control of rabies in animals - information and advice from the Public Health Agency (PHA) on potential cases of rabies in humans can be found at www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/Rabies/. In the event of an outbreak, DAERA will liaise closely with PHA.

1.6 Arrangements for managing an outbreak in GB are covered by the Rabies Control Strategy for Great Britain.

1.7 DAERA has no recent experience in dealing with rabies, although this plan assumes that the control procedures used will be similar to those used for the control of other epizootic disease. There are however fundamental differences which must be borne in mind when dealing with rabies. Rabies is spread primarily by bite and is not highly infectious in nature like foot and mouth disease. Therefore, infected areas may vary from the extreme of one domestic premises where the infected animal had no contact with any others, to the other extreme of a large area which could contain potentially infected wildlife, farm stock and domestic pets. The long incubation period of rabies also means that restrictions and monitoring problems may remain in place long after the last cases have actually been diagnosed.

However, probably the most important difference between rabies and other epizootic disease which we may have to deal with is the threat to the human population. Any incident, suspect or confirmed, regarding a rabid animal is likely to attract huge public and media interest, and it is likely that managing the media will take much higher importance with a rabies outbreak than with other epizootic disease.

1.8 In the event of a disease outbreak in England, Scotland or Wales, DAERA would consider the appropriate level of involvement of officials according to the nature and severity of the outbreak. Key Veterinary Service (VS) and animal health and welfare officials would be notified and would take part in UK led video or telephone conferences.

1.9 In the event of an outbreak of serious epizootic disease (including Rabies) in either NI or ROI, it is recognised by DAERA and the Department of Agriculture, Food and the Marine (DAFM) that sustained co-operation between both administrations will be essential to reduce the further spread of disease.

1.10 When Rabies is suspected or confirmed, in either NI or ROI, notification between the respective Departments will take place as soon as is practicable. Co-operation between both administrations will be essential to reduce the further spread of disease. There are a number of areas where co-operation and agreement will be of particular importance and benefit.

1.11 Close communication will be maintained throughout the outbreak to ensure consistency of approach and measures wherever possible. In such events where zones are imposed up to the border but are not required to extend further, there will be close dialogue between each Department to discuss the extent of the zones. Any decisions on extending zones beyond borders (or not) will be based on an assessment of the risk of disease spread and also a consideration of any potential economic implications of movement controls.

2 Description of Rabies Disease

Summary characteristics of the virus and its spread

2.1 A Rabies virus infection can cause acute encephalitis in mammals, including humans. The virus is usually spread by saliva from the bite of an infected animal. Once clinical signs of the disease develop it is invariably fatal. Clinical signs include paralysis, and behavioural abnormalities leading to a painful death. In high income countries the incidence of disease is now controllable and can be eradicated. Wildlife vaccination has eliminated the disease in substantial areas of mainland Europe and allowed for some countries to be classified as rabies free.

2.2 While the risk of rabies entering NI is low, the implications of the introduction of the disease to human and animal health are so severe that any risk is taken very seriously. With the threat of introduction by wildlife decreasing each year as wildlife vaccination programmes in Europe push the frontier of infection eastwards, the main threat remains, as it always has been, the illegal importation of domestic pets which may be incubating the disease.

Strains and Species

2.3 Humans are potentially susceptible to all strains of rabies. When considering a response to a rabies outbreak the strain of rabies found will have a significant bearing on determining what form of response is undertaken.

2.4 Rabies is caused by negative strand RNA-viruses belonging to the genus *Lyssavirus, family Rhabdoviridae of the order Mononegavirales. According to the International Committee on Taxonomy of Viruses (ICTV) the genus Lyssavirus is delineated into different virus species.*

Lyssavirus species segregate into two phylogroups. Phylogroup 1 includes Rabies lyssavirus, Duvenhage lyssavirus, European bat lyssaviruses, type 1 and 2, Bokeloh bat lyssavirus, and Australian bat lyssavirus. Also, Aravan lyssavirus, Khujand lyssavirus, and Irkut lyssavirus are members of phylogroup 1. Phylogroup 2 includes Lagos bat lyssavirus, Mokola lyssavirus, and Shimoni bat lyssavirus. West Caucasian bat lyssavirus, Ikoma lyssavirus and Lleida bat lyssavirus form independent phylogroup 3. Rabies virus (RABV), the prototype lyssavirus, is responsible for the vast majority of all human rabies cases. However, all lyssaviruses can cause indistinguishable fatal encephalitis both in humans and other mammals.

There is a significant serological neutralization within phylogroups, but very limited cross-neutralization has been detected between phylogroups. Therefore, rabies virus vaccines however, may not provide adequate cross-protection against all genetically divergent lyssaviruses. Little or no cross-protection with pre-exposure vaccination and with conventional rabies post-exposure prophylaxis was observed against lyssaviruses of phylogroups 2 and 3.

Interestingly, bats are primary or sole reservoir hosts for all lyssaviruses except MOKV and IKOV (for which the reservoir species have not been clearly identified yet). Bat associated lyssaviruses appear to have more restricted geographical and host range, with limited public and animal health implications.

Carrier Status

2.5 Currently, classical rabies virus is absent from land mammals in the UK and Ireland. European bat lyssavirus (EBLV) 2 has however been detected at a low prevalence in Daubenton's bats. These bats are found throughout the UK, often close to calm water in open wooded areas. The occurrence of EBLV does not affect our disease-free status, as this is based upon freedom from terrestrial rabies.

2.6 Despite the apparent risk posed by bats it is thought that the greatest risk to humans is still from contact with rabies infected domestic animals that have landed illegally in UK or have had contact with animals that have landed illegally in UK.

Routes of Spread

2.7 Any mammal, including humans, may become infected with the rabies virus and become ill, but it is small carnivores that act as principal reservoirs of infection and maintain the disease in a particular area. Dogs and foxes are typical examples of reservoir hosts. Foxes can exist at high population densities and high population growth rates allowing rapid population recovery following an epidemic, aiding the reservoir of infection.

2.8 Studies have shown that strains of rabies viruses are highly adapted to the reservoir host species. Other mammals and humans only become infected as a result of a spill-over infection from the carnivore host. Adaptation means that the virus is very capable of causing disease for the reservoir host species, with infected animals excreting extremely large quantities of virus in their saliva and requiring only a very low infectious dose of virus for transmission between members of the same species. Conversely, for a spill-over infection to a different species to occur, a very large infectious dose is usually required, and infection may not give rise to excretion of virus in the new host or, if it does, excretion may be at a low level.

2.9 Further information on rabies is readily available from many sources and some useful links are included here:

Rabies: risk assessment, post-exposure treatment, management - Public Health

Defra Animal Disease - Rabies

World Organisation for Animal Health

World Health Organisation

Clinical Signs

2.10 The virus is usually present in the nerves and saliva of clinically affected rabid animals (the salivary glands receive high concentrations of the virus). The route of infection is usually, but not necessarily, by a bite. In many cases the infected animal is aggressive. However, it should be noted that not all rabid animals are aggressive and exhibit uncharacteristic behaviour.

2.11 Other possible but less likely modes of transmission include ingestion of infected animal material, contamination of wounds by saliva and other excreta and secreta/mucous membranes from an infected animal. Under atypical conditions, transmission may also occur through inhalation of highly concentrated aerosolized viral particles. Domestic animals pose a significant risk to humans. Transmission between humans is extremely rare (a few cases have been recorded through transplant surgery).

2.12 The incubation period of the rabies virus is variable and may last for many days or months (sometimes even years). Factors that determine the length of this period include the strain of rabies, the infective dose and the site of the bite. Most infected dogs or cats will develop rabies within two to six weeks. In humans the incubation period may be many weeks or months but, depending on the factors above could be as little as a few days.

2.13 It is only after the virus spreads via the nervous system from the site of the bite to the brain that an animal will become infectious and begin to excrete the virus in its saliva. It is common for an animal to begin to develop clinical signs at this point too. It is possible that the virus may be excreted prior to the onset of such signs. Cats may excrete the virus up to one day prior to the onset of clinical signs and dogs up to 13 days prior to the onset of clinical signs. After infection the virus enters the peripheral nervous system. It travels along the nerves towards the central nervous system. During this phase, the virus cannot easily be detected within the host and vaccination may still confer immunity to prevent symptomatic rabies.

2.14 If someone is bitten, it is advisable to immediately scrub the wound with soap and water, then to seek professional medical help to assess the need for the administration of post-exposure prophylaxis (see Appendix 1 for further details).

2.15 Normally, rabid animals show changes in behaviour, although some animals may die without any clinical signs. Disease typically begins with the 'prodromal' (forewarning signs of disease) stage and progresses to an 'excitement' stage (furious rabies) and then to a 'paralytic' (dumb) stage. The disease can manifest itself with great variability; animals may appear to exhibit only one, two or all three stages of the disease.

Stages of Rabies

2.16 **Prodromal Stage**. The animal's demeanour may change, timid animals may become bold, and friendly animals may show apprehension. There may be hyperactivity, hypersensitivity to noise or light and a tendency for dogs to excessively seek attention and lick their owners. In some cases this stage may be non-apparent and the first signs may be either those of the excitement stage or the paralytic stage.

2.17 **Excitement Stage**. When exhibited, this stage results in an increase in aggression. The animal may attempt to bite objects, other animals and its handler. The eyes take on a staring expression. The lower jaw may droop and there may be copious salivation. There may be a change in voice. Animals may suffer from general itching and increased thirst. Dogs may attempt to break free and run for miles attacking other animals in their way.

2.18 **Paralytic Stage**. There is a developing weakness of muscle groups, often in the legs and tail. The jaw and eyelids may sag and there will be increasing difficulty in swallowing as the pharyngeal muscles become paralysed. Animals may drool profusely. General paralysis may be followed by convulsions and coma before death.

Risk of Introduction

2.19 Our island status makes it unlikely that rabies will be introduced through natural wildlife spread. There are strict legal controls on the entry of animals into NI aimed at preventing the introduction of rabies. Consequently, the largest risk for rabies entering NI would be through an infected animal imported illegally.

Risk of Disease Spread

2.20 The Urban Cycle: In countries where rabies is enzootic, the urban cycle, in which dogs are the main reservoir for rabies infection, is a particular danger to human health because of the close contact between dogs and humans. 99% of human deaths from rabies are associated with dog bites. This cycle is maintained when the proportion of unvaccinated

and stray dogs is high. Urban rabies has been virtually eliminated in North America and the European Union. However, it is still an issue in other countries including Ukraine, and they are classed as unlisted under EU Regulation 2013/576.

2.21 NI does not have the high levels of stray animals required to perpetuate this cycle, but the low levels of dogs vaccinated against the disease would have to be quickly addressed in the event of an outbreak that could not be contained.

2.22 The Sylvatic Cycle: The sylvatic (or wildlife) cycle is still present in various areas of Europe and North America where rabies is endemic in one or more wildlife species, normally foxes.

2.23 Rabies is transmissible to and from wildlife and wildlife often acts as a reservoir for rabies. Broadly, wildlife disease control methods fall into one of the three categories:

i) wildlife vaccination;

ii) minimising the contact between domestic animals and wildlife; and

iii) wildlife destruction.

2.24 Decisions on which strategy to adopt will be based on factors such as time of year, density of species affected, strain of Rabies detected and the extent of likely spread.

2.25 It is particularly important in any outbreak to try to prevent transmission to our wildlife. Although rabies can affect all mammals, its spread depends on the virus becoming established in certain lead species. If the virus were to be introduced to wildlife, it is most likely that the fox would be the principal vector species.

2.26 All mammals are susceptible to infection by rabies virus and can transmit the disease to other mammals. Experimental work has shown that susceptibility is variable according to species with foxes, cats and badgers being highly susceptible. While dogs are intermediate in susceptibility to rabies infection, they remain the world's primary host of the disease and the most likely vehicle for transmission to humans.

Foxes

2.27 In parts of mainland Europe, the fox is still the principal vector and reservoir of rabies and in the absence of the fox, the disease dies out in terrestrial mammals. Consequently, the fox, which occurs over all of NI at varying densities, including many suburban and urban areas, can be considered the major potential domestic vector. It is with this species that this strategy is mainly concerned.

2.28 The loss of innate fear of humans which has been recorded in rabid foxes represents particular problems, especially in urban areas where encounters with humans are more likely. Foxes may enter settlements, approach people and generally behave as if tame. How long such clinical signs last is not known. In this state, such animals are extremely dangerous, as their saliva contains the virus, and they remain very unpredictable.

Feral cats

2.29 Feral cats are considered to be a group of three or more un-owned, unconfined cats and are a possible bridge of transmission of the disease between domestic and wild animals and on to humans. Feral cat colonies are not the responsibility of District Councils and therefore, in the event of an outbreak of wildlife rabies a specialist team of feral cat trappers may need to be employed.

Badgers

2.30 Badgers have not been important vectors in the epidemiology of rabies in mainland Europe, however their population sizes and densities are considerably lower there than in parts of NI. As such, the risk from badgers is considered relatively high, especially where contiguous social groups occur, and in such areas, it will be necessary to control badgers in a rabies infected area. Badgers are also potentially significant vectors because rabies vaccine trials have shown that they are very difficult to immunise.

Bats

2.31 European bats are not involved in the transmission cycle of classical rabies in Europe. The only regions of the world where this occurs is the 'New World'. Any such bats imported into the UK are taken into lifelong quarantine because of the risk they pose. European native bats do not need any form of management in this circumstance. The response where lyssavirus infection is confirmed in bats is explored in more detail in Appendix 1.

Confirming Disease

2.32 Rabies can only be confirmed by laboratory testing on the brain after death. Therefore, if the suspect case is already dead, or the veterinarian and / or owner decide on the humane destruction of the animal or if the animal dies when under observation, then the carcass will be immediately transported to AFBI to arrange for appropriate testing to be carried out. AFBI will remove the head and neck from the carcass which will be sent to the Animal and Plant Health Agency (APHA), Weybridge for laboratory diagnosis. Results can usually be delivered within a few hours. A European reference laboratory will then be asked to confirm the positive result. Slower laboratory tests taking around 2-3 days will also be used to confirm earlier results and identify different serotypes.

3 Principles of Disease Control

Overall control Strategy

3.1 In the event of an outbreak of Rabies, the overall DAERA control strategy is set out below:

OVERALL DISEASE CONTROL STRATEGY

In the event of an outbreak of rabies, DAERA will act swiftly and decisively to:

- control the outbreak in order to regain rabies free status;
- protect public health;
- safeguard the health and safety of those involved directly in controlling the outbreak; and
- minimise any economic impact of the outbreak

DAERA will endeavour to:

- keep to a minimum the number of animals that have to be destroyed, whether for control purposes or to safeguard animal welfare; and
- minimise adverse impacts on animal welfare, the rural and wider economy, the public, rural communities and the environment.

It will achieve its objectives by working with the UK Governments, National and local Operational Partners, those directly affected by the outbreak through their representative groups and, where appropriate, international organisations.

Legislative Powers for Controlling Outbreaks

3.2 The EU Animal Health Law Regulation (2016/429) sets out the measures for the control of rabies outbreaks in the European Union and Northern Ireland. This Regulation is supplemented by Commission Delegated Regulation (EU) 2020/687 and Commission Delegated EU Regulation 2020/689.

3.3 The principal concern of DAERA and UK policy on rabies is to protect the general public against the import of this disease under the Rabies (Importation of Dogs, Cats and Other Mammals) Order (Northern Ireland) 1977 (as amended). The UK's long-standing history of quarantine as the first defence against rabies has been revised in recent years. The Trade in Animals and Related Products Regulations (Northern Ireland) 2011 (as amended) allows for some species of commercially traded animals to be imported without quarantine provided certain conditions are met.

3.4 Also the Non-commercial Movement of Pet Animals Order (NI) 2011 (as amended) negates all requirements for quarantine if pets meet rabies import requirements laid down under Regulation (EU) No 576/2013. Most recent scientific research supports the changes to controls on rabies as being proportionate to the current disease risk.

3.5 Powers for controlling a rabies outbreak are primarily set out in the Rabies (Control) Order (Northern Ireland) 1977 (RCO), which can be used for declaring infected places and areas plus laying down comprehensive procedures for dealing with possible rabies outbreaks. It allows for a number of measures to be applied within the declared place or area including movement and behaviour restrictions (such as requiring muzzles on dogs in public places), prohibition of gatherings of animals, and compulsory vaccination of domestic animals. It also allows for an infected area to be divided into zones permitting different measures in different places. There are also powers available for the culling of foxes should that be necessary in an Infected Area.

3.6 The Diseases of Animals (Northern Ireland) Order 1981 contains provision for instigating government funded vaccination programmes and to slaughter any animal which is infected or suspected of being infected by rabies, or any animal in contact with them.

3.7 The Movement of Animals (Restriction) Order (Northern Ireland) 2004 allows a veterinary inspector who suspects disease to impose restrictions or requirements to prevent the spread of the disease including serving a notice prohibiting the movement of any animal at the premises in question.

3.8 The Rabies Virus Order (Northern Ireland) 1979 prohibits the importation, keeping or deliberate introduction into animals of rabies virus except under licence.

3.9 The Dogs (Northern Ireland) Order 1983 as amended by the Dogs (Amendment) Act (Northern Ireland) 2011 includes the power for licensing and seizure of stray dogs.

Compensation

3.10 The Diseases of Animals (Northern Ireland) Order 1981 fixes the amount payable in respect of animals destroyed under the Rabies (Control) Order (Northern Ireland) 1977. In the case of an animal affected with rabies at the time of destruction, a DAERA valuer will place a value on the animal and “compensation shall be payable at the rate of one-half of its value immediately before it became so affected. In all other cases, the compensation will consist of the full market value of the animal immediately before destruction”.

Types of Rabies Outbreak

3.11 Broadly speaking, there are two principal types of incidents to be considered:

- rabies is detected and the incident is deemed to be contained, e.g. in quarantine facilities.
- rabies is detected and the index case cannot be established.

3.12 In the latter it is important not to discount the possibility that the virus is widespread in wildlife. In both situations however, it is crucial to urgently establish the suspect animal's recent contact history within NI.

Phases of a Rabies Outbreak

3.13 The phases of a rabies outbreak may be divided into:

A. Suspicion that rabies exists;

B. Confirmation that rabies exists;

C. Containment of rabies (prevention of spread);

D. Determining and implementing a rabies outbreak control strategy;

E. Determining and implementing a rabies outbreak exit strategy; and Returning to normal business.

3.14 This section outlines the mechanisms which have been put in place to ensure that the response to an outbreak of epizootic disease can be implemented in a co-ordinated and consistent manner. What follows is an overview of the process through which suspicion of disease will reach eventual confirmation if appropriate. Upon confirmation of disease, various structures and groups will be activated to support the response.

A: Suspicion that rabies exists

3.15 There is a legal duty on any person who knows or suspects that an animal is suffering from rabies, or had died from the disease, to report this to the Local Divisional Veterinary Office (DVO) or the Police Service for Northern Ireland (PSNI) under article 4 of the Rabies (Control) Order (NI) 1977.

3.16 On report of suspicion of rabies, a Department Veterinary Inspector (VI) will arrange an investigation under article 6 of the Rabies (Control) Order (NI) 1977. For this purpose, the

VI has power to enter premises (including dwelling houses), to order the destruction of suspect animals, to remove those animals or animal carcases for veterinary investigation and to take diagnostic samples.

3.17 There is a duty on the occupier of any premises on which there is a suspicion of rabies to be fully co-operative during any investigation under Article 6 (3) and (4) of the Rabies (Control) Order (NI) 1977. This includes assisting with the inquiry and supplying any necessary information (including movements of the animal in question).

3.18 On suspicion of rabies and where the animal in question has bitten or scratched a person, DAERA will consider immediately destroying the animal. In such cases the Department's Humane Slaughter Team may be deployed to destroy the animal. The carcase will be transported to AFBI where the skull will be removed and dispatched to APHA Weybridge for laboratory examination of the brain. The remainder of the carcase will be incinerated at AFBI.

3.19 The first step in the control of a possible outbreak is containment. Restrictions can be placed on suspect premises by serving a legal notice on the owner/occupier of the premises to declare it an "Infected Place" under article 5 of the Rabies (Control) Order (NI) 1977. The notice will be served where there are reasonable grounds to believe that rabies exists or has, within the preceding 56 days, existed at a premise.

3.20 If, following the investigation, the VI does not suspect disease then the restrictions will be removed.

Declaring an Infected Area

3.21 On the basis of intelligence gathered during the VI's investigation, DAERA may declare all or part of NI as an "Infected Area" under Article 8 of the Rabies Control Order (NI) 1977. An "Infected Area" may be declared by DAERA where it is believed that rabies exists or has existed within the previous 6 months.

3.22 The decision on the size, duration and control measures to apply within an Infected Area is made by the Department's Strategy Group (SG) and informed by the Chief Veterinary Officer (CVO) on veterinary advice. Factors that will have a bearing on the Infected Area include geographical location, species affected, strain, possible contacts, human risk and exposure to wildlife. The "Infected Area" may be divided into separate zones in which different control measures apply. The size of the zones and the measures to be enforced within them will again be determined by the SG. If no zones are specified in the notice then the entire Infected Area is considered a single zone.

Infected Area encompassing NI and ROI

3.23 When rabies is suspected or confirmed, in either NI or the ROI, notification between the respective Departments will take place as soon as is practicable. Co-operation between both administrations will be essential to reduce the further spread of disease. There are a number of areas where co-operation and agreement will be of particular importance and benefit. Close communication will be maintained throughout the outbreak to ensure consistency of approach and measures wherever possible.

3.24 In such events where Infected Areas are declared up to the border but are not required to extend further, there will be close dialogue between each Department to discuss the extent of the Area. Any decisions on extending zones beyond borders (or not) will be based on an assessment of the risk of disease spread.

Case Conference Call

3.25 When a suspect case in NI is first identified from either clinical inspection or preliminary test results the CVO would notify the CVO in DEFRA and the CVO in DAFM. The CVO in Defra would then call a relatively brief case conference to consider the known circumstances and to determine next steps. Such meetings would likely be chaired by the CVO (NI). Attendees would usually comprise the 4 UK CVOs, with possibly key policy and veterinary officials from each UK agricultural department. In particular this meeting would determine whether the circumstances warranted triggering an Amber Teleconference.

B: Confirmation of rabies

3.26 Once the samples have been submitted to APHA Weybridge (submitted by AFBI) it may take up to 48 hours to confirm or negate disease. The CVO (NI) will confirm or refute the existence of rabies to the SG. This will be done on the basis of the VI report and the results returned from the laboratory. The period between suspicion and confirmation of rabies will be used by DAERA to implement the contingency plans and make initial preparations to increase disease management resources if required. These include activation of Central and Local Epizootic Disease Control Centres, declaring relevant infected areas and confirming measures within these areas. DAERA has a number of agreements in place with operational partners which can be activated as required. For a rabies outbreak these partners would include Department of Health, the Public Health Agency, District Councils, PSNI and Northern Ireland Environment Agency (NIEA).

C: Containment of rabies (prevention of spread)

3.27 Once rabies has been confirmed, the primary objective is to prevent the spread of disease. Although an “Infected Area” may be declared on suspicion, it is more likely that

DAERA would declare an “Infected Area” on confirmation of the disease. At this point, the SG will have the required information to determine the geographical area that the Infected Area should cover, as well as the zones that are to be contained within that area and the specific restrictions to be imposed within those zones. During the early stages of a confirmed outbreak boundaries for any infected area may well have to be adjusted in light of new evidence or information regarding the spread of the disease.

Restrictions

3.28 The type of restrictions (under the Rabies (Control) Order (NI) 1977) that could apply within an infected area are the banning of animal gatherings, the muzzling of dogs, the leashing of dogs, the requirement for restrictions on the movement of animals within the Infected Area and the compulsory vaccination of pets.

3.29 The species to which the Infected Area Order can apply are listed at Schedule 1 of the Diseases of Animals (Northern Ireland) Order 1981. In some circumstances, there may be no requirement to declare an Infected Area. For example, where the suspect/confirmed rabies case has had no contact with other rabies susceptible animals.

3.30 The most likely cause of rabies spreading is the movement of infected animals. VS staff will trace actual and suspected movements of animals that may have carried the infection into the wider domestic or wild animal population. A veterinary risk assessment will be carried out by DAERA VS to assess the likelihood of spread of rabies by these routes.

3.31 The information supplied by the owner of pets and / or the owner/occupier of land or premises, in the first instance is absolutely crucial to containing the spread of the virus. Under article 6 (4) of the Rabies (Control) Order (NI) 1977 that individual is compelled to impart all the information they possess on the movements of the animal in question and the contact that animal has had with humans and all other rabies susceptible animals. Not to do so is an offence under the Diseases of Animals (NI) Order 1981.

3.32 Based on the evidence gathered, if the assessment of risk of disease spreading is negligible then no action will be taken. If however, the assessment of risk is low to medium, then domestic and wild animals routes, pathways and corridors (paragraph 3.28) will be put under surveillance for any signs of the disease spreading. If the risk is deemed to be high then the domestic animals (that may have had contact) and foxes found along routes, pathways and corridors can be humanely destroyed / euthanized under article 7, provision IV of Schedule 3 and article 9 of the Rabies (Control) Order (NI) 1977.

Area movement controls

3.33 On declaration of an Infected Area, certain powers are conferred on specified individuals. Under article 9 of the Rabies (Control) Order (NI) 1977, the Department has discretion to destroy foxes not held in captivity within the Infected Area if it is deemed necessary to contain an outbreak of rabies.

3.34 All reasonable steps must be taken to inform the occupier and any other person who may be on the land, of the proposal to destroy foxes and the methods to be employed, before commencing destruction operations. No person shall obstruct the destruction of foxes or interfere with any resulting fox carcase.

3.35 Section 12 (2) (a) of the Disease of Animals Order (NI) 1981 provides that, in an area declared an Infected Area, the Department may by Order authorise the destruction of any wildlife specified by that Order. So, to allow the destruction of wildlife other than foxes in an Infected Area, the Department is required expressly to provide for this in the notice that declares an area an Infected Area and to cite section 12 of the Disease of Animals Order (NI) 1981 as an enabling power (along with the Rabies (Control) Order (NI) 1977).

3.36 Once this has been executed, there are no other requirements to be met before destruction can commence other than that these powers are exercised within the geographical limits of the Infected Area. Therefore, these provisions can permit the pre-emptive destruction of pockets of wildlife to control the spread of rabies.

3.37 Under article 10 of the Rabies (Control) Order (NI) 1977 a notice may be issued in writing to prohibit any sporting or recreational activities within the Infected Area where it is considered that such activity may cause the spread of rabies. Under article 11 the Department has the power to erect or instruct the erection of warning notices throughout an Infected Area, including on its boundaries.

3.38 Other powers / provisions may be applied by order of the Department to the different zones in an infected area under Schedule 3 Provision VII of the Rabies (Control) Order (NI) 1977. These powers are not conferred automatically on declaration of an Infected Area but need to be expressly cited in the notice declaring an Infected Area. Included amongst these is the power to prohibit (except under Licence) hunting (including deerstalking), shooting, cubbing, dog racing and point-to-point meetings, and also the movement of such species of animals as the Department may specify into or out of a zone. Other provisions relate to the detention, confinement and control of dogs, cats and other animals, their vaccination against rabies, the action to be taken in respect of breaches of such requirements and other ancillary and incidental matters.

3.39 An example of such controls on the movement of domestic animals is the requirement that cats and dogs must be kept on their owner's premises (i.e. not permitted to run free). It could also mean controlling the movement of animals in and out of an Infected Area.

3.40 Restricting pets to the owner's home and garden should be considered as a possible control measure under any rabies outbreak scenario. For minor and localised incidents such controls may not be viewed as proportionate given the challenges that pet owners will face in meeting the longer-term welfare needs of the animal. Enforcement of these controls will require a significant commitment of local authority time and resources. For more significant incidents or a wildlife outbreak, such restrictions are more likely to be imposed.

3.41 Restricting movement in and out of an Infected Area presents particular logistical and practical issues but is an option that will need to be considered at each stage of an outbreak.

Behavioural Restrictions

3.42 The use of behavioural restrictions will be determined depending on the particular circumstances of an outbreak but should be proportional and practical. The key behavioural restrictions that could be enforced in an Infected Area are:

- Leashing: Requiring dogs to be on leads at all times when not on their owners' premises; and
- Muzzling: Requiring dogs to be muzzled when outside their owners' premises.

3.43 As with other control measures, the use of these restrictions is likely to increase in line with the severity of the incident, the number of cases and their geographical locations and/or if there is a wildlife element to the outbreak. These restrictions could simply be encouraged through communications activities or could be required and enforced as part of an Infected Area. The use of leads could be implemented almost immediately under any outbreak scenario as almost all dog owners have leads for their dogs. Not all dog owners own muzzles so DAERA would need to consider how these could be obtained and distributed if the use of muzzles were considered an appropriate control measure.

Animal gatherings

3.44 Animal gatherings within a declared Infected Area could be banned under the provisions of the Rabies (Control) order (NI) 1977. However, the only way to ban a dog or cat show taking place elsewhere in the country under the terms of the Order would be to extend the Infected Area to include this location. Given practical and presentational challenges

of extending the infected Area, banning such gatherings is likely only to be considered a proportionate response in major outbreaks or where there is a risk that the disease could be spread by infected wildlife. If a scheduled animal gathering fell within a localised Infected Area, then there is a high likelihood that it would be banned.

3.45 The alternative to banning an animal gathering would be to require dog and cat shows to be licensed, which would allow shows to go ahead with certain restrictions, such as requiring all participating animals to be vaccinated prior to the gathering and housed separately.

Control of strays

3.46 The control of strays is the responsibility of the District Councils and is necessary to prevent stray or uncontrolled animals becoming a reservoir of the disease. District Councils also have the power to seize animals (as do the PSNI) if the owner fails to comply with any control provisions. District Councils may need to locate detention facilities within their area and DAERA will need to be informed via the LEDCC of the location of these detention pounds. District Councils should have implementation plans for dealing with rabies outbreaks that will include identifying potential holding areas for stray animals.

3.47 The enforcement of these controls would require a significant commitment of District Council time and resources so the likelihood of using this control method would increase in line with the severity of the incident. If an animal from the stray population presents with rabies, then the control of stray animals will be an essential disease control measure.

Vaccination

3.48 Whether vaccination would be employed as part of the control strategy is an issue that should be considered and may be informed by where the first outbreak is confirmed.

3.49 **First confirmed case is in wildlife:** A vaccination programme in the relevant area should commence immediately, even if there is no evidence of onwards transmission. The need for control without delay is supported by modelling work. Vaccines will be administered by baits rather than trapping, injection and release.

3.50 **First confirmed case is in a domestic animal and no epidemiological link to wildlife species can be identified:** A wildlife vaccination programme should not be triggered until disease is confirmed or a significant epidemiological link to wildlife is identified during the investigation.

3.51 **First case identified in domestic animals with potential epidemiological link to wildlife:** In this case the monitoring of wildlife should be considered, together with other

evidence by the Veterinary Epidemiological Unit and the Northern Ireland Scientific Advisory Forum, whom should make a recommendation to the Strategy Group.

3.52 The Veterinary Science team will coordinate actions in regard to wildlife disease control. In a case where there is a domestic animals rabies element to an outbreak, they will also need to liaise with District Councils, head of Forestry and NIEA Wildlife Inspector to coordinate efforts between domestic animals and wildlife control.

3.53 Compulsory vaccination of domestic animals under provision V of Schedule 3 of the Rabies (Control) Order (NI) 1977 would be used as a control. Vaccination of domestic animals is only likely to be considered within an Infected Area where the virus has spread, or may have spread, to wildlife. However, the benefits of vaccination would be communicated to pet owners. Rabies vaccine for domestic animals is available on the open market and some pet owners may choose to vaccinate their pets pre-emptively given it is a relatively inexpensive treatment. If it became necessary to vaccinate domestic animals, then those animals will need to be clearly marked in a manner determined by DAERA. It is likely that the vaccination will be carried out by private vets and at temporary vaccination centres that may be set-up for this purpose if required. DAERA would lead on implementing the vaccination policy and will have responsibility for ensuring that there are sufficient stocks of the correct vaccine to deal with an outbreak at any given moment in time.

3.54 It will be important that a register is held at the LEDCC or vaccination centre and updated daily to ensure that any strategy of vaccination is successful.

3.55 The main objective is to establish the index (first documented) rabies case for an outbreak and to stop any routes of spread. A veterinary enquiry may be carried out on the first confirmed case in an attempt to ascertain how it became infected. If this is possible then it will provide a valuable source of information in the back-tracing process.

Determining the source of the outbreak

3.56 Initially, there will be great uncertainty about the origin of the disease and DAERA VS staff will try to determine the index case. In order to do this they will back-trace the actual and potential movement of animals. To effectively carry out their duties in this regard they will be dependent on the full co-operation of the individuals' involved and good intelligence. A veterinary risk assessment will be carried out by the DAERA VS to assess the likelihood of spread of rabies by these routes to other animals. Visits will be made to those premises that are identified. Animals on those premises will be examined and attempts will be made to identify which, if any, of those animals is the index case. If there is reasonable suspicion that rabies exists on the premises, then it will be declared an "Infected Place" and routes of spread from and to it will be investigated.

Enforcing Biosecurity

3.57 Under article 5, rule 8 of the Rabies (Control) Order (NI) 1977 it states that every part of an Infected Place will be disinfected by the occupier in a manner approved by a Veterinary Inspector. The owners/occupiers of other premises within the Infected Area will be issued with guidance and advice on disinfection.

Other control measures / issues

3.58 In any scenario involving wildlife, researching and undertaking appropriate surveillance, by DAERA into the numbers of badgers and feral cats present in the area surrounding the outbreak, together with identifying the effect the local habitat is likely to have on fox numbers should be considered in order to establish the different species that will need to be targeted and their likely population density.

3.59 Routine testing for rabies during rabies-free periods is not necessary unless clinical signs dictate otherwise. Wildlife rabies vaccination should continue for two years after the last confirmed case, and during this time routine testing of wildlife in the general area would be expected.

3.60 Rural Areas: In rural areas it will be necessary to determine whether feral cats are present. It will be necessary to determine the badger density in the area. It will be assumed that there are foxes in the area at a lower density than in urban areas. The lower number of human dwellings may also allow for more regular bait spread.

3.61 Issues regarding control in rural areas might include:

- Difficult terrain for manual baiting;
- Disseminating information about the baiting, especially if the area is one which attracts a lot of visitors;
- Difficulties with establishing the whereabouts of badger sets.

3.62 Urban Areas: In urban areas it will be assumed that foxes and feral cats will be present. Generally, it will be assumed that badgers are not present unless local information suggests otherwise. If a control zone bisects an urban area, control measures will most likely be extended to include the whole of the urban area.

3.63 Issues regarding control in urban areas might include:

- The comparative high density of foxes in urban areas;
- Difficulties laying baits in areas with high human population density and a high number of domestic dwellings;
- Difficulties ensuring that baits remain undisturbed in areas that see a large amount of human and domestic animal traffic, for example parks;
- The large numbers of permissions / notifications that would need to be sought / delivered if baits were to be distributed on private land.

D: Determining and implementing a rabies outbreak control strategy

3.64 DAERA Strategy Group will determine the rabies control strategy in NI. Determining the strategy must take account of:

- The legal framework that is in place to deal with a rabies outbreak;
- The requirements of the EU and the World Organisation for Animal Health (OIE);
- The available resources, including laboratory resources;
- The cost benefit of proposed measures;
- The likely speed of application and effect of proposed measures;
- The size and extent of the outbreak;
- The approach of other UK governments;
- The need to minimise the effects on the community;
- The need to minimise the effects on the local and wider economy;
- The availability and the efficacy of vaccine;
- The availability of tests to distinguish between vaccinated and non-vaccinated animals through the use of Differentiating Infected from Vaccinated Animal (DIVA) vaccines;
- The availability and reliability of tests to distinguish infected from non-infected animals;
- Whether the proposed control strategy has implications for a successful exit strategy.

3.65 DAERA will decide and communicate control strategies and timeframes to those affected as quickly as possible (subject always to the uncertainties presented by disease outbreaks).

E: Determining and implementing a rabies outbreak exit strategy

3.66 Determining a workable exit strategy to restore NI and the rest of the UK to Rabies free status is crucial when considering how to approach an outbreak and must be at the forefront of any plans that are put into action. In accordance with the OIE Code, the period of time allowed to lapse between the end of the surveillance period and declaring the UK to be rabies free is currently two years. During this time there must be no further cases of the virus for rabies free status to be restored. Deploying a vaccination programme as a control method may prolong the time between the suspicion and exit stages. This is because the surveillance period to prove NI is rabies free will be extended every time another confirmed case is found until no further cases are confirmed.

Trade Implications

3.67 Once an outbreak has been confirmed to the EU the Commission will decide about any trade restrictions or restrictions to pet movements within the EU that may be applied to NI.

4 Roles and Responsibilities

General Roles and Responsibilities

4.1 In general terms, the responsibility for execution and enforcement of the various provisions of The Rabies (Control) Order (Northern Ireland) 1977 lies with DAERA's VS. The strategy adopted by VS when rabies is suspected or confirmed is determined by the Strategy Group.

4.2 **CVO** is responsible for:

- The decision to convene an amber teleconference;
- Refute or confirming the presence of rabies in NI;
- Providing veterinary advice to Minister and the Strategy Group;
- Ensuring the staff from VS investigate any suspected rabies incident as soon as practicable;
- Making recommendations to the Minister regarding the suspicion / confirmation of disease on any premises;
- Advising the Minister on the tracing of possible spread of the virus to other premises;
- Recommending to the Minister that an Infected Area should be declared to contain the virus;
- Recommending to the Minister that Infected Area restrictions need to be revoked when rabies is no longer suspected.

4.3 **Head of Animal Health and Welfare Policy Division** is responsible for:

- providing the lead to the Animal Health and Welfare Division's response to a rabies outbreak;
- ensuring appropriate business continuity arrangements are maintained;
- managing the policy response to a rabies outbreak,
- ensuring that appropriate legislation is in place;

- ensuring media stakeholders and other communications are managed; and
- providing appropriate liaison with other UK Governments.

4.4 **Veterinary Service** will as directed by the CEDCC:

- Set in place movement restrictions - into, out of and within a protection zone;
- Ensure control of cats and dogs, and other animals as necessary;
- Arrange for the seizure, detention and disposal of stray animals;
- Arrange for the compulsory vaccination of pets and setting up of vaccination centres; there may also be a need to set up centres for voluntary euthanasia of pets;
- Compulsory notification of susceptible animal deaths within infected area;
- Ensure suspect cases are visited as soon as possible and revisited daily, animals in contact should be visited at least weekly;
- Ensure posters are distributed for display in local DVOs;
- Ensure cleansing and disinfection of infected places is carried out if a dwelling house is involved, advice may be sought from the local Environmental Health Officer, and the Consultant in Communicable Disease Control in the relevant Health Board.

4.5 **The Press Office:** To ensure consistency of message, accurate scientific information and to manage public concerns, the Strategy group will have the lead role on all media communications from all partners.

4.6 **District Councils** will employ all available trained manpower and dog catching equipment to ensure the rapid removal of stray dogs within the infected area. The strays shall be placed in Council dog pounds and shelters, or other accommodation provided by DAERA within the infected area.

4.7 District Councils may be asked to provide centres for voluntary euthanasia of pets brought in by members of the public. Euthanasia will be carried out by DAERA Veterinary Officers or by arrangement between DAERA and local veterinary practitioners.

4.8 District Councils may also be asked to make available facilities to be used as vaccination centres for pets.

4.9 District Councils will display posters along with maps of the infected area in locations under their control.

4.10 **Department of Health (DoH) / Health Protection Agency (HPA):** These organisations' main role are to identify and respond to health hazards and emergencies with significance to human health such as a rabies outbreak. They will also be involved in providing medical services as required as well as issuing public health communications.

4.11 **Police Service for Northern Ireland (PSNI):** In the event of a rabies outbreak the PSNI will fulfil a number of specific roles, in addition to their wider role in relation to maintaining order and protecting the public. Their involvement will be dependent upon the severity and nature of other requirements being placed upon them. This could involve working closely to enforce movement controls and the policing of infected places, providing general co-ordination of emergency support, particularly in pursuing legal entry to premises. Furthermore, if an animal is too inaccessible or too ferocious to capture, a police marksman may be engaged to dispatch the animal in the interests of public safety.

4.12 **Ulster Society for the Prevention of Cruelty to Animals (USPCA):** Lines of communication with the USPCA should be clear to prevent them unwittingly picking up animals in restricted areas.

4.13 A summary of the roles and responsibilities of these partners as well as others is shown in Appendix 2.

5 Communications

5.1 Good communications will be vital at every stage in controlling a rabies outbreak. Early regular and consistent involvement with the media and stakeholders will be necessary in order to ensure that reporting is responsible, accurate and informative, promoting awareness of the issues involved and ensuring that the necessary control measures are understood and accepted, particularly within the Restricted Zone.

5.2 District Councils may also be asked by DAERA to assist with communicating with local residencies, businesses and the media. Interested parties such as animal charities, pet owner groups, breed groups and organisers of animal events will need to be kept informed as they will be communicating with their members. Communicating with key operational partners and stakeholders will ensure consistency of information.

5.3 Keeping the public informed of the nature of the risk and encouraging them to take important precautions in a proportionate manner will be a central principle in controlling the spread of the disease. Responsibility for communications in respect of human health aspects will be led by DoH/PHA.

5.4 Key features of the communications strategy will include:

- Detailed communications plan for each stage of an outbreak (suspect case, disease confirmed, during control measures, ongoing controls);
- Agreed key messages that cover several strands (awareness, risk reduction, context and proportionality, acceptance and support for government interventions);
- Public awareness campaigns to increase knowledge of the risks and the various risk reduction measures that can take be taken;
- Targeted communications aimed at pet owners and those at higher risk of coming into contact with suspected cases to facilitate cooperation with control measures.

Communications in a wildlife rabies outbreak

5.5 DAERA Communications in a wildlife outbreak will need to be focused on promoting domestic animal health. Responsibility for communications in respect of human health aspects will be led by DoH / PHA.

5.6 Transparency about the methods to be used will be necessary, for example if bait is to be laid, the public will need to be aware of the health and safety issues involved and also encouraged not to interfere with the baits.

5.7 Communication through publicity campaigns that will help control rabies in a wildlife outbreak will be aimed at pet owners, people living in the area subject to control measures, visitors to the area and children.

5.8 Key messages that will need to be disseminated include:

- Dogs should be kept on leads within the infected area;
- Any potential contact between a domestic pet and a wild animal will need to be reported to a vet;
- Members of the public that observe an animal acting uncharacteristically should report this to the Helpline;
- Baits whether poison or vaccine based need to be undisturbed;
- Other communications will need to manage the necessary notifications and permissions required if baits are to be placed on private land;
- Any contact between a person and a wild mammal will need to be reported to the health authority immediately; and
- Any bite by a susceptible domestic animal, known or unknown, will need to be reported to the health authority immediately.

6 Reviewing and Exercising the Strategy

6.1 This strategy is a “living document” and is subject to regular and ongoing review by DAERA with input from industry and other stakeholders.

6.2 In order to maintain a state of readiness, in the absence of disease, it is necessary to exercise contingency plans and train appropriate staff on a regular basis. The scale, nature and frequency of such exercises will depend on the organisational role and responsibilities and the levels of existing training and experience within any organisation which has a role to play in disease control. The lessons learnt from exercises or from dealing with outbreaks of disease will inform revisions to this strategy.

6.3 Any comment or questions relating to the content of this strategy should be sent to:

Animal Disease Control Policy
Jubilee House
111 Ballykelly Road
Ballykelly
Limavady
BT49 9HP

Appendix 1 - Bat Rabies Control

1. Introduction

This annex describes government policy for how bat rabies incidents in NI should be managed. It contains specific advice for dealing with bats that are suspected of being infected with bat lyssaviruses. By describing the procedures, all parties involved will be better placed to respond quickly and effectively to the management of a bat rabies incident or suspected case in order to protect public health and to minimise the wider impact on the public and the natural environment. Most of the sixteen lyssaviruses are known to be carried by bat species. All can cause rabies in humans and other mammals. Only two are commonly reported in Europe European Bat Lyssaviruses Type 1 and Type 2 (EBLV-1 and EBLV-2) though others, BBLV and LBLV, are known. EBLV-1 is commonly associated with the Serotine bat and although recently isolated in UK for the first time, is still only confirmed in a small population of GB bats in a restricted area, therefore EBLV-1 is not considered endemic in UK. Endemic should relate to being found widely in UK with a regular frequency (albeit rarely). EBLV-2 is commonly associated with Daubenton's bat and can be considered as endemic.

2. The disease

Bat lyssaviruses appear transmissible to all mammals, including humans where they all cause rabies (i.e. serious and invariably fatal disease in the absence of post-exposure treatment). In common with all other lyssaviruses there is no treatment for rabies caught from bats once clinical signs appear and so prevention of infection and immediate postexposure treatment is vital. Diagnosis of rabies in living bats (i.e. lyssavirus infection) is uncertain and a definitive diagnosis can only be made by laboratory testing after the bat's death. Bats in some contexts may be infective without symptoms (e.g. wild caught bats handled briefly before release back to the wild), thus requiring a precautionary approach by bat workers. Despite the endemic nature of EBLV-2 in UK it is considered that the risk of a human case of rabies in the UK caused by a bat is 'very low', given the low level of contact between the majority of the public and bats; but is not negligible. It should be noted that bats around the world are known to carry a variety of diseases. However, for bats found in the UK and Europe, only EBLVs are zoonotic. The Joint Nature Conservation Committee is the public body that advises the UK government and devolved administrations on UK-wide and international nature conservation. The Bat Conservation Trust (BCT) is the principal national non-governmental organisation devoted to the conservation of bats. Information from their National Bat Monitoring Programme describes seventeen breeding species of bat 'native' to the UK. All can fly here from continental Europe and some may do so regularly, as a migratory behaviour in a long-lived species. Post-exposure treatment in humans is effective in preventing the disease from developing provided it is administered at the appropriate time.

3. Transmission

Bat lyssaviruses are transmitted through contact with an infected bat through a bite or scratch. Research has indicated that the risk of cross species transmission of lyssaviruses from bats to other animals should be considered very low, but is not negligible, and that a precautionary approach to contact with bats should be maintained. There have been incidents worldwide where humans and other animals have contracted rabies and died following infection with bat lyssaviruses. In 2002, a Scottish bat worker died following contact with infected bats.

4. Clinical signs in bats

Bats are nocturnal so if found on the ground during daytime this may also be considered to be abnormal behaviour and likely to give rise to human intervention. Whilst this is often the result of an attack from a cat; or the fact that it is a juvenile animal; or the bat becoming dehydrated; the risk of rabies, whilst minor, must always be considered when encountering a grounded bat.

Clinical signs of lyssavirus infection in bats are uncertain and variable. Suggestive behaviours in grounded bats may include unusual aggression, disorientation, uncoordinated movements, trembling and spasms. Excessive vocalisation has also been associated with some clinical cases. The effects of one or more these may inhibit flight, or may also be accompanied by signs of partial paralysis, affecting wings or the swallowing reflex. Conversely, infected bats can also display passively e.g. lethargy, dehydration, avoidance of others and non-grooming.

5. Surveillance and disease distribution

APHA operates a passive surveillance programme testing bat carcases submitted by members of the public. The passive surveillance programme was established in 1986 and over 15,000 bats have been tested.

In order to understand the prevalence of lyssaviruses in the UK bats, an active surveillance programme also ran from 2003 to 2012. Three native species, Daubenton's bats, Natterer's bats and the Serotine bat, were caught from the wild sampled and released. Antibodies to EBLV-2 were found in a small proportion of Daubenton's bats.

A small number of Daubenton's bats tested in GB have been found to be positive for EBLV-2. A table listing these incidents can be seen on the rabies in bats page on .GOV.UK.

In 2018, two Serotine bats from the same site in southern England tested positive for EBLV-1 virus. Previously, there had been three bats that tested positive for EBLV-1 antibodies in the last decade; a Serotine bat in England and two Natterer's bats in Scotland although in all these cases the virus was not isolated.

6. Legislation and control measures

The powers for controlling a rabies incident in NI are set out in the RCO. However, as EBLV-2 is endemic in UK, an incident would not be dealt with in the same way as that for classical rabies, i.e. as an exotic disease.

Therefore, the deployment of measures set down in RCO to control the spread of bat lyssaviruses in other species following an incident would, in the main, not be instigated given that there are no known incidences of bat lyssaviruses becoming established in other, more risk-associated, animal populations. Expert advice would be sought in designing and implementing any control measures in animal populations should they be required.

In UK, all bat species and their roosts are legally protected, by both domestic and European habitats legislation. This makes it an offence to deliberately kill, possess or transport a bat unless permitted under licence from a Statutory Nature Conservation Organisation (SNCO) - Natural England, Scottish National Heritage, National Resources Wales and Northern Ireland Environment Agency.

7. Key roles and responsibilities

Arrangements for managing an incident in NI would fall to DAERA, who would be responsible for providing strategic leadership in management of an exotic bat lyssavirus incident. Strategic decisions would be taken by the relevant minister or relevant CVO, delegated as appropriate. Their decisions would be based on advice from bat experts, veterinarians, policy makers, economists and delivery agents e.g. NIEA.

PHA and DoH would be responsible, in conjunction with DAERA, for disseminating information regarding human health in the event of a bat lyssavirus incident, including advice for the general public, health practitioners and local authorities. They would also provide advice on pre and post-exposure treatment, issue vaccine and Human Rabies Immunoglobulin, and provide information to the relevant administration on human health aspects of rabies issues.

The BCT National Bat Helpline provides advice to the public on understanding and protecting bats. The helpline number is 0345 1300 228 and their website provides information on encountering and caring for grounded bats.

8. Reporting

Rabies is a notifiable disease and anyone who suspects rabies in an animal, including bats, must report it to DAERA via the DAERA Helpline on 0300 200 7840 or local DAERA Regional Direct Office. Failure to report suspicion of rabies is an offence.

Any incident where there is suspect human contact with bats might be reported directly to DAERA by the public calling the DAERA Helpline. Sometimes they will have called the BCT first who will provide them with the relevant DAERA contact details. Any dead bats submitted to DAERA by BCT or the general public using the BAT01 form, with details of a human contact incident included on the form will be dealt with urgently by AFBI and details of the contact passed on to DAERA if the bat tests positive for lyssavirus. Irrespective of the route of reporting, DAERA would, as a first priority, contact the person involved in the incident to recommend immediate first aid and advise that they consult their doctor or a Local Health Care Trust to obtain medical advice, and have a prompt risk assessment carried out to determine the need for post-exposure treatment.

9. When encountering a bat

Bats generally avoid people but many species roost in buildings, including homes. In the UK, bats are most active during the summer. This is the time when the public is most likely to encounter a bat which is grounded or exposed away from its roost (e.g. on a wall) and needs to be moved.

BCT's guidance states that in all cases where a member of the public encounters a bat which needs to be moved, they should not attempt to handle it unless protected from bites and scratches (using gloves, towels etc.). They should look to contain the bat by carefully placing a box (ice cream tub or shoebox) over the bat and then a piece of cardboard should be inserted underneath, to act as the floor of the container, and the box should be inverted carefully. A bat that appears fit enough to fly again e.g. was seen recently to be flying strongly, then it should be released, preferably at dusk.

If the bat does not appear fit enough to fly, then BCT can provide contact details for a suitably trained and vaccinated local bat carer who should be able to advise on the best course of action. They can also provide contact details for the DAERA Helpline to report if the bat appears unwell or is exhibiting unusual behavioural signs.

In the case of a bat encountered that has bitten or scratched a person or a pet (or been bitten by a pet), and has not been released as covered above, the bat carer will assess the bat for possible signs of rabies and report this to the relevant country authority.

10. Suspect bats: risk assessment

A suspect animal is one showing clinical signs suggestive of rabies. The VI will undertake a veterinary inquiry to obtain the facts and inform their decision about whether to investigate the incident first hand. The person with the bat must be advised to safely retain it (taking into account the welfare of the animal) and keep it isolated from all other animals and people until a

decision on next steps has been made. In these circumstances, where an animal is suspected of having rabies, a VI can serve a notice on the occupier of the premises declaring that the premises are infected premises under the RCO. However, it is not the intention to control endemic bat lyssaviruses in UK, only exotic viruses.

In this instance, the rules under RCO will also apply regarding detention and isolation of the animal. Although a definitive diagnosis of rabies in bats cannot be made on clinical grounds alone, if the VI considers that the bat might be showing signs that could be consistent with the disease, on the basis of the information obtained and in discussion with a DVO as necessary, it must be treated as a suspect case. The VI must visit, arrange for the bat to be euthanased, establish all possible contacts (human and animal) and consider restrictions on the premises. During the veterinary inquiry, the investigating VI consults a DVO by phone to agree on the outcome of the investigation.

Where a bat has been euthanased due to the suspicion of rabies, the VI must submit the bat to AFBI for testing.

11. Treatment/disease risk mitigation in humans

The risk to humans from bat lyssaviruses is considered to be very low, given the occasional contact between the public and bats, the effectiveness of the protective combination of pre and post-exposure treatment, and that those people most likely to handle bats are vaccinated against rabies. Nevertheless, government takes a precautionary approach to possible contact with bats by bat workers and others who are more likely to handle bats as well as any incident where a member of the public has come into contact with a bat. PHA is responsible for protecting public health in NI and provides advice on pre and post exposure treatment for rabies.

It is therefore essential that any person who may have been bitten or scratched by a bat seeks prompt medical attention through contacting their GP or calling the NHS non-emergency number 111. Once clinical signs in humans have begun, the disease is invariably fatal so rapid intervention after the incident is vital. Immediate cleansing of the wound with soap and water followed by an alcohol based or other disinfectant could lower the risk of rabies developing. Based on the risk assessment carried out by a health care professional, this may be combined with prompt post-exposure vaccination and administration of rabies immunoglobulin if necessary. Post-exposure treatment needs to be administered in a very specific manner in order to be effective. Recommendations for the use of rabies vaccine and immunoglobulin can be found in the PHE Green Book (Immunisation against infectious disease).

12. Euthanasia of bats

Consideration must be given to conservation issues when dealing with bats. However, as explained earlier, powers are available to euthanase bats, if required, for protecting human health

as well as animal health and welfare. Suspicion of rabies in any animal species must be reported to DAERA without delay. The report will trigger an investigation by a VI overseen by a DVO. If the suspicion of rabies cannot be ruled out then the bat must be euthanased and submitted to AFBI for testing.

If rabies is ruled out on clinical grounds after inspection, a native species can be rehabilitated by a bat carer and released into the wild if deemed appropriate. A licence for temporary possession of the animal would not be required as the habitats legislation's 'tending' defence would apply. If the bat is a non-native species then the 'illegal landing' process would continue to be followed.

Euthanasia of non-suspect bats should only be undertaken on welfare grounds, for example, if the bat is badly injured. The VI would make this decision with consideration to the habitats legislation in consultation with NIEA and in line with their responsibilities for the welfare of animals under their Royal College of Veterinary Surgeons' Guide to Professional Conduct.

13. Follow-up surveillance

Expert advice would be sought in designing and implementing any surveillance activities. Follow up surveillance may be recommended for example where there is evidence of an exotic lyssavirus in bats; where there is evidence of a new bat species involved or if there is likelihood of human interaction. This policy, and the reference to an incident that needs to be controlled, acknowledges the current stable and low levels of EBLV-1 and EBLV-2 in UK bats and that this situation does not constitute a scenario that would require any control measures. To escalate to such a level would require a decision by DAERA policy officials supported by the National Experts Group.

14. International disease reporting obligations

The UK's 'rabies free' status under WOAH is not affected by the identification of bat lyssaviruses so there are no mandatory international reporting requirements if this virus is detected. The UK does, however, routinely notify the OIE when such cases are confirmed, and there is a national statutory requirement to report suspect cases of rabies.

The UK will also report rabies data to the World Health Organisation Rabies Bulletin.

Appendix 2 - Rabies in Humans

Clinical signs in Humans

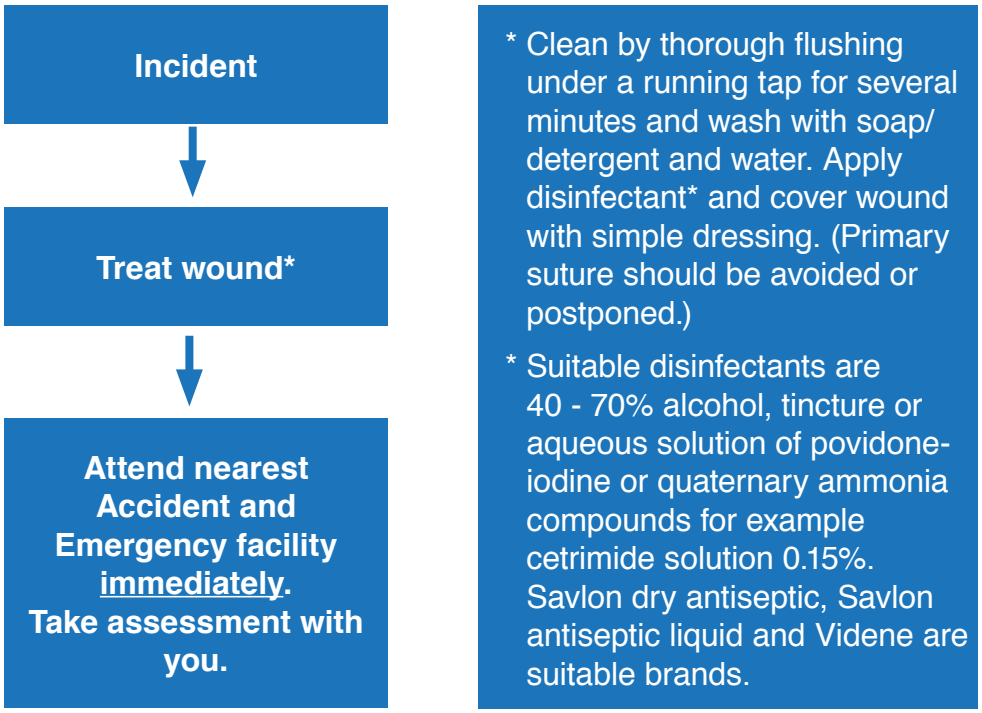
A1.1 The first symptoms are likely to be non-specific; headaches, muscular pains, nausea or coughing. The more suggestive early sign of impending rabies is numbness and/or tingling and twitching at the site of the original bite. This is likely to be followed by a phase of agitation and confusion, followed by coma, respiratory failure and death.

Treatment/Disease Risk Mitigation in Humans

A1.2 Once symptoms have begun the disease is invariably fatal so rapid intervention after a biting incident or other exposure to rabies is vital. Prompt post-exposure vaccination and administration of rabies immunoglobulin, together with immediate and appropriate wound cleansing can prevent the risk of rabies developing. Post exposure vaccine needs to be very specifically administered in order to be effective. For further details see www.gov.uk/government/collections/rabies-risk-assessment-post-exposure-treatment-management#human-rabies-managing-a-suspected-or-confirmed-case.

Initial Response to a bite: The rabies virus is rapidly inactivated by heat, liquid solvents and disinfectants, including warm soapy water and basic detergents. Swift and thorough cleansing of the entire site with these is an effective first measure to reduce the risk of infection.

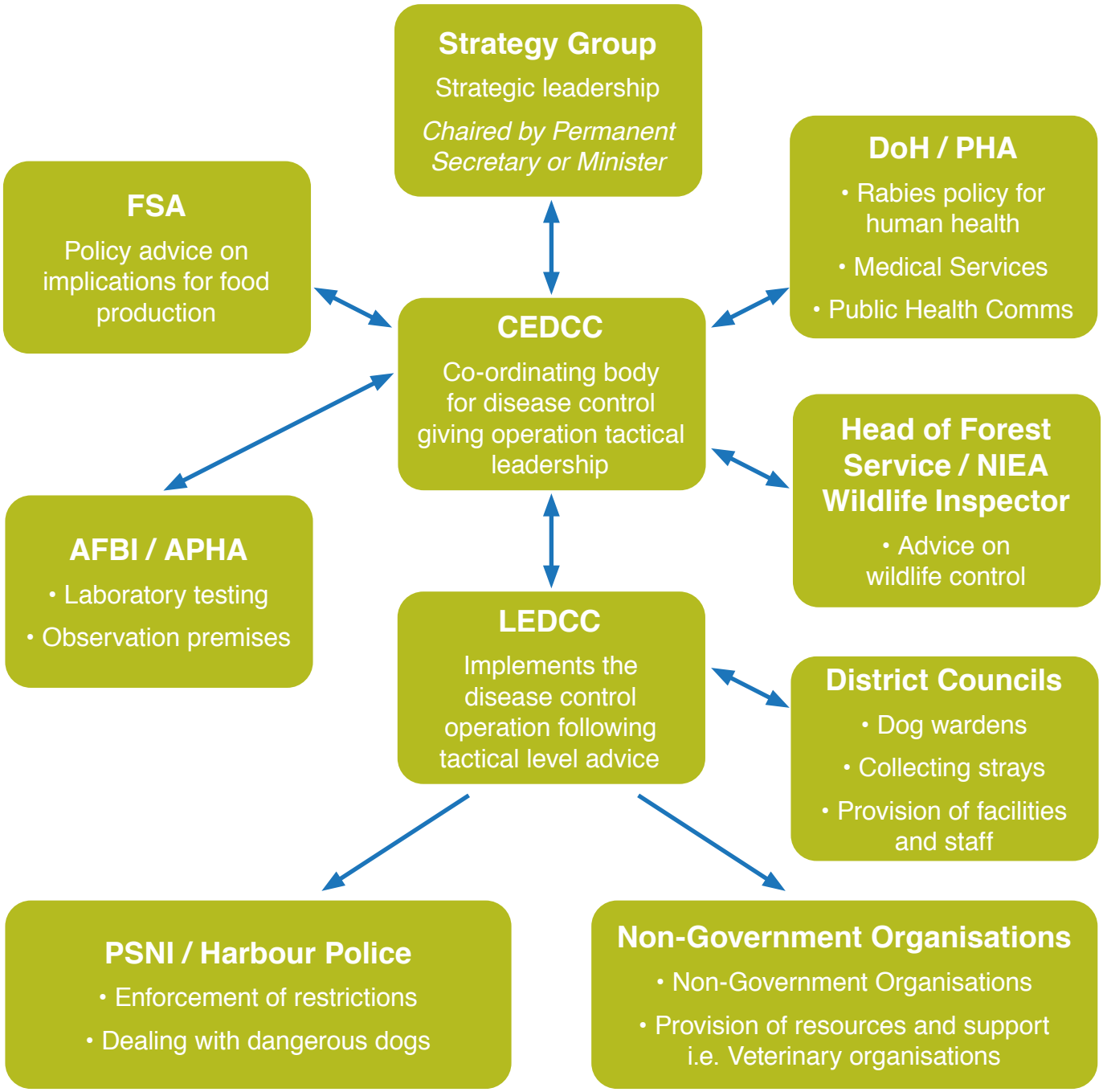
If anyone has been bitten/injured by the suspect animal they should follow the procedure in the flow chart below.



The HQ Epizootic DVO will inform the Consultant in Communicable Disease Control (CCDC) in the relevant Health Board

A1.3 **Vaccination:** Modern rabies vaccines offer a safe and very high level of protection against classical rabies virus and other serotypes including DUVV, EBLV and ABLV when given pre-exposure. Vaccination immediately following exposure will also help to reduce the risk of rabies developing. Rabies immuglobulin is also given as a post exposure treatment to prevent development of the disease. There are vaccines available for human use in animal populations. The vaccines are considered both safe and effective.

Appendix 3: Key roles and responsibilities in the event of an outbreak



Appendix 4: Legislation for the control of rabies

Scope	European	Northern Ireland
Rabies - outbreak control.	Regulation (EU) 2016/429 Commission Delegated EU Regulation 2020/687 Commission Delegated EU Regulation 2020/689	Rabies (Control) Order (Northern Ireland) 1977
Measures to prevent import of disease.		Rabies (Importation of Dogs, Cats and Other Mammals) Order (Northern Ireland) 1977 (as amended)
Animal Import Controls.		Trade in Animals and Related Products Regulations (Northern Ireland) 2011
Removal of quarantine requirements if conditions met.		Non-commercial Movement of Pet Animals Order (NI) 2011
Measures to slaughter other animals and for compensation.		The Diseases of Animals (Northern Ireland) Order 1981
Measures to place movement restrictions to prevent spread of disease.		Movement of Animals (Restriction) Order (Northern Ireland) 2004
Measures to prohibit the importation, keeping or deliberate introduction into animals of rabies virus except under licence.		The Rabies Virus Order (Northern Ireland) 1979
Powers for licensing and seizure of stray dogs.		Dogs (Northern Ireland) Order 1983 as amended by the Dogs (Amendment) Act (Northern Ireland) 2011

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