Department
for Environment
Food & Rural Affairs

Rabies Webinar 2022

Additional Notes

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We are the Department for Environment, Food and Rural Affairs. We're responsible for improving and protecting the environment, growing the green economy, sustaining thriving rural communities and supporting our world-class food, farming and fishing industries.

We work closely with our 33 agencies and arm's length bodies on our ambition to make our air purer, our water cleaner, our land greener and our food more sustainable. Our mission is to restore and enhance the environment for the next generation, and to leave the environment in a better state than we found it.

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Background

The Rabies Webinar was organised by Defra and is hosted on APHA's YouTube channel. It covered updates about rabies from Defra's policy teams, Animal and Plant Health Agency (APHA) science, epidemiology and veterinary experts, UK Health Security Agency (UKHSA) medical epidemiology experts, and Mission Rabies.

This webinar was aimed at veterinarians and provided an overview of rabies and its clinical signs, as well as the emergency situation with pets arriving from Ukraine. It provided information on how rabies is transmitted, how to report suspicion of rabies, what happens at the lab, and what control measures are in place. It also highlighted the public health aspects of the disease.

The information below summarises additional notes regarding rabies, the procedures to report suspicion and confirm disease, animal welfare, disease control measures and public health.

All information contained in this document is accurate at the time of publication. For further information see the Rabies: how to spot and report the disease in animals, Rabies in bats: how to spot it and report it, Bringing your pet to the UK from Ukraine, Animal disease control strategy: rabies and the Green Book pages on GOV.UK and UKHSA.

Additional Notes

Rabies threat level

How many cases of rabies have been confirmed in pets in Great Britain in the recent past?

Great Britain has been free from terrestrial rabies since the 1920's and the only cases in animals have been associated with travel and non-compliant imports.

Rabies was eradicated from all GB animals except bats in 1922. The last case in an imported animal outside of quarantine was in 1970. Since 1922, 29 cases of rabies have been reported within quarantine in the UK. The last rabid terrestrial animal in the UK was a puppy in quarantine which had been imported from Sri Lanka and found to be rabid in 2008. This was not considered to be an outbreak as the animal was being detained under quarantine – as per the normal entry requirements at the time.

What is the current risk level for rabies in Great Britain?

A quantitative risk assessment was conducted in 2011 to allow us to align with EU Pet travel rules, and this concluded the risk level was "very low". As pet imports increased when Romania and Bulgaria were allowed free movement, the risk increased again, but

remained “very low to low”. As rabies eradication continues in the EU and neighboring countries, the risk continues to decrease.

Suspicion and Confirmation of Rabies

What clinical signs should I look out for?

Clinical signs in animals can vary considerably. The first signs of rabies are generally non-specific during the initial stage where behavioural changes are recorded.

During this stage, the animal is generally abnormally alert, restless, hyperactive and hypersensitive to noise and light, with increased tendency for dogs to lick their owners. Animals may have fever and dilatation of pupils as well as excessive salivation. This phase lasts generally two to five days. In some cases, however, an animal may die rapidly without demonstrating overt or unusual clinical signs. In the acute period, which usually ends after 2 to 10 days, signs of hyperactivity (furious form) or paralysis (dumb rabies, which is more common) are recognised. Due to paralysis of laryngeal and pharyngeal muscles, characteristic changes in the bark or howling are observed and the animal has difficulty in swallowing, leading to drooling. Within a few days, the disease usually progresses to muscular incoordination, paralysis, coma, and death.

Animals often exhibit one of the two following forms of rabies:

Furious rabies

Animals may be anxious and/or aggressive, losing their natural fear of other animals and humans. They may demonstrate sudden behaviour changes and attack without provocation. Muscular weakness and seizures are common. Death results from progressive paralysis.

Dumb/Paralytic Rabies

Animals may be depressed or unusually docile, sometimes paralysed in the face, throat and neck, causing abnormal facial expressions, drooling and inability to swallow. The paralysis progresses rapidly to the whole body with subsequent coma and death.

What guidance is there for veterinary professionals?

A webinar with guidance for vets was issued in June 2022. This webinar outlines the clinical signs that veterinary professionals should look out for and the steps that they must follow to report suspected cases of the notifiable disease. Report suspicion as below.

How do I report suspicion of disease?

If you suspect a notifiable animal disease you must report it immediately to APHA by calling the Defra Rural Services Helpline on 03000 200 301. In Wales, contact 0300 303 8268. In Scotland, contact your local Field Services Office. Failure to do so is an offence.

A range of personal protective equipment (PPE) and restraining equipment was shown in the webinar video. Does APHA have access to restraining equipment beyond what is shown?

APHA has access to a range of equipment to facilitate approaching / handling animals. If the animal is very aggressive and unable to be safely approached, we may also seek support from Operational Partners such as the Police.

Is there a protocol for safely getting a dog into restrictive equipment, such as a metal cage?

APHA has working instructions to deal with all report cases including rabies. It also has risk assessments from our Health, Safety and Wellbeing advisors to ensure staff safety in these scenarios.

It might be necessary to restrain an animal to examine it. Might this include chemical restraint / sedation?

Yes, sedation may need to be administered by a veterinary surgeon to safely examine the animal.

If disease cannot be ruled out and there is a strong suspicion of rabies, the pet would need to be euthanised and samples submitted for laboratory testing. Would APHA vets perform the euthanasia?

Yes, as a general rule APHA vets would perform the euthanasia. However, we may need to consult with private veterinary surgeons or our Operational Partners on a case-by-case basis.

Who is responsible for informing the relevant public health agency when there is suspicion of rabies?

APHA - Veterinary Exotic Notifiable Disease Unit (VENDU team) would contact the relevant public health agency to inform them of the suspect report case.

How do you confirm / diagnose rabies?

The presence of rabies can only be confirmed through laboratory testing of the suspect animal’s brain tissue. After examining the animal, if disease cannot be ruled out and there is a strong suspicion of rabies, the animal will be euthanised and samples submitted for testing. Testing is conducted by APHA experts at our national reference laboratory, where several tests are carried out to confirm the results and characterise the virus.

A Chief Veterinary Officer (CVO) from the relevant UK administration will confirm a case of rabies if a UKAS (the National Accreditation Body for the United Kingdom) validated test undertaken at the UK National Reference Laboratory for rabies has demonstrated the

presence of the disease. For more information on how we control disease in GB, please see Animal disease control strategy: rabies - GOV.UK (www.gov.uk)

During the current emergency response, the ELISA test is being used to check the vaccination status of pets coming into the UK from Ukraine. Would you expect to see different levels of antibodies between a vaccinated dog and an infected dog?

Rabies serological tests, including the Fluorescent Antibody Virus Neutralisation (FAVN) or Enzyme-Linked Immunosorbent Assay (ELISA), cannot be used to differentiate between disease and vaccination. Disease induced rabies antibodies are only rarely detected and limited to the late clinical phase of disease. If the animal has been exposed to the virus, the antibody levels are dynamic and can fluctuate as the disease progresses. Similarly, antibody titres post vaccination vary considerably between individual animals and are dependent upon the sampling interval (neutralising antibodies usually decline rapidly after primary vaccination), host response, breed, age, previous vaccination history and other factors. To use an ELISA test to determine the vaccination status of an animal, the animal would need to be healthy, as rabies-specific antibodies in a healthy animal would be indicative of vaccination. This is why it is paramount that a vet check is carried out on an animal from a rabies endemic country and why owners should be aware of any behavioural changes which could be indicative of rabies.

Quarantine and Isolation

What is the procedure if a pet dies in quarantine or needs to be put to sleep for other reasons whilst in quarantine?

APHA has working instructions to handle such a situation, should this arise. In the majority of cases, the animal carcass will need to be sent to APHA Weybridge for testing to rule out suspicion of rabies.

If disease cannot be ruled out and there is a mild suspicion of rabies, the pet may be moved into isolation for monitoring. Are there measures in place to ensure its welfare in the isolation facility?

Yes, the animal remains under veterinary supervision whilst in isolation and the welfare of the animal will be regularly monitored.

Animal Welfare

Who is responsible for animal welfare?

The Animal Welfare Act 2006 makes owners and keepers responsible for ensuring that the welfare needs of their animals are met. We have published guidance on the welfare of

dogs and cats on .GOV.UK at: https://www.gov.uk/government/publications/code-of-practice-for-the-welfare-of-dogs and https://www.gov.uk/government/publications/code-of-practice-for-the-welfare-of-cats.

Do animals recover from the disease?

No. Rabies is invariably fatal as no treatment is available for animals once they start displaying signs of the disease.

Vaccination of animals

Is there a vaccine available for rabies?

Yes. Rabies vaccines for domestic animals are available via veterinary surgeons and there are no restrictions on pet owners who want to vaccinate their pets against rabies pre-emptively.

What type of vaccine is licenced for use in the UK?

In the UK, there are a number of injectable recombinant vectored or inactivated rabies vaccines licensed for use in dogs, cats, ferrets, goats, horses, cattle, pigs and sheep. There are also oral live modified rabies vaccines for use in wild animals such as foxes, wolves and raccoon dogs that may be used as part of wildlife control programmes.

How many animals in the UK have been vaccinated against rabies already?

As the UK is free of rabies, only pets that have travelled to the UK under the Pet Travel Scheme or have been issued with a pet passport in the UK will be expected to be routinely vaccinated against rabies. There are no vaccines available for domestic animals other than dogs, cats, ferrets, and livestock except under the veterinary cascade system.

Rabies Control Measures in Great Britain

Where can I find the Rabies Control Strategy for Great Britain?

This can be found here: Rabies control strategy for Great Britain.

What structures are in place to deal with this disease?

We have a strong track record of controlling and eliminating exotic disease outbreaks in the UK. Rabies is one of the most globally important zoonotic disease and managing the public health risk is paramount. Our immediate response is to take action to:

- Work closely with public health colleagues to manage any risk to people in contact with suspect animal cases.

- Seek early detection and reporting of suspicion of disease to limit the extent to which disease can spread.
- Contain disease at premises or within the area where it is detected and eradicate it swiftly and effectively.
- Limit the risk of any further spread of disease through vaccination of susceptible dogs and cats and any wildlife reservoir species if deemed necessary.
- Maintain restrictions and continue surveillance until there is confidence that the risk has diminished.
- Comply with legislative obligations, including disease reporting to both the World Organisation for Animal Health and the World Health Organisation.

Public Health

Are there any human health implications?

Yes. Rabies is a fatal condition, but it is preventable by vaccination. A bite, scratch, or mucous membrane exposure to the saliva of an infected animal could lead to infection. Post-exposure treatment is extremely effective at preventing rabies after being bitten when started promptly. Once clinical rabies develops, it is almost always fatal. If you have been exposed to a bat or a terrestrial animal you suspect to be infected with rabies then you should wash the affected area immediately and thoroughly with soap and water, a detergent, or water alone, and seek medical attention. Suturing of wounds should be avoided.

Following a prompt risk assessment, appropriate post-exposure treatment for rabies will be given to anybody who has had an exposure to an animal suspected of having rabies. Bats in the UK can carry bat rabies, therefore any contact with a bat in the UK should be risk assessed. Bat bites in the UK are often felt but not seen, and may not bleed or leave an obvious mark on the skin.

There may be occupational reasons for some groups of people who come into contact with the rabies virus or potentially rabid animals to be vaccinated against rabies. Anyone who has received a pre-exposure vaccination course and has a subsequent exposure to an infected animal is advised to seek medical attention and have a risk assessment carried out, as post-exposure treatment will still be required.

Can rabies be spread from person to person?

Despite there being tens of thousands of rabies cases each year worldwide, there has never been a laboratory-documented case of human-to-human transmission of rabies, other than a very few cases resulting from organ or tissue transplant. Despite the lack of evidence for human-to-human transmission, people who are identified as contacts of a patient with rabies will sometimes be offered immunisation, purely as a precautionary measure.

Humans generally catch rabies through being bitten or scratched by an infected animal. Dogs are the cause of most rabies infections in people worldwide. However, all animals can catch rabies and pass it on, including cats, monkeys, and bats.

Who decides who gets post-exposure treatment and how quickly does this happens?

If you have had an exposure to an animal that may have rabies, you should seek prompt medical attention. A risk assessment will be carried out to determine what rabies post-exposure treatment you may require. Post-exposure treatment usually involves a course of four rabies vaccines, given over 21 days. For higher risk wounds, rabies immunoglobulin is also given – this is injected into and around the bite or scratch. For people with a weakened immune system, the post-exposure treatment needed may be slightly different.

Public health authorities, for example UK Health Security Agency in England, will support health professionals in obtaining the right post-exposure treatment and ensuring that you receive it according to the correct schedule through your GP surgery or local hospital.

Further information:

NHS Website: https://www.nhs.uk/conditions/rabies/

UKHSA Rabies epidemiology, transmission, and prevention: https://www.gov.uk/guidance/rabies-epidemiology-transmission-and-prevention

Rabies risks from bats leaflet: https://www.gov.uk/government/publications/rabies-risks-from-bat-bites

Rabies risks for travellers: https://www.gov.uk/government/publications/rabies-risks-for-travellers

UKHSA rabies post-exposure treatment guidelines: https://www.gov.uk/government/publications/rabies-post-exposure-prophylaxis-management-guidelines

The UKHSA Rabies and Immunoglobulin Service can be contacted by health professionals for specialist advice and support on completing the rabies risk assessment: https://www.gov.uk/government/publications/immunoglobulin-when-to-use/rabies-and-immunoglobulin-service-rigs