

Rabies Across the One Health Spectrum: Stronger together to Protect Animals, Livestock And Human Lives

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Introduction

A One Health perspective on a disease that affects animals, livelihoods and human health. Every year, 28 September is observed as World Rabies Day, providing an opportunity to increase awareness about one of the world's oldest and deadliest zoonotic diseases. The theme for World Rabies Day 2026 is “Stronger Together,” emphasising that rabies elimination requires cooperation among communities, veterinarians, healthcare professionals, governments and other stakeholders. When we hear the word *rabies*, most of us immediately think of a dog bite. This association is understandable because dogs remain the major source of human rabies transmission in many parts of the world. However, there is an important fact that is often overlooked: rabies is not exclusively a disease of dogs. Rabies is a viral disease affecting the central nervous system of mammals, including domestic animals, wildlife and humans. Once clinical signs appear, the disease is almost invariably fatal. This means that a rabid dog does not represent a risk only to people. It can also threaten cattle, buffaloes, goats, sheep, horses and other animals. For livestock owners, therefore, rabies is not merely a public-health issue, it can also become an animal-health, economic and occupational-health concern.



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One Health Rabies Guidelines

Rabies: More Than a Dog Disease

Rabies is caused by viruses of the *Lyssavirus* genus and primarily affects mammals. The virus is particularly present in the saliva and nervous tissue of infected animals and is most commonly transmitted through the bite of an infected animal. The disease has a particularly alarming feature: there is no reliable treatment once clinical disease develops. After the appearance of characteristic neurological signs, death generally follows. However, this does not mean that rabies is unavoidable. In fact, rabies is one of the major infectious diseases in which prevention can save both animal and human lives. Vaccination of dogs, responsible animal ownership, prevention of animal bites, appropriate management of suspected cases and timely medical care following exposure are central to rabies prevention. At the population level, vaccination of dogs is especially important because controlling rabies at its animal source can substantially reduce human cases.

Why Are Dogs So Important?

Dogs play a central role in the transmission of rabies to humans in many endemic regions. A free-roaming or unvaccinated dog can encounter other dogs, wildlife, livestock and people while moving between households and communities. A bite from an infected dog can introduce virus-containing saliva into tissues. If the exposed animal is not protected and the virus reaches the nervous system, clinical rabies may eventually develop. This is why mass dog vaccination remains one of the most effective strategies for controlling dog-mediated rabies. WOAHA notes that vaccinating at least 70% of dogs in at-risk areas can help drive human cases toward zero. But focusing only on dogs can sometimes make us overlook another part of the problem the animals living alongside them.

Can Livestock Get Rabies? Yes.

Cattle, buffaloes, sheep, goats, horses and other mammals can develop rabies after exposure to an infected animal. Rabies is therefore relevant not only to pet owners but also to farmers, livestock keepers, animal handlers and veterinarians. Livestock may be exposed when they are bitten by rabid dogs or other infected mammals. In rural and peri-urban areas, close interaction between free-roaming dogs and livestock can provide opportunities for transmission. The consequences can be serious. For a farmer, the death of a valuable dairy animal or breeding animal means financial loss. At the same time, people caring for the animal may themselves be exposed to saliva or nervous tissue while attempting to examine, restrain or treat an animal showing unusual neurological behaviour. Thus, a single suspected rabies case can involve animal health, human health and economic consequences simultaneously.



Rabies in Cattle and Buffaloes

Cattle and buffaloes are particularly important from a livestock perspective because of their economic and agricultural value. In these animals, rabies may initially appear as a sudden change in temperament or behaviour, including restlessness, unusual vocalisation, altered feeding habits and abnormal responses to the surroundings, making early recognition difficult because such signs can resemble other neurological or behavioural disorders. As the infection progresses, neurological dysfunction becomes more evident with manifestations such as aggression, excessive salivation, difficulty in swallowing, incoordination, weakness, progressive paralysis and respiratory distress. The clinical pattern may vary considerably between animals with some showing predominantly behavioural changes and others developing a paralytic form. Therefore, rabies should be considered whenever a livestock animal develops an acute, unexplained neurological illness, particularly when there is a history of a bite or possible contact with a suspected rabid animal. Nevertheless, clinical signs alone are not sufficient for diagnosis, as toxicities, metabolic disturbances, other neurological diseases and infectious conditions can produce similar presentations. A careful exposure history, timely veterinary assessment and appropriate diagnostic and public-health measures are therefore essential.

What About Goats and Sheep?

Goats and sheep are also susceptible to rabies and may be exposed when grazing or housed in areas frequented by free-roaming dogs or wildlife. Bites may sometimes go unnoticed, particularly during grazing. Infected animals may develop changes in behaviour, altered movement, excessive salivation, difficulty swallowing, incoordination, weakness and progressive neurological dysfunction. Therefore, sudden and unusual behavioural or neurological changes in small ruminants should be taken seriously, especially when there is a possibility of contact with a potentially rabid animal.

The Hidden Risk: When Livestock Become the Point of Human Exposure

Livestock rabies is also important because it can bring the infection closer to people who handle or treat animals. A farmer, animal handler or veterinarian may attempt to examine the mouth, administer oral medication or restrain an animal showing abnormal behaviour. If the animal is infected, such close contact with saliva can create a potential exposure risk. Suspected cases should therefore be approached with appropriate precautions rather than routine handling. Anyone bitten or exposed to saliva through broken skin or mucous membranes should seek prompt medical evaluation, as timely post-exposure prophylaxis can prevent the development of rabies.



Recognising the Warning Signs

One of the earliest clues to rabies may be a striking change in an animal's normal nature and behaviour- a normally wary or aggressive animal may become unusually quiet and approachable, while a docile animal may suddenly become restless, aggressive or fearful. Rabies may begin with nonspecific changes such as restlessness, lethargy, fever, anorexia or altered behaviour before progressing to more characteristic neurological signs. Depending on the animal, these may include abnormal vocalisation, excessive salivation, difficulty swallowing, incoordination, tremors, weakness and progressive paralysis. Since these signs can occur in several other diseases, they are not diagnostic on their own; however, a sudden and unexplained change in behaviour, particularly with a history of possible exposure, should raise immediate suspicion.

What Should a Livestock Owner Do?

If rabies is suspected, safety should come before treatment. Unnecessary handling, manual examination of the mouth or forced administration of oral medication should be avoided and children and other people should be kept away from the animal. Contact with saliva should be prevented and the animal should not be restrained or killed without professional guidance. The case should be reported promptly to a veterinarian or appropriate veterinary authority, while any person who has been bitten or otherwise exposed should seek medical attention without delay. Management should follow the recommendations of the responsible veterinary and public-health authorities.

The Veterinarian's Role: More Than Diagnosis

Veterinarians are at the frontline of rabies prevention because they work at the animal–human interface. They may be the first to recognise a suspicious case, assess possible exposure and guide owners on safe handling and reporting. Their role also includes protecting veterinary personnel, promoting responsible animal ownership and educating communities about the risks associated with rabies in both companion animals and livestock. Clear advice at the right time can prevent unnecessary exposure and encourage timely medical care.

Vaccination: The First Line of Defence

Vaccination remains the cornerstone of dog-mediated rabies prevention. Regular vaccination of dogs, supported by organised vaccination programmes, reduces transmission and protects communities. Owners should maintain up-to-date vaccination records, prevent uncontrolled roaming and seek veterinary advice after suspected exposure. Where vaccination is recommended for livestock in specific situations, it should be carried out according to veterinary and public-health guidance. Effective vaccination is not only an individual



responsibility; **high coverage provides population-level protection** and reduces opportunities for the virus to spread.

Rabies and the One Health Connection

Rabies clearly demonstrates why One Health is essential. Infection can move between animals and people, while its prevention requires cooperation among veterinarians, medical professionals, farmers, animal owners, communities and authorities. Surveillance, vaccination, safe animal handling, public awareness and timely medical care must therefore work together rather than as separate efforts. This makes the 2026 World Rabies Day theme, “Stronger Together,” especially relevant: protecting animal health is an important part of protecting human health.

From the Village to the Veterinary Clinic

Consider a calf bitten by a free-roaming dog. If the bite goes unnoticed and the calf later develops abnormal behaviour, several people may unknowingly approach, restrain or medicate the animal. In contrast, recognising the earlier exposure, avoiding unnecessary handling and seeking veterinary advice can greatly reduce the risk to both the animal and the people around it. The difference is awareness and timely action.

Five Messages Every Livestock Owner Should Remember

1. Rabies is not only a dog disease. Cattle, buffaloes, goats, sheep and other mammals can also be affected.
2. Unusual behaviour deserves attention. Sudden behavioural or neurological changes, especially after possible exposure, require veterinary assessment.
3. Avoid unnecessary handling. Do not examine the mouth, give oral medication or restrain a suspected animal without professional guidance.
4. Vaccination protects communities. Keeping dogs appropriately vaccinated is one of the most effective ways to prevent dog-mediated rabies.
5. Exposure requires prompt medical attention. Anyone bitten or exposed to saliva from a suspected rabid animal should seek medical advice immediately.

Stronger Together: A Shared Responsibility

Rabies remains a serious zoonotic disease, yet it is preventable. Its control cannot depend on one species, profession or sector alone. Dogs need vaccination, livestock owners need awareness, veterinarians need to recognise and safely manage suspected cases and healthcare systems must provide timely care following exposure.



The goal is not simply to respond after a bite occurs, but to break the chain of transmission before it reaches another animal or person. On World Rabies Day, the message is simple: rabies goes beyond dogs and so must our approach to preventing it.

Key Take-Home Message:

Vaccinate. Prevent bites. Recognise warning signs. Avoid unsafe handling. Report suspected cases. Seek medical care promptly after exposure. Protecting animals is also protecting people.

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