

Namibia utilises One Health for rabies control including oral rabies vaccines for dogs

20 September 2022

Interview with Rauna Athingo (Namibia)

The northern part of Namibia in particular has been identified as a rabies hotspot, and many rabies cases, both in humans and animals (dogs and livestock especially), have occurred there in the last years.



© Dr. Rauna Athingo

In 2006, Dr Rauna Athingo started working as a state veterinarian, responsible for disease control in the Oshana region – one of the regions in the north of the country where rabies is inflicting a particularly heavy burden. She was able to observe how vulnerable children were being exposed to rabid dogs and puppies in particular. At that time, she remembers, the Directorate of Veterinary Services did not have a strategy on how to handle rabies cases, and this made their work very difficult. Dr Athingo was part of a driving force in developing Namibia's National Rabies Control Strategy, which provides guidance to all veterinarians and public health professionals in how to deal with rabies cases.

“My vision is of a Namibia free from dog-mediated rabies, saving human lives and saving the livelihoods of farmers who also suffer as a result of mass livestock losses due to rabies.” – Dr Rauna Athingo, Chief Veterinarian for Animal Disease Control in the Directorate of Veterinary services, Namibia.

Rabies is a prime example of a disease at the animal-human-environment interface: cases in dogs, humans and livestock are directly correlated. To make elimination of rabies possible, therefore, different sectors have to collaborate and work together.



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In 2015, to do just that, and in an attempt to address the increasing number of rabies cases, Namibia started to implement a One Health approach. The relevant authorities identified the need for collaboration between sectors and completely changed their approach to rabies control, by improving coordination and collaboration as well as communication at the human-animal-environment interface. Representatives from various sectors, such as human and animal health, education, environment and academia, took part in the formulation of Namibia's strategy. Many activities were implemented under the One Health approach, both nationally and also in cooperation with neighbouring countries like Angola.

Commitments from both the private and public sectors enabled Namibia to work towards the global goal of zero dog-mediated rabies cases by 2030, increasing awareness among communities and improving accessibility to post-exposure prophylaxis, especially in children and poor communities, given that rabies has devastating impacts not only on health but also on livelihoods. The financial burdens for bite victims, for example, include direct travel costs, as a number of trips to a healthcare facility are needed to complete the post-exposure prophylaxis schedule, and also the loss of income that can result from exposure. As well as this, rabies exposure can inflict a heavy psychological burden on families, and dogs too can be associated with this traumatic experience, resulting in long-term fear for humans.

Considering these economic, social and individual implications, controlling rabies at its source (i.e. the dogs themselves) is cheaper than providing postexposure prophylaxis. It also helps to empower communities – if community members understand the dangers of rabies, and ways to control it, they can contribute themselves to saving lives.

Dr Athingo's message is clear: "*Kick out rabies from Namibia – vaccinate your pet*".



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Friedrich-Loeffler-Institute (FLI) – Using oral rabies vaccines (value and use)

For more than five years now, the Friedrich-Loeffler-Institute (FLI) has been supporting Namibia's efforts to control rabies in various areas. Besides carrying out assessments, epidemiological analyses, and building capacity at the laboratory side, vaccination has been a particular focus.

Currently, rabies elimination efforts rely on mass dog vaccination by the parenteral route, which means injecting a dose of rabies vaccine under the skin. Vaccination campaigns usually rely on owners bringing their dog to vaccination points. However, free-roaming and stray dogs are sometimes hard to catch and this means that vaccination targets, to control rabies in the dog population, may not be reached.

To increase herd immunity, these free-roaming and stray dogs need to be specifically targeted by vaccination campaigns, and oral rabies vaccination (ORV) of dogs is one possible solution in such cases.



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“With safe, efficacious and well accepted oral vaccine baits available, ORV has the potential to become a game changer in situations where parenteral vaccination alone cannot stop transmission within the dog population.” - Dr Conrad Freuling, Friedrich-Loeffler-Institute

Before using the vaccine in a larger field trial, colleagues from the FLI, in conjunction with the University of Namibia, tested the immune responses triggered by oral vaccine baits in local Thai and Namibian dog populations ^{1,2}.

During a field trial in communal areas of northern Namibia, both veterinary staff and dog owners expressed their appreciation for this particular approach to vaccination. When it comes to oral vaccination, however, bait acceptance has to be considered. Dogs will only go for “tasty” baits. Fortunately for the trial, a great many dogs that were offered bait were interested. They ingested them and were then considered as being vaccinated ³.

ORV can complement current parenteral vaccination strategies and go a long way in making up for the lack of access to crucial parts of the dog populations that rabies elimination programs have to contend with.

Dr Thomas Müller of the Friedrich-Loeffler-Institute said, “*The partnership with our Namibian colleagues has been and continues to be very fruitful. We are confident that the promising results from our field assessments of ORV will pave the way for other countries in Africa and elsewhere to integrate ORV into their rabies control programmes.*”



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1. Humoral Immune Response of Thai Dogs after Oral Vaccination against Rabies with the SPBN GASGAS Vaccine Strain
2. Immunogenicity of the Oral Rabies Vaccine Strain SPBN GASGAS in Dogs Under Field Settings in Namibia
3. Oral rabies vaccination of dogs—Experiences from a field trial in Namibia