Training report

Rabies and dog bite management training for community health volunteers in Kathiani sub-county, Machakos, Kenya

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Introduction

Rabies kills 59,000 people globally and exerts an economic toll to the tune of USD 8.6 billion. Africa and Asia bear the greatest burden, where the disease is neglected and thus continues to ravage the poor and marginalized regions, especially children. Under the auspices of the Global Alliance for Rabies Control (GARC), the tripartite (the Food and Agriculture Organization of the United Nations (FAO), the World Health Organization (WHO) and the World Organisation for Animal Health (WOAH) developed a world strategy that outlines a road map towards achieving zero human deaths by 2030. In 2014, Kenya developed a national strategy focusing on four main planks (1) Mass dog vaccination, (2) provision of pre- and post-vaccine prophylaxis, (3) education and awareness and (4) increased surveillance.

The One Health Research, Education and Outreach Centre in Africa (OHRECA), led by the International Livestock Research Institute (ILRI) in partnership with VSF-Germany and the Machakos County Government, are currently vaccinating dogs in Machakos County as part of efforts to eradicate rabies. To complement these activities, with part funding from the Institute of Infection, Veterinary and Ecological Sciences (IVES), and the University of Liverpool pump priming funding, a one-day training was organized by OHRECA on 22 July 2022 for community health volunteers (CHV) at Kathiani sub-county in Machakos, Kenya. CHVs are frontline health workers working directly with the communities in the villages to provide basic prevention and care services. The training is aimed at raising awareness of rabies as a fatal disease, laying the foundation for enhanced surveillance reporting of suspected rabies dog cases, publicizing the ongoing mass dog vaccination, and ensuring increased uptake and adherence to post-exposure prophylaxis.

The training was delivered by both ministries of public health and veterinary services officials. At the start, a pre-training assessment was administered. The training brought together 30 CHVs who were trained on the public health importance of rabies, how it is transmitted, and the required protocol for surveillance and reporting. Practical aspects of handling a dog bite from a suspected rabies dog were demonstrated. The ongoing mass dog vaccination campaign was explained and their role in publishing the activities was explained. In the end, a post-training assessment was administered, and results were analysed using radar charts. The results indicated improved knowledge, especially on the first action to take when a dog bite is reported, and that rabies is invariably fatal once symptoms appear.

Training objectives

1. Raising awareness of the ongoing rabies vaccination campaign.
2. Enhancing knowledge of rabies among Community Health Volunteers (CHVs).
3. Enhancing rabies and dog bites surveillance.

Expected results

1. Increasing awareness of the rabies vaccination campaign.
2. Enhancing knowledge of rabies among CHVs.
3. Increasing reporting of dog and human bites and rabies cases.

Participants expectation

Enhancing knowledge on health matters, especially on rabies and on their role in surveillance and reporting.

Training highlights

The training is focused on CHVs, who were each issued with self-assessment pre-training evaluation questionnaires to test their knowledge of rabies and dog bites. The training started with an introduction to the disease—rabies and its epidemiology. Collaborating between the medical and veterinary departments was emphasized as a cornerstone of fighting the disease. The action required to be undertaken in cases of reported/suspected cases included cleaning the bite area with running water and soap for 15 minutes, immediate referral to the hospital for post-exposure vaccination, reporting the suspected cases to the veterinary offices and creating community awareness about suspected rabies/dog bite case. The roles of the veterinarian and the medical services departments were elaborated, and overlapping areas were discussed. Their roles in this setup were emphasized as responsibility to report cases of dog bites and suspected rabid dogs, mobilizing communities to present their dogs for mass dog vaccination and continuous community education on rabies.

Furthermore, the participants were tasked with playing a role in the current global push to eliminate dog mediated human rabies deaths by 2030. Different sources of information were suggested to ensure that rabies/bites surveillance is effective. These include reports from community sources and victims, active surveillance reports and rumours about a case.

The following were mentioned as steps to be taken to ensure rabies control and elimination by 2030.

Pre- and post-evaluation

To measure the impact of the training, we administered a questionnaire pre- and post-training. The questionnaire included demographic questions relating to the participants (age, sex, level of education, and years worked). However, no identifying information was collected, such as name. Instead, a unique code and demographic information were used to match the pre- and post-evaluation questionnaire.

The questionnaire assessed knowledge and practice related to rabies through 16 choice questions selected and adapted from GARC educational platform online test to obtain a rabies educator certificate.

Data were cleaned and analysed in R statistical software. Finally, we compared test performance pre- and post-training using radar charts.

Results

Demographics

There was a total of 30 participants. Of these, 23 were females, and 7 were male. The average age of the participants was 47.9 years. Of the participants, one had a diploma level of education, 21 had a high school level, while eight had primary level education. The average number of years worked was 7.3 years, a maximum of 14 years and a minimum of 2 years.

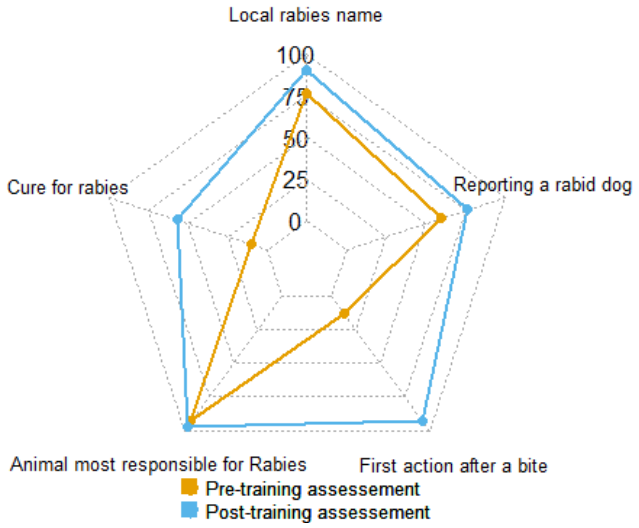
Knowledge

Radar one

The questions relating to this radar chart are as follows.

Question	Label on the radar chart
What is the local (Kamba name for rabies)	Local rabies name
Do you know if rabies has a cure	Cure for rabies
What animal is most responsible for causing rabies in humans	Animal most responsible for rabies
If an animal bites someone, what is the first thing you should advise them to do	First action after a bite
If a dog is reported to be aggressive and is biting other dogs, what is the best thing to do	Reporting a rabid dog

The greatest positive change of knowledge appears to have been action to be taken when a bite is reported and whether there exists a cure for rabies once symptoms are reported. In addition, 75% of participants knew the local rabies name, which increased to almost 100% post-assessment. Finally, the participants also knew the dog as the most responsible animal in transmitting rabies to humans at both pre- and post-assessment.

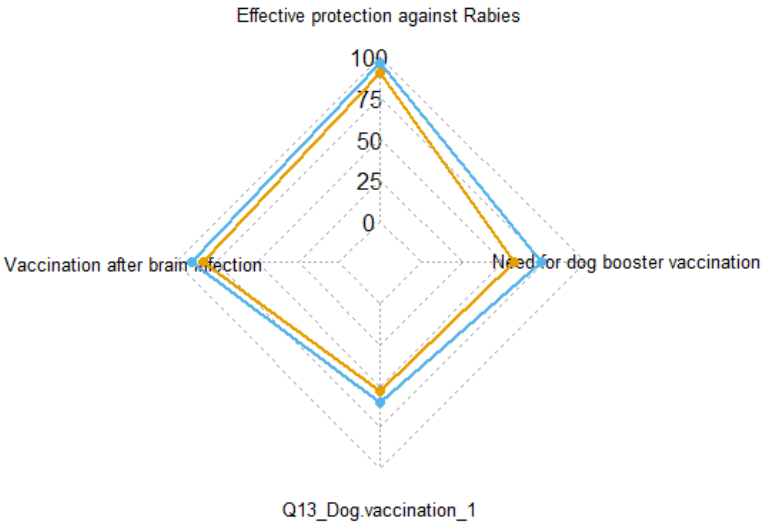


Radar two

The questions relating to this radar chart are as follows.

Question	Label on the radar chart
Once the rabies virus reaches the brain, it is too late to vaccinate against rabies	Vaccinate after brain infection
A dog should be vaccinated against rabies once in its lifetime	Need for dog booster vaccination
The most effective way to protect yourself and your family from rabies is by	Effective protection against rabies
True and false statement	Dog vaccination

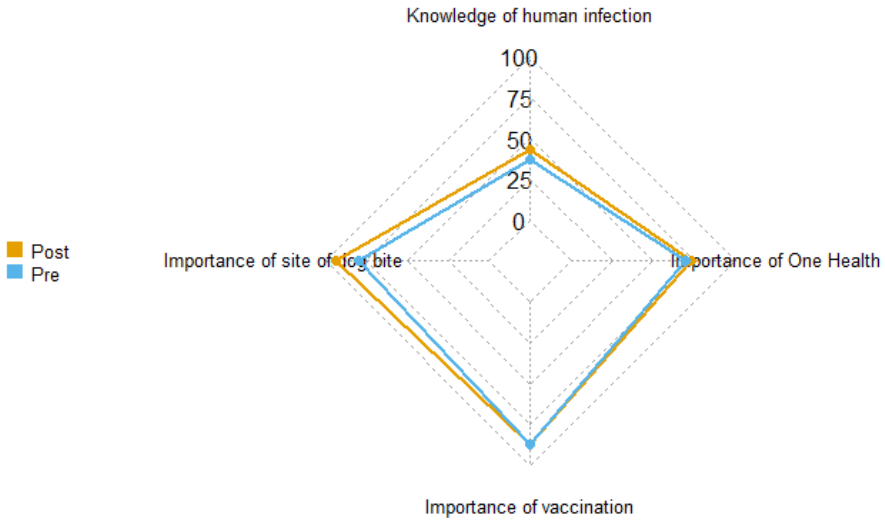
Among this question, there was a slight improvement in knowledge, with the biggest positive change being the knowledge that dogs require booster vaccination shots for optimum protection against rabies infection.



Radar three

The questions relating to this radar chart are as follows.

Question	Label on the radar chart
True or false statements	Knowledge of human infection
Rabies prevention primarily relies on animal and human health sectors working together	Importance of One Health
Rabies vaccine helps a person by preventing the virus from causing the disease	Importance of vaccination
The time it takes for rabies symptoms to appear is determined by?	Importance of site of dog bite



There was a slight improvement in knowledge pre- and post-assessment for all the questions.

Conclusion and way forward

Participants expressed satisfaction with having gone through the training and reported that the information would enhance their working practices, notably through increased reporting and follow-up of dog bite victims.

Furthermore, they will play a key role in community mobilization, especially through education and ensuring villagers avail their dogs during mass dog vaccination campaigns.

Annexes

Annex 1. Workshop program

Day 1		
Time	Activity	Facilitator(s)
0800–0830	Registration	ILRI and MCG
0830–0900	Pre-training evaluation	ILRI
0900–0920	Introduction and training expectation	Fredrick Mwendwa
0920–0930	Opening remarks	Judith Kimuyu and David Waweru
0930–1000	Introduction to Machakos County One Health	David Waweru
	Tea break 1000–1030	
1030–1100	Animal rabies surveillance in Kenya	Lilian Mutungi
1100–1200	Human rabies surveillance in Kenya and Machakos County	Cosmas Musyoki
1200–1300	Clinical management of human dog bites/patients	Judith Kimuyu
	Lunch break 1300–1400	
1400–1430	Roles of veterinarians and community health volunteers in rabies management	Judith Kimuyu
1430–1500	Action plan	Fredrick Mwendwa
	Post-training evaluation	ILRI
1500–1530	Wrap-up and photo session	ILRI

Annex 2. Participants list

Names	Title
Leah Mbatha	CHV, Machakos County
Peter Msila	CHV, Machakos County
Jossephine K. Mbuui	CHV, Machakos County
Rosalia M. Kingi	CHV, Machakos County
Moses Ndonyo Muema	CHV, Machakos County
Peter Munyao K.	CHV, Machakos County
Eonice Nzola Mutuku	CHV, Machakos County
Michaiel Nzau	CHV, Machakos County
Sarah Nduku Mutista	CHV, Machakos County
Alex K. Muasta	CHV, Machakos County
Janet Musyoki M.	CHV, Machakos County
Regina Mueni Kaloki	CHV, Machakos County
Pelista Mutisya	CHV, Machakos County
Damaris Zachariah	CHV, Machakos County
Jacinita Nduku Mule	CHV, Machakos County
Judy Mutuke Ndolo	CHV, Machakos County
Benedetia Mueni Masila	CHV, Machakos County
Jackline Waeni Mutuku	CHV, Machakos County
Ruth Mukulu Kiilu	CHV, Machakos County
Victoria Wanza Nzomo	CHV, Machakos County
Martin Mbengei Kioko	CHV, Machakos County
Beth Kilko Nguthi	CHV, Machakos County
John Muasya Muiiso	CHV, Machakos County
Beatrice M. Ndolo	CHV, Machakos County
Jane Munyiva Mutisya	CHV, Machakos County
Angelyn Mueni Hdeti	CHV, Machakos County
Mary Nthenya Wambua	CHV, Machakos County
Deborah Mwaluko	CHV, Machakos County
Joyce M. Kioko	CHV, Machakos County
Emily Jebet Wzioka	CHV, Machakos County
Dammaris K. Nzioka	CHV, Machakos County
Patriciah N. Muthui	CHV, Machakos County

The International Livestock Research Institute (ILRI) works to improve food and nutritional security and reduce poverty in developing countries through research for efficient, safe and sustainable use of livestock. Co-hosted by Kenya and Ethiopia, it has regional or country offices and projects in East, South and Southeast Asia as well as Central, East, Southern and West Africa. ilri.org

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