



New Tool Helps Countries Eliminate Dog-Mediated Rabies

By JoAnna Pendergrass, DVM

Rabies is a global health problem transmitted primarily by dogs that causes nearly 60,000 human deaths annually. In many Western and Asian countries, combining mass dog rabies vaccinations with collaborations between human and veterinary medicine has drastically reduced human exposure to rabies. These collaborations focus on educating people about responsible pet ownership, rabies awareness, and post-exposure prophylaxis.

The World Health Organization (WHO) and other related organizations came together in 2016 to set an ambitious goal of eliminating dog-

mediated rabies globally by 2030. Reaching this goal would require mass dog rabies vaccination (at least 70% of dog population), mass pre- and post-exposure prophylaxis administration, or both; such measures could be quite costly.

Rabies-endemic countries, particularly those only beginning to implement rabies control efforts, face several barriers to meet the WHO goal. Such barriers include logistical and operational challenges, competing disease priorities, lack of local epidemiological data, and limited availability of tools to determine the resources needed for rabies elimination.

To delve deeper into a country's ability to eliminate rabies, a research team comprised of members from the Centers for Disease Control and Prevention (CDC), Washington State University, and Kenya's Medical Research Institute and Ministry of Health identified 4 key factors affecting a country's ability to meet the WHO goal:

- Country development
- Demand for rabies vaccine
- Estimated number of vaccinators
- Cost of dog vaccination programs

The research team also calculated global estimates for resources required to eliminate rabies by 2030. However, the team realized that these estimates were not practical for country-level planning of mass dog rabies vaccinations. Thus, they developed a planning tool that countries can use to help meet the 2030 rabies elimination goal. The research team recently described the tool's details and usefulness in the CDC's [Emerging Infectious Diseases](#) journal.

Tool Details

The publicly-available tool is designed with the intent to eliminate rabies by 2030, giving countries a reasonable 13-year

framework to meet the goal. Each country would input the following country-specific data:

- Demographic information: human and dog populations, human-to-dog ratio
- Current percentage of rabies-vaccinated dogs
- Logistical information: number of available vaccinators, dog vaccination rates, campaign duration
- Estimated per-dog vaccination cost

The tool also includes a worksheet to help countries estimate the per-dog vaccination cost. Notably, this planning tool has already been used in Haiti and Guatemala.

To demonstrate the tool's usefulness, the research team used data from 2 mass dog rabies vaccination campaigns in western Kenya. Kenya is actively working toward the rabies elimination goal. Using the tool, the researchers determined that Kenya could meet the goal within 13 years at a cost of \$62 million and a per-dog vaccination cost of approximately \$1.80.

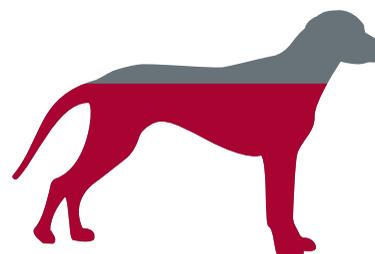
Researchers hope that developing this tool, "will help stimulate and inform a necessary discussion on strategic planning, resource mobilization, and continuous execution of rabies elimination."

Dr. JoAnna Pendergrass received her Doctor of Veterinary Medicine degree from the Virginia-Maryland College of Veterinary Medicine. Following veterinary school, she completed a postdoctoral fellowship at Emory University's Yerkes National Primate Research Center. Dr. Pendergrass is the founder and owner of JPen Communications, a medical communications company.



60,000

people die each year from rabies



70%

of dogs in an area need to receive rabies vaccinations for rabies to no longer be transmitted and create pack immunity.

99%

of rabies cases worldwide are in Africa and Asia

Original American Veterinarian article at Go.vetmed.wsu.edu/rabies/newtools

Read more rabies vaccination news at go.vetmed.wsu.edu/rabies/vaccination-news

Join our fight for their lives at www.RabiesFreeAfrica.org



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