

Rabies Control in Tanzania

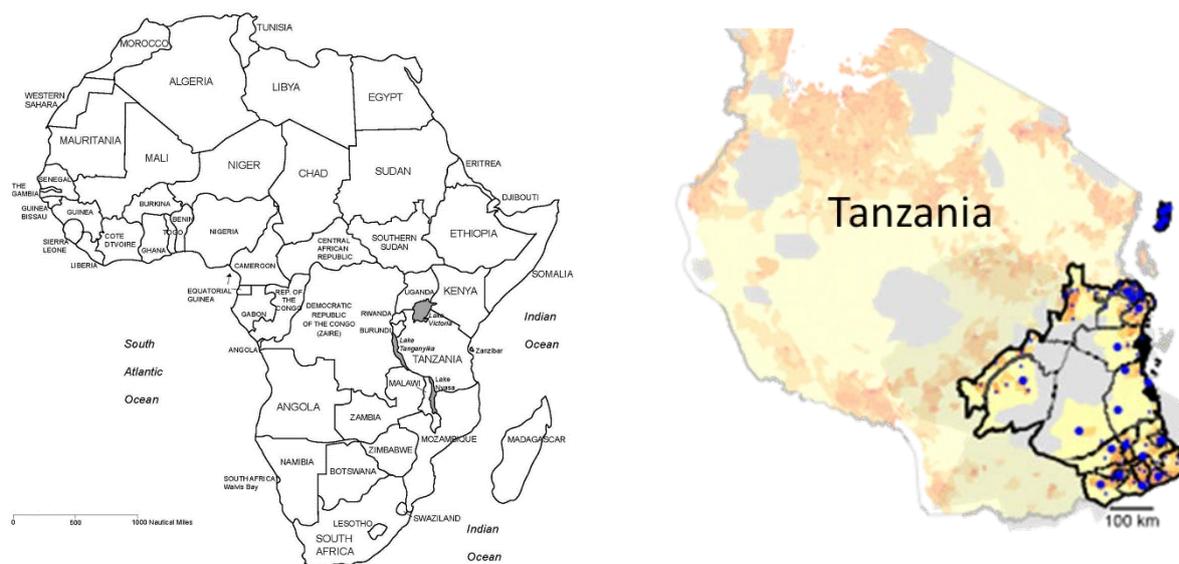
Rabies is responsible for an estimated 1,500 deaths per year in Tanzania¹. Poverty and access to health services present additional barriers to treatment, especially in rural areas. Following implementation of control activities, human rabies deaths reduced by approximately 75% in project areas. Tanzania is currently finalizing a national rabies control strategy, and aims to eliminate dog-mediated rabies countrywide by 2030.

Background

The rabies elimination demonstration project funded by the Bill & Melinda Gates Foundation (BMGF) was implemented in South-eastern Tanzania and Pemba Island from 2010 to 2016. This was the first large-scale rabies control programme to be implemented in Tanzania. Project sites covered 28 districts and a population of approximately 8.9 million people (Figure 1). The project aimed to:

- Improve delivery of post-exposure prophylaxis to exposed patients
- Control and eliminate rabies in domestic dogs, and therefore its transmission to humans
- Build a strategy to ensure sustainability after project completion

Figure 1: Africa and project sites in Tanzania



Unique Approach

(1) Data collection: mobile phone surveillance system.

Mobile phones were given to veterinarians and medical staff to assist in reporting of human bite cases, and human and canine rabies vaccine use. This enabled ease of recording, access and sharing of data between stakeholders.

(2) Human post-exposure prophylaxis: switching to intradermal vaccination.

Four health facilities in each district were identified as providing treatment for animal bite cases, with medical staff trained in bite management and the intradermal administration of human rabies

¹ Cleaveland, S., Fevre, E.M., Kaare, M. and Coleman, P.G., 2002. Estimating human rabies mortality in the United Republic of Tanzania from dog bite injuries. *Bulletin of the World Health Organization*, 80(4), pp.304-310.

vaccines. A major focus was the cost-saving transition from intramuscular to intradermal administration of human rabies vaccines.

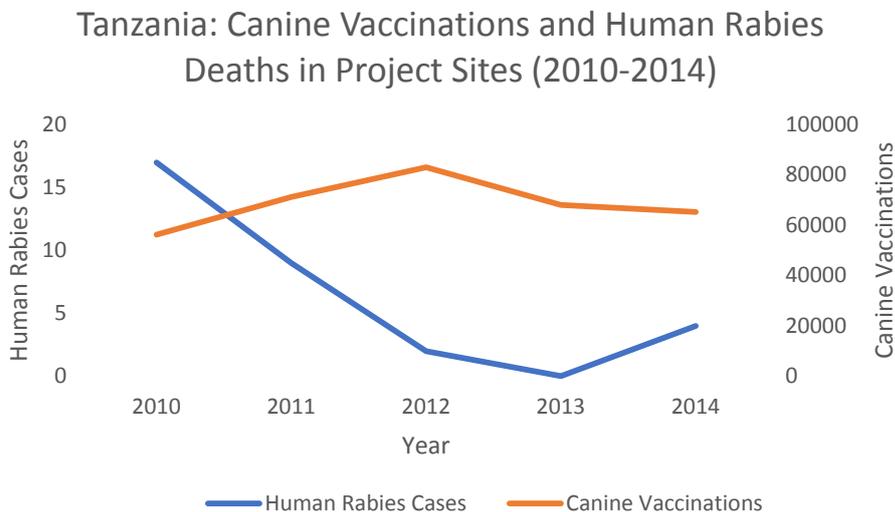
(3) Canine vaccination: aiming for 70% coverage of canine populations.

Numbers of canine vaccinations were reported using mobile phones, and vaccination coverage estimated based on transects, household and school surveys of dog populations. Vaccination campaigns were implemented annually and aimed to achieve 70% coverage of canine populations in villages throughout the project area, although this was hindered by logistical and administrative challenges.

Achievements

Animal bite cases (a proxy for rabies exposure) approximately halved across project sites, and human rabies deaths reduced by more than 75% following human and canine rabies interventions (Figure 2).

Figure 2: *Canine vaccination and human rabies deaths in project sites in Tanzania*



Key outcomes of the project were:

- Establishment of a mobile phone surveillance system, improving surveillance of human rabies cases and allowing contact tracing in regions where bite incidence approached zero.
- Canine vaccination campaigns conducted for the first time at scale, interrupting canine rabies transmission in Pemba Island and 24 other districts.
- Successful transition from intramuscular to intradermal administration of human rabies vaccines, reducing costs of human post-exposure prophylaxis.

What Next?

The success of this first major rabies control effort in Tanzania in reducing, and in some areas, eliminating, human rabies demonstrates that rabies control is feasible in this setting. Overall, rabies elimination was challenged by poor surveillance infrastructure and delays in canine vaccination campaigns². Maintaining consistent, annual canine vaccination is vital to sustaining progress towards rabies elimination. Using the experience and knowledge generated by the project, Tanzania is

².Mpolya EA, Lembo T, Lushasi K, Mancy R, Mbunda EM, Makungu S, et al. Toward Elimination of Dog-Mediated Human Rabies: Experiences from Implementing a Large-scale Demonstration Project in Southern Tanzania. *Frontiers in Veterinary Science*. 2017;4(21)

finalizing a national rabies control strategy, with the aim of eliminating dog-mediated human rabies countrywide by 2030.

².Mpolya EA, Lembo T, Lushasi K, Mancy R, Mbunda EM, Makungu S, et al. Toward Elimination of Dog-Mediated Human Rabies: Experiences from Implementing a Large-scale Demonstration Project in Southern Tanzania. *Frontiers in Veterinary Science*. 2017;4(21)