



# Harnessing Student Power to Combat Rabies in Tanzania

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Kisarawe district commissioner (in blue) receiving Rabies vaccines from FAO in 2021

Rabies remains a serious public health challenge in Tanzania, particularly in regions where dog-mediated transmission is common, vaccination rates are low, and resources are scarce. An estimated 522 human deaths are attributed to rabies annually, though this figure is likely underreported due to inadequate disease surveillance and reporting systems. Globally, 99% of human rabies cases are caused by dog bites, highlighting the critical importance of canine vaccination in controlling the disease. Evidence shows that achieving at least 70% vaccination coverage in dogs can effectively prevent rabies transmission.

Despite this, gaps in vaccination efforts persist, compounded by workforce shortages and limited capacity to reach underserved areas. In response, AFROHUN Tanzania has adopted an innovative Student Learning-and-Service Model to bridge these gaps while aligning with the global goal of eliminating rabies by 2030.

## The Student Learning-and-Service Model



Students from different disciplines showing up for rabies vaccination campaign

Since 2013, AFROHUN, in collaboration with the United States Agency for International Development (USAID), Food and Agriculture Organization (FAO), World Health Organization (WHO), Tanzanian Ministries of Health and Livestock, and local authorities, has implemented mass dog vaccination campaigns in high-risk districts like Kilosa, Kilimanjaro, and Kisarawe. Central to

this initiative is the strategic mobilization of university students from animal health, human health, and environmental health disciplines to participate in these campaigns.

This model leverages the untapped potential of students by offering practical opportunities to apply skills like pet vaccination and community engagement, which they learn during their academic programs but seldom use in real-life settings. To ensure academic schedules are not disrupted, AFROHUN organizes these activities during university vacations. Guided by experienced supervisors, students work alongside district teams to boost vaccination efforts and extend

services to underserved areas efficiently.

Participating students are highly motivated, supported by small stipends that cover their upkeep during community stays. These campaigns provide invaluable hands-on experience, enhancing the students' professional skills and deepening their understanding of their critical roles within the One Health approach.

This initiative not only addresses immediate vaccination needs but also strengthens the future workforce by equipping students with practical skills, fostering interprofessional collaboration, and preparing them to tackle similar public health challenges in their careers.

## Bridging Workforce Gaps and Strengthening Capacity



*Students, community members and leaders, and faculty supervisors pose for a group photo after a community engagement exercise.*

AFROHUN Tanzania's Student Learning-and-Service Model effectively addresses critical workforce shortages in districts where veterinary staff numbers are alarmingly low. In some areas, only 2–3 veterinary officers are responsible for vaccinating fewer than 600 pets annually, despite pet populations exceeding 12,000. This gap severely limits vaccination

coverage and the ability to control rabies.

By mobilizing approximately 30 veterinary students and 20 human health students during five-day campaigns, AFROHUN significantly enhances vaccination efforts. Veterinary students focus on vaccinating dogs, while human health students complement

these efforts by leading Risk Communication and Community Engagement (RCCE) activities. This dual approach ensures community participation by encouraging families to bring all their pets to vaccination centers, addressing a common issue where only one pet per household is presented, which hinders efforts to achieve herd immunity.

## Campaign Successes



Residents lining up with their pets for rabies vaccination in Kilimanjaro region.

Since its inception, the model has facilitated three highly successful rabies vaccination campaigns.

- Kilosa District (2013): Vaccinated 2,000 pets.
- Kilimanjaro Region (2017): Achieved a record-breaking 8,000 vaccinations.
- Kisarawe District (2021): Vaccinated 1,800 pets.

These campaigns, supported by collaborative efforts and local government authorities, highlight the effectiveness of partnerships between the human health and animal health sectors. The rapid scaling of vaccination coverage in underserved areas has significantly contributed to controlling rabies outbreaks and advancing Tanzania's rabies elimination efforts.

## Outcomes and Impact

- Enhanced Vaccination Coverage:** The campaigns delivered vaccination coverage far beyond the capacity of existing veterinary staff, with students playing a critical role in reaching remote and underserved areas. In Kilimanjaro alone, over 8,000 pets were vaccinated in under a week, marking one of Tanzania's most successful rabies vaccination efforts.
- Strengthened Community Engagement:** Human health students conducted **Risk Communication and Community Engagement (RCCE)** activities, educating families on the importance of vaccinating all pets. This helped address a common barrier where households only presented one pet for vaccination, undermining herd immunity goals.
- Student Empowerment and Skill Development:** Participating students gained hands-on experience in pet vaccination, community engagement, and One Health collaboration. These experiences strengthened their professional skills and fostered a sense of purpose in contributing to public health goals. Small stipends provided to students during their community stays boosted their motivation and commitment to the campaigns.
- Improved Workforce Capacity:** The initiative effectively bridged workforce gaps

in districts with limited veterinary staff, demonstrating how student mobilization can serve as a scalable solution for health systems.

#### 5. **Policy and Systems Strengthening:**

The campaigns contributed to improved Joint External Evaluation (JEE) scores in the Human Resources for Health (D3) technical area - a standardized assessment tool developed by the World Health Organization (WHO) to evaluate a country's capacity to prevent, detect, and respond to public health threats. The improved score reflects Tanzania's strengthened workforce capacity and system resilience.

## Looking Ahead: Scaling the Impact

AFROHUN Tanzania's model has not only achieved significant success in rabies control but has also inspired confidence in its scalability and replicability. By increasing the availability of rabies vaccines, conducting more frequent campaigns, and expanding student participation, Tanzania is well-positioned to meet its rabies elimination target by 2030.

This approach stands as a beacon of innovation in global health, showcasing how student engagement can address workforce shortages, advance public health goals, and foster intersectoral collaboration. It offers a blueprint for other regions grappling with similar health challenges, underscoring the power of leveraging human capital to create lasting health impacts.

### ABOUT AFROHUN

Africa One Health University Network (AFROHUN) is an international network, currently in 28 higher education institutions of public health, veterinary medicine, pathobiology, environmental sciences, medicine and global health, in 10 countries in Africa. The countries are *Cameroon, Côte d'Ivoire, Democratic Republic of the Congo, Ethiopia, Kenya, Liberia, Rwanda, Senegal, Tanzania and Uganda*. AROHUN is formerly OHCEA.

AFROHUN is working to transform the training environment and approaches in universities and allied institutions in Africa, to develop a One Health workforce: a workforce with no disciplinary boundaries. AFROHUN is building a workforce with competency to predict, detect and respond to the kind of complex health challenges we are witnessing today. To achieve this transformation, we are reviewing curricula, designing new and exciting experiential learning multidisciplinary training programs, re-tooling teachers and trainers, educating communities on existence and transmission of zoonotic and infectious diseases, while engaging national and sub-national governments to integrate One Health into national policy and strategic planning.

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