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International Society for Economics and Social Sciences of Animal Health

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Kuala Lumpur, Malaysia
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ABSTRACT BOOK
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Using Causal Loop Analysis to Explore Pathways for Improving Dog Rabies Vaccination in Burkina Faso

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Introduction

Dog vaccination is an effective pathway to control rabies if a minimum of 70% dog vaccination coverage is achieved. For more than six decades, dog vaccination has been adopted as part of rabies control measures in Burkina Faso. However, the required vaccination coverage in canine population remains challenging and rabies remains endemic. This study describes the use of systemic approaches to explore the dynamics underpinning dog vaccination complexity and explain the possible causes of low vaccination coverage in dog population.

Methodology

In-depth individual interviews were conducted including various stakeholders selected from animal health, human health, and wildlife sectors, as well as municipalities and communities. All interviews were audio-recorded, transcribed and thematic analysis was performed to extract variables and dynamic linkages. Extracted data were used to develop causal loop diagrams (CLDs) using the Vensim® software.

Results

The causal loop analysis showed 13 reinforcing loops and 4 balancing loops. The reinforcing loops pointed out the importance of community engagement, trust in vaccination, health belief, social pressure, workforce allocation, logistic provision, vaccine planning and management, national governance efforts, as well as synergy and partnerships in dog vaccination. As for the balancing loops, they exhibited vaccination dynamics associated with dog husbandry practices, rabies prevention practices, vaccination staff workload and owner frustration. The results revealed the importance of community awareness raising, empowerment of the vaccination workforce as well as enhanced governance and leadership in dog vaccination.

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Implications

Causal loop diagrams contributed to visualize the issue of dog rabies vaccination in a low-income setting. Going beyond a first impression of overwhelming complexity, this conceptualization represents a first step to identify a set of actionable solutions. The method may be applied to explore other critical rabies-related questions such as post-exposure prophylaxis, epidemiological surveillance, dog population management, laboratory diagnosis, and the One Health collaboration issues, to improving the disease control.

Keywords: Burkina Faso, Rabies control, Dog vaccination, Facilitators, Barriers, System dynamics, Causal loop analysis.