Accounts of Antimicrobial use Among Pastoralists, Veterinarians, and Drug-Sellers in Northern Tanzania: Implication for the Strengthening of Antimicrobial Resistance Awareness and Stewardship Campaigns

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Background: Awareness campaigns on prudent antimicrobial use have featured prominently in multisectoral strategies to address the global health security and economic threats posed by antimicrobial resistance (AMR) - when bacteria, viruses, fungi, and parasites survive treatment from antimicrobial drugs. However, several reasons challenge whether awareness campaigns founded upon understandings of the relationship between antimicrobial use and AMR in high-income countries (HIC) and within the public health sector would be as effective at limiting AMR in Low and middle-income countries (LMIC) and particularly in the agriculture sector where there is less emphasis.

Methods: To critically examine the effectiveness of awareness campaigns and to inform the contextualization of awareness campaigns in the veterinary sector in LMICs, and Tanzania in particular, we conducted a qualitative study using focus group discussions and key informant interviews to explore veterinary drug use practices among pastoralists, veterinarians, and drug-sellers, among Maasai pastoral communities in four wards in Arusha region.

Results: Thematic analysis of these accounts demonstrated that the perceived drivers of antimicrobial use and misuse differed across stakeholders' types, with narratives of livestock owners reflecting the impact of structural changes (for example, changes in veterinary services, effects of climate change). Pastoralists used antimicrobials as "experimentation" as "vaccine replacement," including employing them to address climate uncertainty. Those involved in livestock treatment focused their narratives on individual characteristics (such as lack of knowledge, poor attitudes, and reluctance to change pastoralists).

Conclusion: Theorizing the factors underlying these divergent accounts allowed the study to assess the potential effectiveness of current awareness strategies and suggest how these strategies can be improved to promote prudent use and limit AMR transmission within the veterinary sector, Tanzania, and public health sectors more generally.

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