



*antibiotics*



*Special Issue Reprint*

## Antimicrobial Resistance in Veterinary Science

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Edited by  
Nahla O. Eltai

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Antimicrobial resistance (AMR) is a complicated issue that threatens human and animal health and welfare, the economy, and security worldwide. The imprudent use of antibiotics in human clinical practice, veterinary medicine, and farmed animals is the leading source of the problem. There is mounting evidence that the non-judicious use of antibiotics for prophylactic and growth promotion purposes in animal agriculture significantly contributes to the development of AMR in animal-associated bacteria. The impact is immense; O'Neal's report eminently predicted severe mortality, morbidity, and catastrophic economic losses due to AMR across the globe by 2050. There is a consensus that AMR should be managed from a One Health perspective, incorporating comprehensive information about antibiotic usage in humans, animals, the food chain, and the environment. Animals and wildlife ecosystems are potential reservoirs for multidrug-resistant (MDR) microorganisms and antimicrobial-resistant genes (ARGs) that can be transmitted to humans through the food chain or direct contact. The presence of plasmid-encoded resistant genes escalates the risk of the rapid dissemination of ARGs. It is essential to include and utilize the information collected from animal pathogens in AMR surveillance programs as a part of the One Health framework, since human and animal health is interconnected. This can reduce the acceleration of AMR and offer more options for antimicrobials for treating human disease.



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