

Understanding the barriers and drivers found after the implementation of an antimicrobial stewardship program in large dairy farms in Ohio and California

R. Portillo-Gonzalez,¹ DVM, MBA; A. Garzon-Audor,² DVM, PhD; T-Y. Cheng,¹ DVM, PhD, DACVPM; D.J. Wilson,³ DVM, PhD; R.V. Pereira,² DVM, PhD, DACVPM; G. Habing,¹ DVM, PhD, DACVPM

¹Department of Veterinary Preventive Medicine, College of Veterinary Medicine, The Ohio State University, Columbus, OH 43210

²Department of Population Health and Reproduction, School of Veterinary Medicine, University of California, Davis, CA 95616

³Dr. Devon Wilson, Chilliwack BC, V4Z1H3 Canada

Introduction

Ensuring judicious antimicrobial use (AMU) is crucial in the fight against antimicrobial resistance. Farmworkers are responsible for initiating antimicrobial therapy; therefore, they have the responsibility to apply sound antimicrobial stewardship (AMS) practices. This study aimed to identify the barriers and drivers influencing on-farm antimicrobial treatment decisions and to understand farmworkers' impressions of the AMS educational material.

Materials and methods

This study was part of a quasi-experimental field trial but only the farms that received AMS training were used for this component of the study. Using a semi-structured questionnaire, 14 trained farmworkers (n = 14) were individually interviewed for approximately 35 minutes. The interviews were audio-recorded, translated (Spanish version), transcribed, and evaluated using thematic analysis.

Results

Preliminary results indicated that the most common barriers to receiving on-farm training were time constraints and lack of instructors. The most common barriers to using antimicrobials responsibly at the farm level were lack of information, protocol disagreements and ownership directions. Farmworkers indicated that they were driven by animal welfare, job success and financial factors (e.g., drug cost, wasted milk and withhold times) to use antimicrobials responsibly. Additionally, the qualitative analysis showed that after being trained, farmworkers

felt confident rendering treatment and identifying early signs of illness. Farmworkers stated that the educational materials were beneficial and valued each component (e.g., educational modules, summary tables and benchmark reports); however, it can be improved by shorter didactic sections and more hands-on activities. Farmworkers expressed discreet levels of AMU at the farm they work for and mentioned veterinarians and owners as the most common sources for consultation.

Significance

In conclusion, farmworkers seemed motivated by animal care, work achievement, and cost-saving to behave as antimicrobial stewards but felt challenged by knowledge gaps, and farm management. Finally, the information obtained through this research project could be used to minimize the barriers and enhance the drivers to improve antimicrobial stewardship on dairy farms.

