

Ensuring Antibiotic Effectiveness in Animals and Humans: A Public Health Study on South Carolina Dairy Farmers' Knowledge about Antibiotic Resistance

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Purpose: To determine South Carolina dairy farmers' information sources and knowledge about appropriate antibiotic use in dairy cattle.

Subjects: South Carolina dairy managers and farmers (n=20).

Data Collection & Methodology: Convenience sampling was used to identify twenty dairy farmers in rural counties of South Carolina with a high concentration of agricultural workers. Over a three-month period, investigators conducted structured in-person interviews on farmers' information sources, knowledge, and practices regarding antibiotic use in animals. The interview instrument included 30 multiple-choice and open-ended questions. Questions included in the interview instrument were based on a literature review and existing questionnaires on herd management.

Evaluation & Analysis: A mixed-methods research approach involved both quantitative (frequencies and percentages) and qualitative (thematic study) analysis. Results from this formative pilot assessment will assist with modification of the survey for statewide distribution

and with development of an educational program on antibiotic resistance for dairy farmers in South Carolina.

Results: Farmers typically determined a need for antibiotic treatment using symptom assessment (100%) and reported following some form of operating procedures regarding administration of antibiotics. Notably, few farmers (32%) had actual written antibiotic protocols available for their employees. Survey results showed extra-label usage of antibiotics by farmers (55%), which was mostly carried out with veterinary consultation (95%). Preferred information sources for proper antibiotic use for the majority of farmers were veterinarians (100%) and other dairy farmers (50%). Most farmers (86%) were not concerned that overuse of antibiotics in animals could result in antibiotic resistance among farm workers.

Conclusions: Education of South Carolina dairy farmers on the appropriate use of antibiotics in dairy cattle is needed to ensure antibiotic effectiveness in animals and humans. Veterinarians are a trusted source of information and could serve as a conduit for delivery of educational materials and antibiotic protocols to dairy farmers.

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