

VETERINARY CALL

by Bob Larson, Kansas State University

Stewardship of Antimicrobials

An additional way cattlemen can help protect their herds.

I think of stewardship as taking care of the things entrusted to me, so they retain or gain value into the future. Many aspects of stewardship directly apply to cattle production, including caring for the cattle, land, water and heritage entrusted to each rancher. As a veterinarian, I also consider antimicrobials to be resources provided by past generations for use today in a way that preserves their value to protect animal health and welfare into the future.

Antimicrobials are proven to be a valuable tool to prevent, control and treat diseases caused by bacteria, but bacteria have defense mechanisms to develop resistance. Because bacterial populations adjust to survive even when exposed to antibiotics, veterinarians and cattle producers who want to have effective disease treatment options in the future must practice stewardship of the antimicrobials available today.

The American Association of Bovine Practitioners (AABP) defines antimicrobial stewardship as the “commitment to reducing the need for antimicrobial drugs by preventing infectious disease in cattle, and when antimicrobial drugs are needed, to using antimicrobial drugs appropriately to optimize health outcomes and minimize selection for antimicrobial resistance as well as prevent violative residues.”

One aspect of antimicrobial stewardship is to develop and maintain good relationships between veterinarians who have knowledge and responsibilities to prescribe drugs appropriately, and cattle producers who have knowledge and responsibilities to care for their animals today and into the future.

The veterinary-client-patient relationship (VCPR) is an essential component of veterinary oversight of proper drug use in cattle. It includes a written agreement with the beef-producing client who identifies the veterinarian or veterinary practice who is accountable for drug use and treatments administered to cattle on the operation. This oversight should include establishing treatment protocols, training personnel who will administer drugs, reviewing treatment records, monitoring drug usage, assuring appropriate labeling of drugs used on the operation and any other interactions needed to ensure effective supervision of prescription drugs.

Veterinarians and producers can work together to steward antimicrobial resources using animal husbandry, sanitation, biosecurity, nutrition and vaccination programs to enhance herd health and minimize the need for antimicrobial treatments.

When a disease challenge occurs that can best be addressed by the

use of antimicrobials, it is the veterinarian’s responsibility to select the drug, dose, method of delivery and duration of therapy that achieves good treatment effectiveness while controlling the risk of bacteria developing antimicrobial resistance. Also, it is the producer’s responsibility to identify potential impediments to effective implementation of the treatment regimen and solutions to overcome the obstacles.

In addition, veterinarians and producers must continually evaluate the effectiveness of disease prevention and treatment strategies, considering both short-term and future ramifications, as well as individual and population outcomes for each treatment decision to ensure that benefits far outweigh harms.

In order to ensure antimicrobials will be available and effective for upcoming generations, veterinarians and cattle producers must continually practice antimicrobial stewardship. Strategies to steward antimicrobial resources will continually evolve to meet the needs of cattle and people both today and into the future. **AJ**

Editor’s note: Robert L. Larson is a professor of production medicine and executive director of Veterinary Medicine Continuing Education at Kansas State University.