Judicious therapeutic use of antimicrobials

Position statement

Judicious therapeutic use of antimicrobials is a core principle of the broader goal of antimicrobial stewardship. Antimicrobial Stewardship involves maintaining animal health and welfare by implementing a variety of preventive and management strategies to prevent common diseases; using an evidence-based approach in making decisions to use antimicrobial drugs; and then using antimicrobials judiciously, sparingly, and with continual evaluation of the outcomes of therapy, respecting the client's available resources. In addition, other management and intervention strategies may be considered prior to antimicrobial therapy for infectious diseases.

When the decision is made to administer an antimicrobial for prevention, control and treatment of diseases caused by bacteria, veterinarians should preserve the effectiveness and availability of existing antimicrobial agents, while striving to optimize therapeutic efficacy and minimize antimicrobial resistance. In accordance with the FDA, therapeutic uses are associated with the prevention, control and treatment of specific diseases that are necessary for assuring the health of animals.

Judicious use principles

Judicious use should include veterinary oversight in the context of a veterinarian-client-patient relationship (VCPR), the basis for interaction among veterinarians, their clients, and their patients.

- Antimicrobials should be used in animals only after careful review and consideration of the following points:
  - A general or preliminary diagnosis has been made which indicates that antimicrobial therapy is appropriate.
  - Culture and antimicrobial susceptibility testing should be performed when possible to guide the selection of antimicrobials.
  - Regimens for antimicrobial prevention, control and treatment should be established using accepted scientific and clinical principles, such as microbiological and pharmacological tenets.
  - Antimicrobial therapy for uncomplicated viral infections and non-septic inflammatory conditions should be avoided.
  - Duration of therapy should be based on scientific and clinical evidence in order to obtain the desired health outcome while minimizing selection for antimicrobial resistance, as allowed by law.
  - Antimicrobial therapy should be targeted to ill or at-risk animals when possible, and other management strategies should be used to prevent infection in healthy individuals.
- Accurate records of therapy and outcome should be maintained.
- Environmental contamination with antimicrobials must be avoided whenever possible.

Glossary:

**These terms are defined and utilized in this text as applied to the principles of Judicious Use outlined within this document.*

Antibiotic--a chemical substance produced by a microorganism which has the capacity, in dilute solutions, to inhibit the growth of or to kill other microorganisms. Often used interchangeably with "antimicrobial agent."

Antimicrobial--an agent that kills microorganisms or suppresses their multiplication or growth. Often used interchangeably with "antibiotic."

Antimicrobial Resistance--a property of microorganisms that confers the ability to inactivate or elude antimicrobials or a mechanism that blocks the inhibitory or killing effects of antimicrobials.

Therapy/Therapeutic—prevention, control and treatment of disease.

Antimicrobial prevention of disease (synonym: prophylaxis):

1. Prevention is the administration of an antimicrobial to an individual animal to mitigate the risk for acquiring disease or infection that is anticipated based on history, clinical judgment, or epidemiological knowledge.
2. On a population basis, prevention is the administration of an antimicrobial to a group of animals, none of which have evidence of disease or infection, when transmission of existing undiagnosed infections, or the introduction of pathogens, is anticipated based on history, clinical judgment or epidemiological knowledge.

Antimicrobial control of disease (synonym: metaphylaxis):

1. Control is the administration of an antimicrobial to an individual animal with a subclinical infection to reduce the risk of the infection becoming clinically apparent, spreading to other tissues or organs, or being transmitted to other individuals.
2. On a population basis, control is the use of antimicrobials to reduce the incidence of infectious disease in a group of animals that already has some individuals with evidence of infectious disease or evidence of infection.

Antimicrobial treatment of disease:

1. Treatment is the administration of an antimicrobial as a remedy for an individual animal with evidence of infectious disease.
2. On a population basis, treatment is the administration of an antimicrobial to those animals within the group with evidence of infectious disease.

Antimicrobial resources:

- Antimicrobial use and antimicrobial resistance

Relevant AVMA policy:

- antimicrobials in aquatic animal medicine, Judicious therapeutic use of
- antimicrobials for use in food-producing animals, Approval and availability of
- antimicrobials, AAFP/AAHA basic guidelines of judicious therapeutic use of
- antimicrobials in swine, AASV basic guidelines of judicious therapeutic use of
- National Antimicrobial Resistance Monitoring System (NARMS)
- Veterinary foresight and expertise in antimicrobial discussions

AVMA endorsed policy:

- antimicrobials in poultry, AAAP guidelines for judicious therapeutic use of
- antimicrobials in cattle, AABP judicious therapeutic use of
- AAEP prudent drug use guidelines

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