

The AVMA's definitions of antimicrobial prevention, control, and treatment

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David R. Smith, DVM, PhD
Diplomate, ACVPM (Epidemiology)
Mississippi State University
College of Veterinary Medicine



Committee on Antimicrobials -

"The Committee on Antimicrobials, in order to promote, protect, and advance the veterinary profession, will advise the AVMA Board of Directors on the topic of antimicrobials."



<https://www.avma.org/About/Governance/Councils/Pages/Committee-on-Antimicrobials.aspx>
Accessed 10/16/19



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Committee on Antimicrobials - Entity Description

The Committee on Antimicrobials, in order to promote, protect, and advance the veterinary profession, will advise the AVMA Board of Directors on the topic of antimicrobials. The committee reviews and supports the AVMA's overarching strategy to allow the veterinary profession to effectively share robust and comprehensive recommendations for policy and its implementation with legislators, regulators, the marketplace, and other stakeholders. The committee has the authority to convene virtual working groups with clear objectives. Further, the committee serves as the lead AVMA entity in the Association's collaboration with similarly focused stakeholders as well as human medical entities (e.g., Centers for Disease Control and Prevention) in a One Health approach to the overarching issue of antimicrobial resistance.

- FAQs
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 - Aquatic Veterinary Medicine
 - Disaster Preparedness
 - Diversity & Inclusion
 - FSVM
 - Human-Animal Bond
 - One Health
- Reports**

Antimicrobial Use in Veterinary Practice

Antimicrobial stewardship and judicious use

Judicious therapeutic use of antimicrobials is critically important regardless of your patient's species. Proper antimicrobial use optimizes therapeutic efficacy, enhances treatment success, and minimizes resistance to antimicrobials. Antimicrobial resistance threatens animal health and welfare, food production, and public health, and can impact the results of biomedical research. Veterinarians have a unique and important role in helping protect antimicrobial effectiveness. AVMA supports veterinarians in this role with educational materials and policies outlining principles for [antimicrobial stewardship](#) and [judicious use](#).



Veterinary Feed Directive (VFD)

Before the federal Veterinary Feed Directive (VFD) took effect, medically important antibiotics could be—and were—administered to food animals for production purposes such as growth promotion and feed efficiency. Adding veterinary oversight of the use of medically important antibiotics in food animals ensures that these antimicrobials are only used when medically necessary to protect the health of an animal. [Learn more about the Veterinary Feed Directive, and use AVMA tools to help write VFDs when they're needed.](#)

Tools for your veterinary clinic

These resources can help you communicate the importance of judicious antimicrobial use to clients and your community. Posters and brochures provide clear, concise information for clients, and other materials help with more in-depth conversations.

- [Veterinary checklist for antimicrobial stewardship](#) (PDF)
- [Antimicrobial do's and don'ts \(cat\)](#) (PDF)
- [Antimicrobial do's and don'ts \(dog\)](#) (PDF)

Antibiotic stewardship

“Antimicrobial stewardship refers to the actions veterinarians take individually and as a profession to preserve the effectiveness and availability of antimicrobial drugs through conscientious oversight and responsible medical decision-making while safeguarding animal, public, and environmental health.”

(AVMA, 2018)

<https://www.avma.org/KB/Policies/Pages/Antimicrobial-Stewardship-Definition-and-Core-Principles.aspx>



Antibiotic Stewardship Principles

The American Veterinary Medical Association has defined five principles of antibiotic stewardship:

- *Commit to stewardship*
- *Advocate for a system of care to prevent common diseases*
- *Select and use antimicrobial drugs judiciously*
- *Evaluate antimicrobial drug use practices*
- *Educate and build expertise*

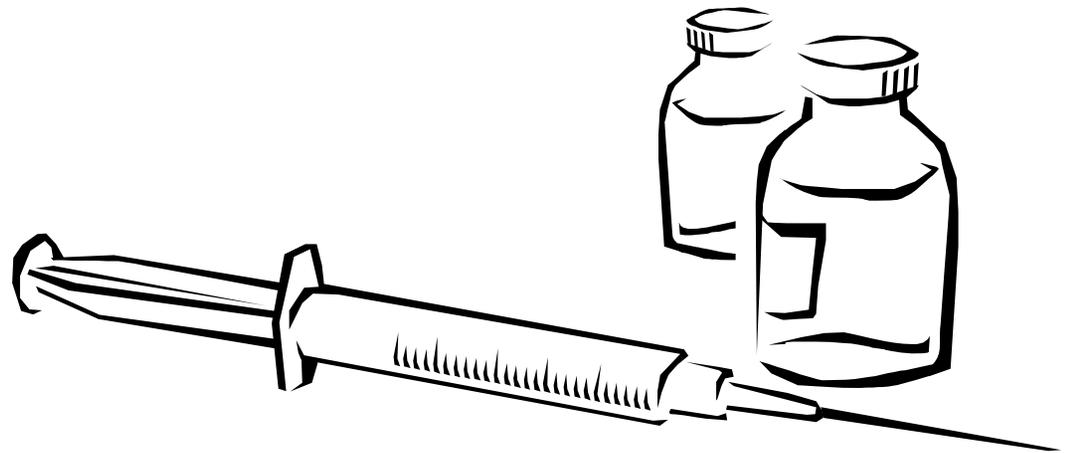
(ref: <https://www.avma.org/KB/Policies/Pages/Antimicrobial-Stewardship-Definition-and-Core-Principles.aspx>. Accessed June 11, 2018)



Select and use antimicrobial drugs judiciously

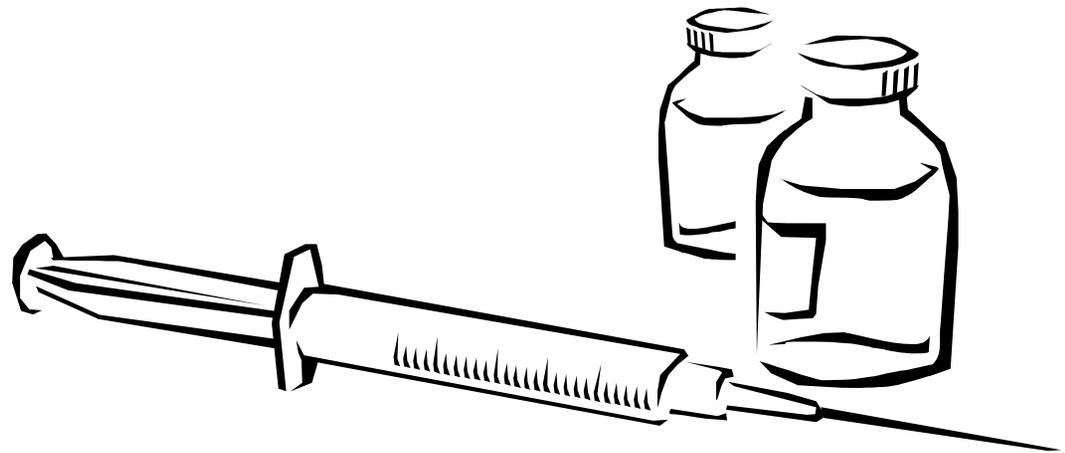
Make the best medical decision for antimicrobial therapy (prevention, control, treatment) based on:

- **Correct diagnosis**
- **Rules and regulations (AMDUCA)**
- **Voluntary Quality Assurance Guidelines**
- **Human health issues**
 - Chemical residues (withdrawal)
 - Antimicrobial resistance
 - Safety (care-giver)
- **Animal well-being, accessibility and client capability**
 - Drug form
 - Route of administration
 - Delivery device
- **Pharmacology**
 - Correct drug
 - Correct dose
 - Correct dosing interval
 - Correct amount of time



What uses are judicious?

- California Senate Bill No. 27, which became effective January 1, 2018, says: “antimicrobial stewardship’ is a commitment to... use medically important antimicrobial drugs only when necessary to treat, control, and, in some cases, prevent, disease.”



What uses are judicious?

- Maryland's Keep Antibiotics Effective Act of 2017 provides for using medically important antimicrobial drugs in cattle, swine or poultry only for 1) **treatment** of disease; 2) to **control** the spread of disease or infection; or 3) for a surgery or medical procedure.
- The legislation also allows **prophylactic** use of a medically important antimicrobial drug if a licensed veterinarian judges the use necessary to address an elevated risk of contraction of a particular disease or infection –not more than 21 days without veterinary oversight.
- Regular patterns of administering medically important antimicrobials is only allowed for **treatment** or **control** of disease.
- Language strengthened and clarified in 2019 -HB 0652/SB0471

What uses are judicious?

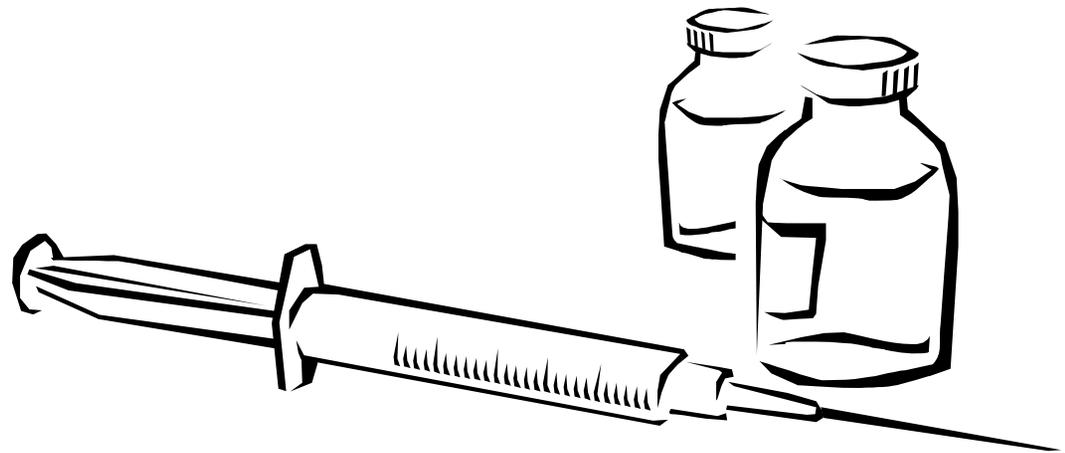
- Maryland's Keep Antibiotics Effective Act of 2017 provides for using medically important antimicrobials in cattle, swine or poultry only for 1) **treatment** of a medical procedure or 2) **control** the spread of disease or infection.
- The legislation also allows for the use of medically important antimicrobials for the use necessary to treat a disease of a particular disease without veterinary oversight.
- Regular patterns of antimicrobial use is only for the treatment of disease.
- Language strengthened in H.R. 0652/SB0471



Similar
legislation
being drafted
in New York
and Illinois

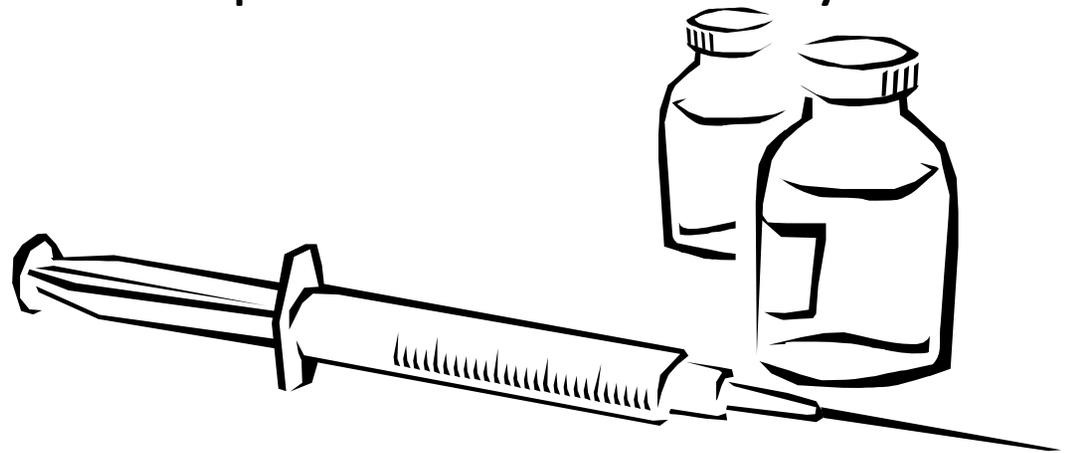
What uses are judicious?

- The World Health Organization recommends that farmers stop using medically important antimicrobials routinely to **prevent** disease in healthy animals.



What uses are judicious?

The sense one gets from these policy statements and regulations is that antimicrobial stewardship should be prioritized by the **intent of the therapeutic use** (e.g. whether the purpose is to prevent, control, or treat disease) such that treatment of clinically diseased individuals seems to fall high in the ranks of good stewardship whereas preventive uses may not.





using medically important antimicrobials routinely to **prevent** disease in healthy animals...

<https://www.traveller.com.au/content/dam/images/h/1/f/a/w/y/image.related.articleLeadwide.620x349.h1hnbx.png/1568421833545.jpg>

Antimicrobial prevention, control, treatment

AABP Policy

“AVMA believes antimicrobial stewardship can be achieved whether the intent is prevention, control, or treatment, and attempts to prioritize antimicrobial stewardship by therapeutic purpose are misguided. Stewardship is better demonstrated by the clinical rationale for antimicrobial therapy.”

<https://www.avma.org/KB/Policies/Pages/AVMA-Definitions-of-Antimicrobial-Use-for-Treatment-Control-and-Prevention.aspx>

Accessed 12/5/18



US GAO and OIE definitions

- Ambiguous about administration of antimicrobials to animals with evidence of disease other than obvious clinical signs (e.g. laboratory diagnosis of subclinical infection)
- Do not distinguish antimicrobial use in individual animals versus groups of animals
- Less specific about evidence for predicting disease occurrence

Definitions of antimicrobial uses for the prevention, control, and treatment of disease provided by the US Government Accountability Office (GAO)¹⁴ and the World Organisation for Animal Health (OIE).¹⁵

Antimicrobial use	US GAO	OIE
Prevention	Disease prevention: administered to a group of animals, none of which is exhibiting clinical signs of disease, in a situation where disease is likely to occur if the drug is not administered.	“To prevent”: means to administer an antimicrobial agent to an individual or a group of animals at risk of acquiring a specific infection or in a specific situation where infectious disease is likely to occur if the drug is not administered.
Control	Disease control: administered to a group of animals when a proportion of the animals in the group exhibit clinical signs of disease.	“To control”: means to administer an antimicrobial agent to a group of animals containing sick animals and healthy animals (presumed to be infected), to minimize or resolve clinical signs and to prevent further spread of the disease.
Treatment	Disease treatment: administered only to animals exhibiting clinical signs of disease.	“To treat”: means to administer an antimicrobial agent to an individual or a group of animals showing clinical signs of an infectious disease.

The AVMA's definitions of antimicrobial uses for prevention, control, and treatment of disease

Members of the AVMA Committee on Antimicrobials:

David R. Smith, DVM, PhD (representing American Association of Bovine Practitioners), Starkville, Miss.

Patricia S. Gaunt, DVM, PhD (representing American Association of Fish Veterinarians), Stoneville, Miss.

Paul J. Plummer, DVM, PhD (representing American Association of Small Ruminant Practitioners), Boone, Iowa.

Hector M. Cervantes, DVM, MS (representing American Association of Avian Pathologists), Watkinsville, Ga.

Peter Davies, BVSc, PhD (representing American Association of Swine Veterinarians), Saint Paul, Minn.

Virginia R. Fajt, DVM, PhD (representing American Association of Small Ruminant Practitioners), College Station, Tex.

Erin Frey, DVM, MPH (representing American Animal Hospital Association), Raleigh, NC.

Michele T. Jay-Russell, DVM, MPVM, PhD (representing American Association of Food Safety and Public Health Veterinarians), Davis, Calif.

Terry W. Lehenbauer, DVM, MPVM, PhD (representing American Association of Bovine Practitioners), Tulare, Calif.

Mark G. Papich, DVM, MS (representing American Association of Equine Practitioners), Raleigh, NC.

Tina M. Parker, DVM, MScPH (at-large member), Gaithersburg, Md.

Erin C. Phipps, DVM, MPH (at-large member), Albuquerque, NM.

Joni M. Scheftel, DVM, MPH (representing American Association of Food Safety and Public Health Veterinarians), Mayer, Minn.

Lauren V. Schnabel, DVM, PhD (representing American Association of Equine Practitioners), Holly Springs, NC.

Randall S. Singer, DVM, PhD (representing American Association of Avian Pathologists), Saint Paul, Minn.

Janet E. Whaley, DVM (representing American Association of Fish Veterinarians), Brookeville, Md.

Jennifer K. Wishnie, DVM, MSc, MPH (representing American Association of Swine Veterinarians), San Luis Obispo, Calif.

Lindsay R. Wright, DVM (representing American Animal Hospital Association), Salt Lake City, Utah.

Michael Costin, DVM, MBA (AVMA staff consultant to the committee), Schaumburg, Ill.

Address correspondence to Dr. Smith (david.smith@msstate.edu).

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AVMA definition: 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 judgement, 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 judgement or epidemiological knowledge.



AVMA definition: 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.



AVMA definition: 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.



Conclusion

- The basis of antimicrobial stewardship is to preserve the effectiveness of antimicrobials for prevention, control, and treatment of bacterial diseases.
- Antimicrobial use practices are better evaluated on the basis of whether they comply with the principles of antimicrobial stewardship
 - specifically, whether decisions are based on optimizing therapeutic efficacy while minimizing the risk of antimicrobial resistance
 - not on the basis of whether the therapeutic intent of use is for the prevention, control, or treatment of disease.

“A stitch in time saves
nine.”

Thomas Fuller. *Gnomologia, Adagies and Proverbs,
Wise Sentences and Witty Sayings, Ancient and
Modern, Foreign and British*, 1732