

Antibiotic Use in Companion Animal Veterinary Practice

Antibiotic Resistance

- An essential part of veterinary and human medical care, antibiotics are used routinely to prevent and treat bacterial disease.
- Antibiotic effectiveness is declining as bacteria develop resistance.
- Antibiotic resistance is one of our most serious public health threats.
- CDC estimates that each year in the U.S., 2 million people develop resistant bacterial infections and 23,000 die as a result.
- In a 2015 Washington State survey, 91% of veterinary prescribers agreed that antibiotic resistance is an important public health issue.¹
- In veterinary medicine, we are faced with resistant infections for which there are few effective antibiotics.
- The major driver of antibiotic resistance is widespread antibiotic use, including appropriate and inappropriate use.

Room for Improvement in Veterinary Prescribing

- The Centers for Disease Control and Prevention (CDC) report that up to 50% of antibiotics in outpatient healthcare are unnecessary or incorrectly prescribed.²
- Similarly, in one veterinary teaching hospital study, 40% of canine antibiotics were prescribed for patients with no evidence of infection.³

Tools for Antibiotic Prescribing in Veterinary Medicine

- **Clinical guidelines.** The International Society of Companion Animal Infectious Diseases (ISCAID) has published antibiotic guidelines for three disease syndromes: canine pyoderma, canine and feline urinary tract infections, and canine and feline respiratory disease. These guidelines are available online at no cost (see references below).
- **Culture and sensitivity testing (C&S).** Diagnostic testing is an important clinical tool, providing information about infection etiology and resistance profile. However, almost a quarter of veterinarians in a Washington State study report not using C&S, and even more report using it <75% of the time.¹ Client cost is often a barrier to C&S, and testing is most common in situations of nonresponse or recurrence. Initial use of C&S can help prevent the need for multiple courses of therapy and development of resistant infections.



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**PROTECT HEALTH &
PRESERVE ANTIBIOTICS**

Tips from Current Clinical Guidelines

Feline upper respiratory tract infections (URI) often do not require antibiotic therapy. Although viral URI can be complicated by bacterial infection, most cats do not require antibiotic treatment. Like common colds in people, most feline viral URI will improve in 10 days without antibiotics. Supportive care (e.g., appetite stimulants, warmed food, humidified air) can improve comfort. If clinical signs worsen, do not improve in 10 days, or the cat becomes anorexic, antibiotic therapy might be warranted.

Urinary tract infections (UTI) are less common in cats than dogs and are very rare in young male cats. Urine culture and investigation for predisposing factors are warranted if infection is suspected.

We can likely shorten antibiotic duration. Recent studies suggest that for uncomplicated UTI, three days of therapy has the same outcome as 10–14 days.^{4,5}

Minnesota One Health Antibiotic Stewardship Collaborative

Minnesotans from animal, human, and environmental health are working together to be smart about antibiotic use and preventing antibiotic resistance!

www.health.state.mn.us/onehealthabx



Approaches to Improve Prescribing in Your Clinic

Antibiotic stewardship is the process of improving antibiotic use. Below are some concepts to discuss and steps that you can take in your clinic to develop an approach to antibiotic stewardship.

- **Identify clinical guidelines.** ISCAID guidelines for three syndrome types are listed below. Access the guidelines online and consider how they might influence your prescribing practices.
- **Consider implementing clinic-wide protocols to encourage prescribing aligned with clinical guidelines.** Improvement of prescribing can be easier with a facility-based approach, rather than relying on behavior change of individual prescribers.
- **Have conversations with staff about antibiotics.** Antibiotics are no longer something to use “just in case.” Untreatable infections are more common and are driven by antibiotic use.
- **Communicate with clients when antibiotics are not needed.** Let owners know that unnecessary antibiotic use has consequences for their pet. Find great clinic posters on AVMA’s website (see side bar).
- **Identify options for patients when antibiotics are not indicated.** Watchful waiting, drugs to relieve clinical signs, and supportive care can be relevant to specific syndromes and communicated to owners.
- **Focus on preventive care.** Vaccination programs and regular flea and tick prevention can reduce the need for antibiotic treatment.

Antibiotic-Use Guidelines for Companion Animal Medicine

- Antimicrobial Use Guidelines for Treatment of Urinary Tract Disease in Dogs and Cats. *Vet Med Intl.* 2011;2011:263-768.
- Guidelines for the Diagnosis and Antimicrobial Therapy of Canine Superficial Bacterial Folliculitis. *Vet Dermatol.* 2014 Jun;25(3):163-75.
- Antimicrobial use Guidelines for Treatment of Respiratory Tract Disease in Dogs and Cats. *J Vet Intern Med.* 2017 Mar;31(2):279-294.

References

1. Fowler et al. A survey of veterinary antimicrobial prescribing practices, Washington State 2015. *Vet Rec.* 2016 Dec 24;179(25):651.
2. CDC. Antibiotic Prescribing and Use in Doctor’s Offices. Available at: <https://www.cdc.gov/antibiotic-use/community/about/fast-facts.html>
3. Wayne et al. Therapeutic antibiotic use patterns in dogs: observations from a veterinary teaching hospital. *J. Sm Anim Pract.* 2011, 52;310-8.
4. Clare et al. Short- and long-term cure rates of short-duration trimethoprim-sulfamethoxazole treatment in female dogs with uncomplicated bacterial cystitis. *J Vet Intern Med.* 2014;28(3):818-826.
5. Westropp et al. Evaluation of the efficacy and safety of high dose short duration enrofloxacin treatment regimen for uncomplicated urinary tract infections in dogs. *J Vet Intern Med.* 2012;26(3):506-512.

Why Care about resistance?

Antibiotic-resistant infections are not necessarily more pathogenic, but they are more difficult to treat. Once bacteria become resistant, they could spread in clinics and among pets and people in a home.



Resources

- **American Veterinary Medical Association**
Antimicrobial Stewardship Definition and Core Principles
<https://www.avma.org/KB/Policies/Pages/Antimicrobial-Stewardship-Definition-and-Core-Principles.aspx>
- **Report: Antimicrobial Stewardship in Companion Animal Practice (2016)**
<https://www.avma.org/KB/Resources/Reports/Pages/Antimicrobial-Stewardship-in-Companion-Animal-Practice.aspx>
- **Clinic Posters: Be Careful with Antibiotics**
<https://www.avma.org/PracticeManagement/ClientMaterials/Pages/clinic-posters-be-careful-antibiotics.aspx>
- **Minnesota One Health Antibiotic Stewardship Website**
http://www.health.state.mn.us/onehealth_habx
- **Resource Library for Stewardship in Animal Health**
http://www.health.state.mn.us/onehealth_habx/animal.html