

International Society for Companion Animal Infectious Diseases  
& World Small Animal Veterinary Association Therapeutics Committee

# TARGETS FOR SURGICAL ANTIMICROBIAL PROPHYLAXIS IN DOGS AND CATS

Antimicrobial prophylaxis involves giving antimicrobials to animals to **prevent the development of potentially serious infections**. In contrast, therapeutic antimicrobials are given to **treat** a confirmed or suspected bacterial infection.

In dogs and cats, antimicrobial prophylaxis is used in a variety of veterinary settings including in patients undergoing surgery. Perioperative use can **reduce surgical site infections** for some procedures which can reduce morbidity, mortality or the need for later therapeutic use of antimicrobials.

Antimicrobial prophylaxis is not a substitute for **surgical aseptic technique**. Careful attention to hand hygiene, wearing appropriate personal protective equipment, using sterilized suture and instruments, and minimizing environmental contamination remains central to safe surgical practice.

Veterinarians need to **preserve their access** to use recommended antimicrobials for surgical prophylaxis. Nonetheless, it is important that such use follows **national and international guidelines**. We propose the following targets for ALL veterinary practices:

## By 2030



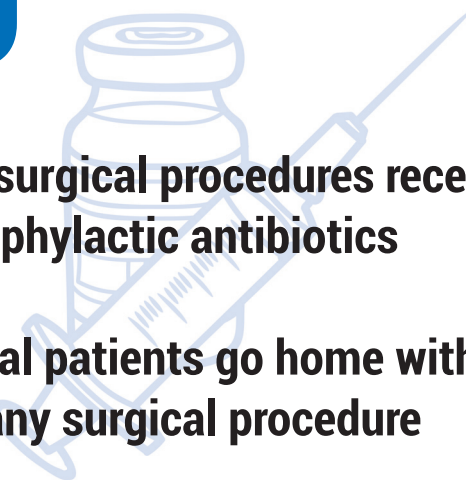
**> 95%**

**clean surgical procedures receive no prophylactic antibiotics**



**< 5%**

**surgical patients go home with antibiotics after any surgical procedure**



### Why is antimicrobial use in dogs and cats important?

Recently, the use of antimicrobials in dogs and cats has gained increasing attention due to the frequent use of **highest priority critically important drugs** such as **third-generation cephalosporins** and **fluoroquinolones**. These drugs are also used to treat serious infections in people. Any antimicrobial use in animals can promote the development of **antimicrobial resistance**.<sup>1</sup> Furthermore, the bacteria isolated from common infections in dogs and cats (e.g. staphylococci and Gram-negative bacteria like *E. coli*) can cause infections in people. It is increasingly recognized that **bacteria, or resistance conferring genes, can be shared between pets and owners**. While antimicrobials are needed to treat infections in animals, it is critical to ensure **judicious antimicrobial use in ALL species** to support the global fight against antimicrobial resistance.

### Do we need surgical antimicrobial prophylaxis in veterinary hospitals?

Surgical site infections affect both pet and human health, necessitating effective prevention strategies. **Surgical antimicrobial prophylaxis**, used to avoid surgical site infections, accounts for approximately **15% of all antimicrobial use** in hospitalized humans<sup>2-3</sup> and similar proportions in dogs and cats.<sup>4</sup> Recent European legislation (Regulation (EU) 2019/6) has introduced restrictions on veterinary antimicrobial prophylaxis such that surgical antimicrobial prophylaxis must be **reserved for "exceptional cases"** and administered only to individual animals **where "severe consequences" from an infection are anticipated**. Presently, veterinary surgical antimicrobial prophylaxis is used for many routine surgical and dental procedures despite a lack of evidence of need.<sup>5-6</sup>

### Is there evidence supporting when antimicrobials should be used during veterinary surgeries?

Current veterinary evidence supports that **antimicrobials do not improve outcomes and are not needed for any clean procedures**. Surgical antimicrobial prophylaxis only provides a benefit and is indicated for certain **gastrointestinal procedures** and in **orthopedic procedures involving the placement of implants**. The practice of continuing **antimicrobial prophylaxis for days following surgery is not recommended in dogs or cats for any procedure**.

The 2030 targets were informed by a scoping review, performed by the European Network for Optimization of Veterinary Antimicrobial Treatment, which identified 34 studies (including 8 randomized controlled trials) that described surgical site infection rates with or without surgical antimicrobial prophylaxis.<sup>7</sup> There is an **urgent need for more, robust comparative studies** to determine the effectiveness of antimicrobial prophylaxis for all surgical procedures.

### What actions should be taken by veterinarians?

Preserving access to prophylactic antimicrobial use in dogs and cats is necessary for patient welfare and to reduce the development of preventable serious infections. Prophylactic use can and should be optimized by prioritizing procedures where prophylaxis is demonstrably necessary, along with appropriate antimicrobial selection, dosing, and treatment duration. Specifically, efforts should aim to eliminate routine post-operative antimicrobial prophylaxis and reserve perioperative use for gastrointestinal procedures or orthopedic procedures involving implants.

**By 2030, we recommend at least 95% of dogs and cats undergoing clean surgical procedures (e.g., ovariohysterectomy, castration, dermal mass removals) and dentals receive no antimicrobials for prophylactic purposes and that less than 5% of all surgical patients go home with antimicrobials.**

These are achievable goals for primary care, specialty, and veterinary teaching hospitals. Veterinarians are encouraged to review available guidelines, measure, evaluate, and report their practice habits, and start working to reach these targets today.

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3. JAMA. 2014 Oct 8;312(14):1438-46. doi: 10.1001/jama.2014.12923.  
4. J Vet Intern Med. 2022 Jan;36(1):244-252. doi: 10.1111/jvim.16314.

5. Vet Microbiol. 2017 May;203:301-307. doi: 10.1016/j.vetmic.2017.03.027  
6. PLoS One. 2023 Dec 8;18(12):e0295070. doi: 10.1371/journal.pone.0295070.  
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