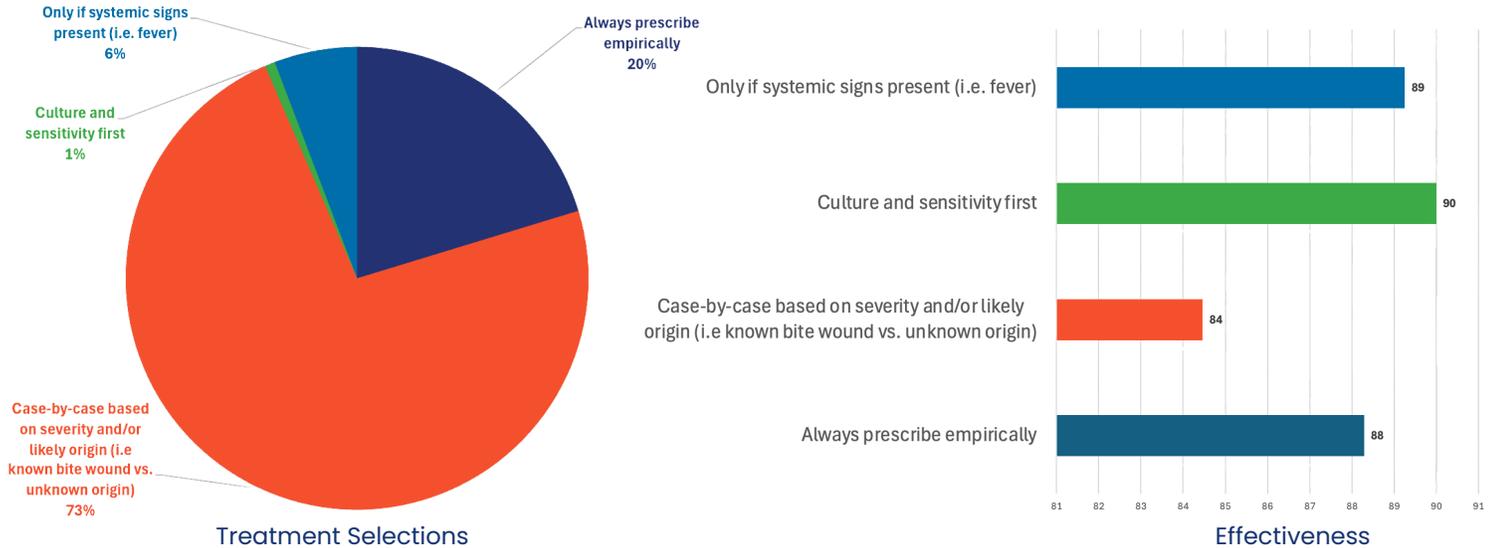# Surgical Site Infections in Canines

When asked how they approach surgical site infections, most responding DVMs described starting with the individual patient—**73% said they make the diagnosis on a case-by-case basis**. Even so, many pointed to what they feel works best in practice: empiric prescribing, which the majority believes leads to the strongest outcomes.

Pie chart — Treatment Selections:
- Only if systemic signs present (i.e. fever) 6%
- Culture and sensitivity first 1%
- Always prescribe empirically 20%
- Case-by-case based on severity and/or likely origin (i.e known bite wound vs. unknown origin) 73%

Bar chart — Effectiveness:
- Only if systemic signs present (i.e. fever): 89
- Culture and sensitivity first: 90
- Case-by-case based on severity and/or likely origin (i.e known bite wound vs. unknown origin): 84
- Always prescribe empirically: 88

Specialists Insight

Many specialists favor a beta-lactam antibiotic active against skin flora (especially Staphylococcus pseudintermedius), typically either:
- Amoxicillin-clavulanate (e.g., Clavamox) or
- A first-generation cephalosporin (e.g., cephalexin, cefpodoxime).
- The logic: these cover the common skin pathogens; they are licensed, familiar, and typically effective in uncomplicated SSIs.

Treatment Effectiveness

While there is not a definitive percentage, many would estimate > 80% success in straightforward clean/clean-contaminated SSIs when using appropriate antibiotic therapy plus surgical/wound management (debridement, drainage, good hygiene, etc.). Complexity factors (implants, immunocompromise, multidrug resistance) lower the success rate.

Supporting Evidence from Peer–Reviewed Literature

In a retrospective Finnish study of clean orthopaedic and neurosurgeries in dogs, SSI rate was ≈6.3%. Prophylaxis (cefazolin) was given, and omission of antibiotics did not significantly increase SSI risk in this low-risk clean setting.

- **Implication:** Even in clean surgery, SSI risk is modest, and antimicrobial choice/timing matters more than simply "any antibiotic".

A recent open-access study ("Surgical Antibiotic Prophylaxis in Small Animal Surgery: A Retrospective Outcome-Based Study…", Animals, 2025) found that in clean or clean-contaminated procedures without implants, no significant difference in SSI rates was seen among different prophylactic protocols.

- **Implication:** For prophylaxis (rather than active treatment of SSI), the spectrum and timing matter; also emphasizes surgery + wound care importance.

The WSAVA guideline document "Surgical Antibiotic Prophylaxis in Dogs (2024)" points out that the most common organisms in dog skin flora are Staph. pseudintermedius and that first-generation cephalosporins or amoxicillin-clavulanate are recommended when prophylaxis is indicated.

- **Implication:** This supports the choice of amoxicillin/clavulanate or cephalexin/cefpodoxime as a logical empiric first-line.

Specialist Rationale Summary

- Empirical therapy for an uncomplicated, typical SSI often uses broad-spectrum but skin-flora-targeted beta-lactams (amox/clav) or first-gen cephs.
- Culture + sensitivity is ideal in complicated cases (implant, MDR, immunocompromised) — many specialists will say "culture first-line for complicated SSIs".
- Success rates in straightforward cases are high (>80%), but outcomes drop when complicating factors exist (implant, drain, immunosuppression, resistant bacteria).
- Timing/prophylaxis (in the surgical setting) is less about long-post-op therapy, and more about peri-operative antibiotic at correct timing plus asepsis.