

Antibiotic Stewardship Strategies: Outpatient Dental Settings



Antibiotic use in outpatient dental settings

Antibiotics are the most prescribed medications by general dentists.¹ Dentists prescribe antibiotics to treat bacterial oral infections and as prophylaxis prior to invasive dental procedures for certain high-risk patient populations. In 2022, general dentists prescribed 25.2 million antibiotic prescriptions, accounting for more than 10% of all antibiotic use in outpatient settings.²

Published studies have shown a high rate of unnecessary antibiotic prescribing in dentistry.^{3,4} Clinical practice guidelines have been updated to optimize antibiotic use for the treatment of dental infections,⁵ however prescribing rates among dentists have remained stable.² There are opportunities to improve antibiotic prescribing in dental settings by:

- Increasing awareness of treatment guidelines.
- Reducing the use of clindamycin, which is not recommended as a first-line agent and carries a higher risk of *Clostridioides difficile* infection compared to other agents.⁶
- Shortening antibiotic therapy to the minimum effective duration.
- Evaluating penicillin allergy labels.

Factors that may impact antibiotic prescribing in outpatient dental settings

- Decision-making for dental antibiotic prescribing may be impacted by recommendations from medical providers and dental specialists, as well as patient requests.⁷
- Dentists may not have access to medical records to confirm a patient's medical history (e.g., comorbid conditions, medication allergy, history of *Clostridium difficile* infection).
- Dental clinics do not commonly have information technology support for tracking and reporting antibiotic prescribing.
- Dental antibiotic prescriptions may not require a corresponding diagnostic code or indication for use, thus assessing appropriateness can be challenging and time-consuming.⁸
- In dentistry, there are no clinical practice guidelines for certain conditions, such as antibiotic prophylaxis for tooth extractions and dental implants or treatment of infections following these procedures, leading to variable prescribing practices.

Antibiotic stewardship strategies for outpatient dental settings

Antibiotic stewardship interventions and strategies outlined in the Core Elements of Outpatient Antibiotic Stewardship framework can be adapted to the outpatient dental setting to optimize prescribing practices.

- **Integrate dental stewardship activities into dental infection prevention efforts.** Develop policies and standard operating procedures that encompass both antibiotic stewardship and infection prevention practices.⁹ Incorporating stewardship into the facility's infection control manual and aligning stewardship-related activities with the current responsibilities of the infection prevention coordinator can further support this effort.
- **Implement standardized practices for antibiotic prescribing.** Ensure concordance with clinical practice guidelines when prescribing antibiotics for the treatment of dental infections⁵ and for prevention of infective endocarditis and prosthetic joint infections prior to invasive dental procedures.¹⁰⁻¹² Incorporate evidence-based recommendations for treating dental infections and using antibiotic prophylaxis into the dental workflow using prescribing templates and clinical decision support tools.⁸
- **Implement practices to monitor antibiotic prescribing and appropriateness of use.** Develop a system for tracking antibiotic prescriptions on a regular basis and adopt a practice-wide policy requiring documentation of diagnostic code or indication for antibiotic use in the dental record. Consider engaging with electronic dental record companies to incorporate automated tracking and reporting features into their platforms.²
- **Optimize antibiotic selection and duration.** Avoid prescribing clindamycin when first-line agents or alternative options can be used.^{5, 10} Prescribe the shortest effective antibiotic duration when treating dental infections.⁵ When antibiotic prophylaxis is indicated, ensure it's given as a single dose before the dental procedure.¹⁰ This can be supported by developing a standardized evaluation form for assessing a patient's medical and dental history prior to prescribing an antibiotic. Automated alerts to review appropriateness of antibiotic selection and duration can also be considered.
- **Support a unified approach to antibiotic prescribing for dental conditions.** Studies have shown that prescribing practices for antibiotics may differ between dentists, medical providers, and dental specialists.^{7, 13} This variability combined with patient expectations may contribute to unnecessary use of antibiotics. Implement practices to improve communication, such as structured templates for corresponding with primary care clinicians or orthopedic surgeons to address requests for antibiotic prophylaxis not supported by current guidelines.¹⁴ Educate clinic staff and patients on treatment and prophylaxis recommendations to support consistent use of antibiotics.¹⁵

References:

1. Koppen L, Suda KJ, Rowan S, McGregor J, Evans CT. Dentists' prescribing of antibiotics and opioids to Medicare Part D beneficiaries: Medications of high impact to public health. *J Am Dent Assoc.* 2018;149(8):721–30.
2. Huynh CT, Gouin KA, Hicks LA, Kabbani S, Neuburger M, McDonald E. Outpatient antibiotic prescribing by general dentists in the United States from 2018 through 2022. *J Am Dent Assoc.* 2025;156(5):382-9.e2.
3. Hubbard CC, Evans CT, Calip GS, Zhou J, Rowan SA, Suda KJ. Appropriateness of Antibiotic Prophylaxis Before Dental Procedures, 2016-2018. *Am J Prev Med.* 2022;62(6):943–8.
4. Suda KJ, Fitzpatrick MA, Gibson G, Jurasic MM, Poggensee L, Echevarria K, et al. Antibiotic prophylaxis prescriptions prior to dental visits in the Veterans' Health Administration (VHA), 2015–2019. *Infect Control Hosp Epidemiol.* 2022;43(11):1565–74.
5. Lockhart PB, Tampi MP, Abt E, Aminoshariae A, Durkin MJ, Fouad AF, et al. Evidence-based clinical practice guideline on antibiotic use for the urgent management of pulpal- and periapical-related dental pain and intraoral swelling: A report from the American Dental Association. *J Am Dent Assoc.* 2019;150(11):906-21.e12.
6. Zhang J, Chen L, Gomez-Simmonds A, Yin MT, Freedberg DE. Antibiotic-Specific Risk for Community-Acquired *Clostridioides difficile* Infection in the United States from 2008 to 2020. *Antimicrob Agents Chemother.* 2022;66(12):e0112922.
7. Lockhart PB, Thornhill MH, Zhao J, Baddour LM, Gilbert GH, McKnight PE, et al. Factors that affect dentists' use of antibiotic prophylaxis: Findings from The National Dental Practice-Based Research Network questionnaire. *J Am Dent Assoc.* 2022;153(6):552–62.
8. Fluent MT, Jacobsen PL, Hicks LA. Considerations for responsible antibiotic use in dentistry. *J Am Dent Assoc.* 2016;147(8):683–6.
9. Fluent MT, Bailey EM, Washer LL, Hill A, Kennedy E. Infection prevention and antibiotic stewardship in dentistry: Partnering for a safer future. *J Am Dent Assoc.* 2025;156(11):886-90.
10. Wilson WR, Gewitz M, Lockhart PB, Bolger AF, DeSimone DC, Kazi DS, et al. Prevention of Viridans Group Streptococcal Infective Endocarditis: A Scientific Statement From the American Heart Association. *Circulation.* 2021;143(20):e963-e78.
11. 11. Prevention of Total Hip and Knee Arthroplasty Periprosthetic Joint Infection in Patients Undergoing Dental Procedures Evidence-Based Clinical Practice Guideline: The American Academy of Orthopaedic Surgeons and American Association of Hip and Knee Surgeons; 2024 [Available from: [aaos.org/dentalppxcpg](https://www.aaos.org/dentalppxcpg)].
12. Paumier TM, Lockhart PB, Springer B, Thornhill MH. What dentists need to know about new guidelines for the treatment of patients with prosthetic joints. *J Am Dent Assoc.* 2026;157(2):118–20.
13. Goff DA, Mangino JE, Glassman AH, Goff D, Larsen P, Scheetz R. Review of Guidelines for Dental Antibiotic Prophylaxis for Prevention of Endocarditis and Prosthetic Joint Infections and Need for Dental Stewardship. *Clin Infect Dis.* 2020;71(2):455-62.
14. Antibiotic stewardship for prescribers: Association for Dental Safety; 2025 [Available from: <https://www.myads.org/antibiotic-stewardship-for-prescribers>].
15. Teoh L, Thompson W, Suda K. Antimicrobial stewardship in dental practice. *J Am Dent Assoc.* 2020;151(8):589–95.