

2015 Antibiotic Stewardship in Dentistry: Antibiotic Use Survey Among MN Dentists

SUMMARY REPORT

Methodology

In September 2015, Minnesota Department of Health (MDH) distributed a survey through a secure online platform to assess antibiotic use knowledge among Minnesota (MN) dentists in an effort to inform antibiotic stewardship (AS) efforts. The survey instrument was developed in partnership with the Minnesota Board of Dentistry (MBOD) and Minnesota Dental Association (MDA). The survey was emailed to a list of members, which encompassed approximately 2,800 dentists and 70% of licensed MN dentists. Reminder emails were sent to non-responders four times during a two-month period.

Results

- 437 dentists completed the survey (16% response rate). (Table 1)

Table 1: Respondent Demographics

Demographic Variable	n	%
Male	297	68
Caucasian	382	90
Reside in Minneapolis-St. Paul Metropolitan Area	257	58
Own Solo Practice	192	44
In-Practice >20 Years	275	63
Certified in a Specialty	65	15

- Monthly median of four antibiotic prophylaxis prescriptions and five antibiotic treatment/therapy prescriptions.
- Amoxicillin and penicillin were the most commonly reported first-line antibiotics.
- Respondents reported greater antibiotic use than currently recommended by existing guidelines. (Table 2)

- The most common scenarios to prescribe an antibiotic included invasive procedures (84%) and localized swelling (70%).
- Nonclinical factors for prescribing antibiotics included precautionary measure for patients going on vacation (38%), gum pain (38%), legal or liability concerns (24%), and patient demand (22%).
- Guidelines (79%) and primary care physician recommendations (64%) were the most common factors that influenced decisions to prescribe antibiotics.
- 68% of dentists verbally provided information to patients about possible antibiotic side effects or adverse reactions and actions to take.
- Dentists showed an interest in educational campaigns and learning more about antibiotic selection and risk, including adverse drug effects, *Clostridioides difficile* infection, and antibiotic resistance.

Table 2: Key Issues Concerning Antibiotic Use

Antibiotic Prophylaxis Recommendations	Antibiotic Treatment Recommendations	Antibiotic Selection	Reported Challenges to Antibiotic Use Decisions
Reported use compared to recommendations for selected heart conditions Reported use compared to recommendations for prosthetic joints	Reported use compared to suggested clinical considerations	Reported use compared to clinical guidelines	Reported challenges highlight need for stewardship efforts (e.g., perceived guideline differences)

Discussion and Next Steps

- Key recommendations for antibiotic prescribing were revised in 2007 and 2015 on the basis of increasing evidence for more restrictive antibiotic use. More educational efforts to inform dentists of guideline changes should be addressed.
- A lack of information concerning antibiotic selection and awareness about antibiotic risks highlight the need for improved antibiotic stewardship interventions within dentistry.
- Common antibiotic use challenges included perceived conflicting provider guidelines, conflicting scientific evidence, and a lack of information on antibiotic selection or risks.
- This survey has made MDH, MBOD, and MDA more aware of the knowledge, practices, and challenges of antibiotic stewardship among MN dentists.
- MDH, MBOD, and MDA will continue to work together on the development and promotion of antibiotic stewardship resources and tools for dentists.
- This study has been published in *General Dentistry*.¹
- If you would like to work with us to improve antibiotic stewardship, please email health.stewardship@state.mn.us.

Antibiotic Use Guidelines for Dentistry

- Prevention of infective endocarditis. J Am Dent Assoc 2008;139 Suppl:3s–24s.
- AHA/ACC focused Guideline for the Management of Patients With Valvular Heart Disease. Circulation 2017. Available online.
- Using prophylactic antibiotics prior to dental procedures in patients with prosthetic joints. J Am Dent Assoc 2015;146(1):11–16.e8.
- American Dental Association guidance for utilizing appropriate use criteria in the care of patients with orthopedic implants undergoing dental procedures. J Am Dent Assoc 2017;148(2):57-59.
- Guideline on antibiotic prophylaxis for dental patients at risk for infection. American Academy Pediatric Dentistry Reference Manual 2014;38(6):328–333. Available at <http://www.aapd.org/policies/>.
- Guideline on appropriate use of antibiotic therapy for pediatric dental patients. American Academy Pediatric Dentistry Reference Manual 2014;38(6):325–327. Available at: <http://www.aapd.org/policies/>.

References

1. Tomczyk S, Whitten T, Holzbauer SM, Lynfield R. Combating antibiotic resistance: a survey on the antibiotic-prescribing habits of dentists. Gen Dent. 2018 Sep-Oct;66(5):61-68. PubMed PMID: 30188859.

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