

# Delayed Antibiotic Prescribing: A Simple Strategy to Promote Antibiotic Stewardship

By Elaine M. Bailey, PharmD, and Marie T. Fluent, DDS

It has been estimated that at least 30% of all outpatient antibiotics are prescribed unnecessarily.<sup>4</sup> Inappropriate administration of antibiotics before dental visits has been reported to be as high as 80%.<sup>5</sup> Reducing inappropriate use is essential to reduce both antibiotic resistance and adverse events. The ADA is encouraging the dental profession to move from a “just in case” approach of antibiotic prescribing to a “when absolutely needed” approach. One strategy to achieve this goal is by practicing delayed antibiotic prescribing in the management of oral infections.

Delayed prescribing is a strategy that has been used by health care

providers for at least three decades to reduce unnecessary prescribing of antibiotics. In this strategy, the prescriber assesses that the patient’s infection is likely viral and/or will resolve without antibiotics and advises the patient to delay filling a prescription for an antibiotic for two or three days. The Centers for Disease Control and Prevention advocates this approach in the management of respiratory tract infections, including middle ear infections (see: (<https://www.cdc.gov/antibiotic-use/community/for-patients/common-illnesses/ear-infection.html>)).

A Cochrane systematic review supports the use of delayed antibiotic

prescribing for patients presenting with respiratory infections.<sup>6</sup> The review found that:

1. Delayed antibiotics reduced antibiotic use compared to immediate antibiotics, but was no different than no antibiotics in terms of symptom control and disease complications.

2. Delayed antibiotics did not result in reduced patient satisfaction when compared to an immediate prescription, but was favored over no antibiotics.

3. Delayed antibiotics significantly lowered antibiotic use when compared to immediate antibiotics.

## Guidelines for antibiotic use for the treatment of oral infections

The ADA Center for Evidence-Based Dentistry has published clinical practice guidelines on antibiotic use for treatment of oral dental infections, and has provided clinical recommendations for the urgent management of various dental infections, either alone or as adjunct to definitive, conservative dental treatment (DCDT) in immunocompetent adults.<sup>3</sup> The guidelines advise against using antibiotics for most pulpal- and periapical-related dental pain and swelling.

In this clinical scenario, the guidelines recommend only the use of DCDT and, if needed, over-the-counter pain relievers such as acetaminophen and/or ibuprofen.<sup>3</sup> When DCDT is not feasible, they advocate for the use of delayed antibiotic prescribing for immunocompetent adults with

### Third in a Series on Antibiotic Stewardship

This article is the third in a series to discuss antibiotic stewardship efforts in the dental profession. The first article, published in the *Journal's* October 2019 issue, focused upon the core elements of a stewardship program as developed by the Centers for Disease Control and Prevention.<sup>1</sup> The second article, published in August 2020, reviewed indications for prophylactic antibiotics and introduced the American Dental Association guidelines for the treatment of oral infections.<sup>2,3</sup>

In this third article, the authors will describe how the practice of delayed antibiotic prescribing, also known as watchful waiting, has been used in outpatient medical practices. In addition, situations where the ADA has recommended using delayed prescribing in the management of oral infections will be addressed, and a tool to help facilitate delayed prescribing in dental practices will be introduced.

pulp necrosis and symptomatic apical periodontitis. Dentists are advised to communicate to patients that if they do not improve in 24-48 hours, or if their symptoms worsen and they experience swelling or formation of purulent material, the delayed prescription should be filled.



In an effort to assist with patient communication in this approach, the Michigan Antibiotic Resistance Reduction (MARR) Coalition has collaborated with the Michigan Dental

Association to develop a patient education tool that may be provided to the patient along with the antibiotic prescription (Figure 1). This document was modeled after a similar tool developed by the CDC to facilitate the practice of delayed prescribing in patients with respiratory tract infections. In addition to providing guidance on the circumstances under which the antibiotic prescription should be filled, there are also recommendations for over-the-counter an-

algesics for pain management. This tool was reviewed by members of the MARR Advisory Council, staff at the MDA, and two expert panel members of the ADA Council of Scientific Affairs.

In order to establish the level of interest in such a tool, the MARR Coalition developed a survey, and the MDA electronically distributed the survey to its membership. Of the 329 respondents, 193 (59%) indicated that they  
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**Figure 1 — Delayed Prescribing Patient Education Tool**

<h2>WAIT!</h2> <h3>Don't have your antibiotic prescription filled yet!</h3>		<h2>Managing Your Pain</h2>						
<p><b>Your dentist believes that your dental pain and swelling may get better without antibiotics.</b></p> <p><b>Waiting to see if you really need an antibiotic can help you take antibiotics ONLY when needed.</b></p>		<p>Follow your dentist's recommendations to help your pain and swelling feel better without antibiotics. If your dentist was not able to perform dental treatment (such as a root canal or drainage of abscess), then it is very important that you have this treatment performed as soon as possible.</p> <p>Waiting to see if you really need an antibiotic can help you take antibiotics ONLY when needed. When your dental pain is unlikely to be caused by a bacterial infection, antibiotics won't help you and the side effects may hurt you. The best way to manage your condition is to have the dental procedure</p>						
<p><b>Rx</b></p> <p>If you feel better and your pain is improving, you do NOT need to fill the antibiotic prescription.</p> <p>If you do not feel better in _____ days, get your prescription filled.</p> <p>If you fill your antibiotic prescription, you should STOP taking it 24 hours after your pain gets better. Contact your primary care provider if you have diarrhea with 3 or more loose stools/day.</p> <p><b>Contact your dentist at _____ if:</b></p> <ul style="list-style-type: none"> <li>• Your pain and swelling get worse</li> <li>• Your pain and swelling do NOT improve in 2-3 days</li> <li>• You have any questions about these instructions</li> </ul>	<p>Follow your dentist's instructions for managing your pain:</p> <table border="1"> <thead> <tr> <th>Pain Level</th> <th>Pain Medicine</th> </tr> </thead> <tbody> <tr> <td>Mild to Moderate</td> <td>Ibuprofen 400-600 mg every 6 hours for 24 hours <b>then</b> ibuprofen 400 mg as needed for pain every 4 to 6 hours</td> </tr> <tr> <td>Moderate to Severe</td> <td>Ibuprofen 400-600 mg plus acetaminophen 500 mg every 6 for 24 hours then ibuprofen 400 mg plus acetaminophen 500 mg as needed for pain every 6 hours</td> </tr> </tbody> </table>		Pain Level	Pain Medicine	Mild to Moderate	Ibuprofen 400-600 mg every 6 hours for 24 hours <b>then</b> ibuprofen 400 mg as needed for pain every 4 to 6 hours	Moderate to Severe	Ibuprofen 400-600 mg plus acetaminophen 500 mg every 6 for 24 hours then ibuprofen 400 mg plus acetaminophen 500 mg as needed for pain every 6 hours
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<p><b>You should not save any unused medicines.</b></p> <p>For directions on disposing unused medicines, visit: <a href="https://www.michigan.gov/deqdrugdisposal">https://www.michigan.gov/deqdrugdisposal</a>.</p>		<ul style="list-style-type: none"> <li>• Opioid medications (Tylenol #3, Vicodin, Norco, Percocet) are not generally recommended as they usually don't treat dental pain well. Opioids have more side effects, including the potential for addiction.</li> <li>• For the first day, take your pain medicine every 6 hours, then take only as needed.</li> <li>• Keep track of your pain over the next 2-3 days. Keeping track of your pain level will help your dentist to determine the need for antibiotics, additional pain medication or dental treatment.</li> </ul>						
<p> <b>michigan dental ASSOCIATION</b> YOUR CONNECTION TO ORAL HEALTH™</p> <p> <b>MARR</b> Michigan Antibiotic Resistance Reduction Coalition More info @ <a href="https://mi-marr.org">https://mi-marr.org</a></p>		<p>© MARR   version 10-2020</p>						



## Antibiotic Stewardship (Continued from Page 43)

would use a Delayed Prescribing Tool similar to that available from the CDC for the management of respiratory tract infections. Another 73 (22%) indicated that they would consider using the tool, but some already practiced delayed prescribing in a variant manner. Many of the 63 (19%) who indicated they would not use the tool stated that they had concerns about patient compliance and would prefer that the patient contact the dental office if their symptoms worsened.

This tool also emphasizes appropriate antibiotic use guidelines within the ADA recommendations. For example, if the antibiotic prescription is filled, the patient is advised to discontinue taking the antibiotic 24 hours after pain has resolved. In an effort to address the growing crisis of commu-

nity-associated *Clostridioides difficile* diarrhea, patients are cautioned to contact their primary care provider if they experience three or more loose stools per day.

Feedback regarding the delayed prescribing tool received to date has been positive. In a general dental setting, it was felt that the tool would be very helpful in communicating a consistent message by all office personnel. However, at an inner-city clinic where patients may present with systemic signs and symptoms of infection, dentists shared that delayed antibiotic prescribing would most likely not be implemented. However dental providers felt they would use the tool to communicate information regarding pain management.

Notepads of the tool containing 25 sheets (4-inches-by-6-inches) are available free-of-charge by emailing [info@mi-marr.org](mailto:info@mi-marr.org).

### Summary

Delayed antibiotic prescribing is a

method whereby a prescription is issued by a health care professional (a dentist) for use by the patient at a later date if their symptoms do not improve. The delayed prescribing tool presented in this article is one antimicrobial stewardship practice aimed at limiting unnecessary antibiotic prescriptions, and reducing adverse effects and drug-resistant bacteria. The use of this form will enhance patient education, ensure dental team members are communicating consistent messaging, ensure that antibiotics are taken only when needed, and will deliver guidance on the management of oral pain. ●

### References

1. Fluent MT, Bailey EM. Antibiotic stewardship in dentistry: opportunities and challenges. *J Mich Dent Assoc* 2019;Oct:40-44
2. Fluent MT, Bailey EM. Antibiotic guidelines for dentistry: what, when, why, and how to prescribe. *J Mich Dent Assoc* 2020;Aug:28-37.
3. Lockhart PB, Tampi MP, Abt E et al. Evidence-based clinical practice guideline on antibiotic use for the urgent management of pulpal- and periapical-related dental pain and intraoral swelling. *J Am Dent Assoc*. 2019;150:906-921
4. Fleming-Dutra KE, Hersh AL, Shapiro DJ et al. Prevalence of inappropriate antibiotic prescriptions among US ambulatory care visits, 2010-2011. *JAMA*. 2016;315(17):1864-1873.
5. Suda, KJ, Calip GS, Zhou J. Assessment of the appropriateness of antibiotic prescriptions for infection prophylaxis before dental procedures, 2011 to 2015. *JAMA Network Open*. 2019;2(5):e193909.
6. Spurling GKP, Del Mar CB, Dooley L, Foxlee R, Farley R. Delayed antibiotic prescriptions for respiratory infections. *Cochrane Database of Systematic Reviews* 2017, Issue 9.

### About the Authors

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