Date Prepared: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Prepared by: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Background:**

Antibiotic resistance is a major public health threat with resistant infections occurring in approximately 2.8 million people in the US each year. Antibiotic use and overuse are the primary reasons for the development of antibiotic resistance, adverse events, increased opportunistic infections such as *Clostridioides difficile* infection (CDI), and increased hospitalization, healthcare costs, and deaths. Dentists generate approximately 11% of the antibiotic prescriptions for humans amounting to over 25 million prescriptions annually, and studies show the majority of dental antibiotic prescriptions are inappropriate or not indicated.1

Prevention of antibiotic resistance starts with evidence-based infection prevention and control (IPC) procedures and is followed by appropriate antibiotic prescribing. While infection prevention and control aim to reduce the risk of spreading infections to protect healthcare workers and patients, antibiotic stewardship programs measure and improve how antibiotics are prescribed by clinicians and used by patients so that they are only prescribed when needed. Stewardship efforts can minimize mis- or delayed diagnoses, and ensure that the right drug, dose, and duration are selected when an antibiotic is needed. Dental infection prevention and control and antibiotic stewardship programs work synergistically to improve health and minimize harm to patients, the oral healthcare team, and the community at large.

**Purpose:**

This Standard Operating Procedure (SOP) provides step-by-step instructions on how to implement an antibiotic stewardship program for our facility. The CDC Core Elements for antibiotic stewardship in outpatient settings will provide the framework for this SOP.2

**Policy:**

It is the policy of our facility to be consistent with *CDC Core Elements for Antibiotic Stewardship in Outpatient Settings* including the following four actions:

1. Making a public commitment to demonstrate dedication and accountability for optimizing antibiotic prescribing and patient safety.
2. Taking action to implement policy and practices to improve antibiotic prescribing including the implementation of chairside tools for prescribing.
3. Tracking and reporting prescribing practices and offering regular feedback to clinicians, or having clinicians self-assess their antibiotic prescribing practices.
4. Providing education and expertise to dentists, team members, and patients ensuring access to needed expertise for optimal antibiotic prescribing.

It is the policy of our facility to prescribe in concordance with current guidelines to include but are not limited to:

* ADA Clinical Practice Guideline for the Urgent Management of Dental Pain and Swelling3
* ADA and AHA Guidelines for Antibiotic Prophylaxis for Prevention of Infective Endocarditis4
* AAOS Clinical Practice Guideline for the Prevention of Total Hip and Knee Arthroplasty Periprosthetic Joint Infection in Patients Undergoing Dental Procedures5

**Scope:**

These procedures apply to dentists and all dental team members.

**Acronyms:**

* ADA: American Dental Association
* AHA: American Heart Association
* AAOS: American Academy of Orthopaedic Surgeons
* ADS: Association for Dental Safety
* CDC: Centers for Disease Control and Prevention
* CDI: *Clostridioides difficile* infection
* CHARM: Collaboration to Harmonize Antimicrobial Registry Measures
* CHD: Congenital heart disease
* DCDT: Definitive Conservative Dental Treatment. Examples include pulpectomy, pulpotomy, non-surgical root canal, incision and draining of abscess.
* PAAT: Penicillin Allergy Assessment Tool
* PARTI: Penicillin Allergy Reassessment for Treatment Improvement
* PCP: Primary Care Provider

**Action Items:**

1. **Make a commitment**

Dentists and team members will: (check all that apply):

* Identify a team member to be our “stewardship champion.”

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Display posters in the reception room and/or operatories demonstrating our team commitment to the responsible use of antibiotics.
* Update facility website with our stewardship policies.
* Provide newsletters and/or social media to promote updates on our stewardship practices to patients.
* Include stewardship expectations and evaluation measures in job descriptions for dental team members.
* Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Take Action:** Follow evidence-based guidelines and best practices for prescribing.

* Regarding antibiotic prophylaxis, dentists will, and dental team members will be aware of, the following:
* Prescribe premedication for a relatively small subset of patients to prevent infective endocarditis, per the ADA and AHA guidelines. These patients must have a high-risk condition while undergoing an invasive dental procedure to justify or warrant antibiotic prophylaxis. These include patients with:
  + Prosthetic cardiac valve or prosthetic material used for valve repair.
  + Previous history of infective endocarditis.
  + Cardiac transplant recipients who develop valvopathy.
  + Patients with certain congenital heart diseases including:
    - Unrepaired cyanotic CHD including palliative shunts and conduits,
    - Repaired CHD defect with prosthetic material during first six (6) months after procedure, and
    - Repaired CHD with residual defects.
* For patients with prosthetic joints, prescribe per AAOS guidelines.
  + Prophylaxis is not generally recommended to prevent prosthetic joint infection.
* Antibiotic prophylaxis should be taken 30-60 minutes prior to a dental procedure if indicated. 6
* Antibiotics may be administered up to two (2) hours after the procedure only if a patient forgets to take their pre-medication. Consistently administering pre-medication after the procedure is sub-optimal.6
* If a patient is already taking an antibiotic and requires premedication, a drug should be selected from a different classification of antibiotics.
* When considering prescribing antibiotics in dentistry, dentists will, and dental team members will be aware of the following:
* Ensure patients receive Definitive Conservative Dental Treatment (DCDT) to cure their infection.
* Avoid prescribing for pain only; consider using delayed prescribing when DCDT is not immediately available.
* Prescribe antibiotics for a maximum duration of 7 days.
  + Dentist or assigned team member to place follow-up call to patient after 72 hours.
  + Advise patients to discontinue their antibiotics 24-48 hours after resolution of symptoms. Shorter durations of therapy contribute less to antibiotic resistance.
* Advise patients to manage pain with combination therapy that includes over-the-counter analgesics (acetaminophen and ibuprofen).
* Screen for risks for *Clostridioides difficile* infection (CDI):
* Prior to prescribing an antibiotic, dentists will ask the patient if they have had a history of CDI diarrhea.
* If a patient has a history of CDI, consult with a PCP or an infectious disease pharmacist prior to prescribing.
* Avoid prescribing clindamycin due to concerns about high risk of CDI associated with clindamycin use.
* If a patient reports >3 loose bowel movements per day, dentists and/or team members will instruct the patient to:
* Discontinue their antibiotic.
* Call their primary healthcare provider or report to an emergency room.
* Not take over-the-counter anti-diarrheal medications.
* When a patient reports having a penicillin allergy, dentists and/or dental team members will further assess:
* What medication was taken when the reaction occurred?
* What was the severity of the reaction?
* How long ago the reaction occurred?
* How was the reaction managed?
* What was the outcome of the reaction?
* Whether the patient should be referred for penicillin allergy assessment. The practice may want to consider using the [Penicillin Allergy Assessment Tool (PAAT)](https://www.myads.org/assets/docs/resources/antibiotic-stewardship/Penicillin-Allergy%20Assessment%20Tool.pdf).
* If the patient has been cleared of having a penicillin allergy, they may be advised to use the [PARTI Tool](https://www.myads.org/assets/docs/resources/antibiotic-stewardship/Penicillin%20Allergy%20Reassesment%20for%20Treatment%20Improvement%20%28PARTI%29%20Tool.pdf) to facilitate delabeling of penicillin allergies across all healthcare settings including dental offices and pharmacies.
* For patients with a penicillin allergy, dentists will:
* Prescribe in concordance with:
  + *2019 ADA Guidelines for Urgent Management of Dental Pain and Swelling* for patients with penicillin allergies.
  + ADA, AHA and AAOS guidelines for antibiotic prophylaxis in patients with penicillin allergies.
* Prescribe first-line antibiotics when possible.
* Miscellaneous action items for the dentists and/or team members may also include:
* Shared decision making with patient.
* Communication training on antibiotic stewardship topics.
* Placing clinical decision-making tools in operatories.
* Maintaining a list of consultants to confer with on difficult cases.
* For patients with pain only, using delayed prescribing when DCDT is not immediately available.
* Discussion of difficult cases at study clubs.

1. **Tracking and Reporting**

* To evaluate antibiotic prescribing practices, dentists and/or team members will review records at baseline and annually. The following items will be reviewed and/or assessed:
* Medical history:
  + Reported antibiotic allergies
  + Complications when taking an antibiotic
  + Does the patient have a history of *Clostridioides difficile* infection?
    - If yes, further assess how C. diff was treated, severity of infection, outcome of infection, and if infection recurred.
* Diagnosis: Was a definitive diagnosis reached?
* Was DCDT performed?
* Stewardship review:
  + Were antibiotics prescribed in concordance with guidelines?
    - If not, was the rationale for deviation documented in the patient’s dental record?
  + Were dose, duration, and frequency in concordance with guidelines?
  + Were patients with penicillin allergy referred to their medical provider for potential allergy de-labeling if indicated?
* Alternatively, dentists and/or team members may collaborate with an organization to help track and report their prescribing practices, allowing them to benchmark versus other similar practices. An example includes:
* Collaboration to Harmonize Antimicrobial Registry Measures (CHARM): <https://www.ferris.edu/cape/charm.htm>
* Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Education and expertise to dentists, team members, and patients**

Dentists and team members will:

* Participate in continuing education on antibiotic stewardship annually.
* Participate in quality improvement activities to track and improve antibiotic prescribing.
* Stay up to date on current guidelines for antibiotic use.
* Incorporate antibiotic stewardship policies, procedures, and resources into the facility-specific infection control manual.
* Be educated on current guidance in antibiotic prescribing including:
* Patients reporting a penicillin allergy should be further assessed for their allergy.
* Patients should be assessed for risk of *Clostridioides difficile* infection.
* Antibiotics should only be prescribed when necessary.
* Antibiotics do not always need to be taken immediately.
  + - In certain scenarios, antibiotics may be taken when symptoms worsen.
* Patients require definitive care to cure oral infections.
  + - Antibiotics will not cure an infection.
* Antibiotics should be prescribed for the shortest duration possible.
* Pain should be managed with over-the-counter medications.

Dentists and/or dental team members will educate **patients** on the following (if/when applicable):

* Antibiotics will not cure an infection. Definitive care will cure an infection.
* An antibiotic will not treat a viral or fungal infection.
* Certain infections will get better without an antibiotic.
* Pain should be managed with over-the-counter medications.
* Your dentist will weigh the risks (potential harm) vs. benefits of antibiotics.
  + - Antibiotics can contribute to the development of antibiotic resistance.
* Antibiotics will only be prescribed when necessary.
* Antibiotics do not always need to be taken immediately. In certain scenarios, antibiotics may be taken when symptoms worsen.
* Take your antibiotic exactly as prescribed.
* Talk to your dentist if any side effects develop.
* If you have >3 loose bowel movements per day:
  + - Discontinue your antibiotic.
    - Call your primary healthcare provider and dentist.
    - Do not take over-the-counter anti-diarrheal medications.
* Leftover antibiotics (or any medication) should not be flushed down the toilet.
  + - Medications may be safely disposed in a community or pharmacy drug takeback program.
    - Medications may be mixed with unpalatable substances such as dirt, cat litter, or used coffee grounds, placed in a sealed plastic bag, and thrown in household trash with all personal information scratched out or removed.
  + Do your best to stay healthy and keep others healthy.

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**Downloadable Guidelines, Documents and Training Opportunities Available at:**

http://www.myads.org/antibioticstewardship

1. [Prescriber](https://www.myads.org/antibiotic-stewardship-for-prescribers) Evidence, Guidance and Tools and Continuing Education
2. [Dental Team](https://www.myads.org/antibiotic-stewardship-for-the-dental-team) Resources and Continuing Education
3. [Policy Maker](https://www.myads.org/antibiotic-stewardship-for-policymakers) Policy Statements, National and Regional Toolkits, State Highlights and Continuing Education
4. [Patient](https://www.myads.org/antibiotic-stewardship-for-patients) Information and Best Practices

**Disclaimer:**

This template is intended to offer general guidance to dental prescribers, the dental team and policy makers on how to write a standard operating procedure for antibiotic stewardship in oral healthcare settings. The information contained herein should not be construed as legal advice and may not be substituted for the legal advice of the dental practice’s own legal counsel.

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