

**Antibiotic Stewardship in Dentistry**

- **General antibiotic prescribing**
  - **U.S. outpatient antibiotic prescribing**
    - **Health care providers prescribed an ~263 MM courses of antibiotics (2011)**
    - **Most frequently prescribed**
    - **Estimated 30%-50% of prescribed antibiotics are not optimally prescribed or unnecessary**
- **Antibiotic prescribing in dentistry**
  - **Dentists prescribe ~10% of antibiotic courses in community**
  - **Most frequently prescribed**
  - **Clinical rationale**
- **Unintended consequences of antibiotic prescribing**
  - **Antibiotic resistance global health threat**
  - **Est. 2MM infections due to antibiotic resistant bacteria annually**
  - **23,000 deaths**
  - **Adverse drug events**
    - **ED visits**
    - **C. difficile infections (CDI)**
    - **Antibiotic allergy**
    - **Microbiome disruption**
- **Antibiotic stewardship in dentistry**
  - **ADA Guidelines (2004)**
  - **ADA participation in 2015 White House Forum on Antibiotic Stewardship**
  - **Suggestions to support stewardship**
  - **ADA has adopted evidence-based approach to guideline development**
- **Status of antibiotic prophylaxis for prosthetic joint replacement patients – Where are we?**
  - **Total joint arthroplasty**
    - **Projected annual rates (est. 2030)**
    - **7MM Americans living with hip or knee replacements**
    - **Revision rates**
  - **Prosthetic joint infections**
    - **Rates**
    - **Prevention**

- Evolution of AP guidance
  - 1997 Advisory Statement “Antibiotic Prophylaxis (AP) for Dental Patients with Total Joint Replacement (TJR)”
    - ADA and AAOS
    - Major issues
    - Bacteremia and PJI risk
    - Guidelines supplement clinical judgement
    - Lack of supporting scientific evidence
    - Legal commentary
  - 2003 Advisory Statement
    - 1997 Advisory Statement update
      - Minor modifications/emphasis
      - AP recommendations
  - 2009 AAOS Information Statement “Antibiotic Prophylaxis for Bacteremia in Patients with Joint Replacements”
    - Educational tool developed independently by AAOS
      - Recommended life-time prophylaxis
      - Substantial criticism from dentistry
  - 2012 AAOS/ADA Clinical Practice Guideline “Prevention of Orthopaedic Implant Infection in Patients Undergoing Dental Procedures”
    - Collaborative effort
    - Formal evidence-based guidelines
    - Educational tool for clinicians
    - ADA recognition practitioners needed improved clinical guidance
  - 2015 ADA Evidence-based Clinical Practice Guideline for Dental Practitioners
    - ADA convened expert panel
    - Evidence review
    - No AAOS endorsement
    - Recommendations
  - 2016 AAOS/ADA Appropriate Use Criteria (AUC)
    - Web-based application/decision support tool
      - Identify indications for at-risk patients
      - Antibiotic prophylaxis
      - Practical clinical scenarios
- Conclusion
  - Antibiotic prophylaxis issue is unresolved
  - Guidelines will continue to evolve