Dental Procedures and Prosthetic Joint Infection

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Learning Objectives

• What are clinical practice guidelines and why do we need them
• What are the current guidelines for dental procedures and PJI
• What is an appropriate use criteria (AUC) and what are the findings for dental procedures and PJI
STUDY DESIGNS

Diagram showing the hierarchy of study designs:
- Ideas, opinions, editorials, anecdotal
- Case series, Case reports
- Cross-sectional studies
- Case-Control
- Cohort studies
- RCT's
- Systematic Reviews, Meta-analysis
Evidence Pyramid

More reliable and less bias & confounding studies include:

- Systematic Reviews
- Randomized Controlled Trials
- Cohort Studies
- Case-Control Studies
- Case Series, Case Reports
- Editorials, Expert Opinion

Cross-sectional studies?
Research Design

• Systematic Reviews/Meta-analysis
• Randomized Controlled Trials
• Cohort
• Case-Control
• Cross-sectional

• Case Series
• Narrative Review
• Opinion
Research Design

Interventional design

• Randomized Controlled Trials

Observational designs

• Cohort Study
• Case-Control Study
• Cross-sectional Study

Why do these designs??
Beta-carotene & cardiovascular mortality

Cohorts
- Male health workers, USA
- Social insurance, men, Finland
- Social insurance, women, Finland
- Male chemical workers, Switzerland
- Hyperlipidaemic men, USA
- Nursing home residents, USA

Trials
- Male smokers, Finland
- Skin cancer patients, USA
- (Ex)-smokers, asbestos workers, USA
- Male physicians, USA

Trials combined

Relative risk (95% CI)
Sir Austin Bradford Hill  
Sir Richard Doll
Dental Procedures as Risk Factors for Prosthetic Hip or Knee Infection: A Hospital-Based Prospective Case-Control Study

Elie F. Berbari,1 Douglas R. Osmon,1 Alan Carr,2 Arlen D. Hanssen,3 Larry M. Baddour,1 Doris Greene,1 Leo I. Kupp,5 Linda W. Baughan,5 W. Scott Harmsen,4 Jayawant N. Mandrekar,4 Terry M. Therneau,4 James M. Steckelberg,1 Abinash Virk,1 and Walter R. Wilson1

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(See the editorial commentary by Zimmerli and Sendi, on pages 17–9.)

Background. The actual risk of prosthetic joint infection as a result of dental procedures and the role of antibiotic prophylaxis have not been defined.

Methods. To examine the association between dental procedures with or without antibiotic prophylaxis and prosthetic hip or knee infection, a prospective, single-center, case-control study for the period 2001–2006 was performed at a 1200-bed tertiary care hospital in Rochester, Minnesota. Case patients were patients hospitalized with total hip or knee infection. Control subjects were patients who underwent a total hip or knee arthroplasty but without a prosthetic joint infection who were hospitalized during the same period on the same orthopedic floor. Data regarding demographic features and potential risk factors were collected. Logistic regression was used to assess the association of variables with the odds of infection.

Results. A total of 339 case patients and 339 control subjects were enrolled in the study. There was no increased risk of prosthetic hip or knee infection for patients undergoing a high-risk or low-risk dental procedure who were not administered antibiotic prophylaxis (adjusted odds ratio [OR], 0.8; 95% confidence interval [CI], 0.4–1.6), compared with the risk for patients not undergoing a dental procedure (adjusted OR, 0.6; 95% CI, 0.4–1.1) respectively. Antibiotic prophylaxis in high-risk or low-risk dental procedures did not decrease the risk of subsequent total hip or knee infection (adjusted OR, 0.9 [95% CI, 0.5–1.6] and 1.2 [95% CI, 0.7–2.2], respectively).

Conclusions. Dental procedures were not risk factors for subsequent total hip or knee infection. The use of antibiotic prophylaxis prior to dental procedures did not decrease the risk of subsequent total hip or knee infection.

Because of the aging US population, it is estimated that, by 2030, ~4 million total hip or knee arthroplasties will be performed annually in the United States [1]. Although the overall outcome of joint arthroplasty is ex-
Research Design

• Narrative Review
  Broad topic
  Few inclusion criteria
  Susceptible to bias
  Non-reproducible

• Systematic Review
  Narrow topic
  Exhaustive literature search
  Strict inclusion/exclusion criteria
  Reproducible
Getting Research into Clinical Practice
TREATISE OF THE SCURVY.
IN THREE PARTS.
CONTAINING
An inquiry into the Nature, Causes, and Cure, of that Disease.
Together with
A Critical and Chronological View of what has been published on the subject.

By JAMES LIND, M.D.
Fellow of the Royal College of Physicians in Edinburgh.

EDINBURGH:
Printed by Sands, Murray, and Cochran,
For A. Kincaid & A. Donaldson.
MDCCCLIII.
Evidence Pyramid

What should be here?
Clinical Practice Guidelines

- 20 years ago: GOBSAT Guidelines
- EB Guidelines: look for or do a systematic review of the literature
Clinical Practice Guidelines
Definition

- Clinical Practice Guideline: what & why
- Protocol
- Standard of Care
Clinical Practice Guidelines (what?)

- Summarize the evidence (systematic review)
- Provide recommendations (for or against taking an action)
Clinical Practice Guidelines (why?)

• Improve the quality and outcomes of care
• Reduce inappropriate variation in practice
• Promote efficient use of resources
• Inform public policy
Definition

- Clinical Practice Guideline: what & why
- Protocol
- Standard of Care
AAOS-ADA Clinical Practice Guideline Summary

Prevention of Orthopaedic Implant Infection in Patients Undergoing Dental Procedures

Abstract

The Prevention of Orthopaedic Implant Infection in Patients Undergoing Dental Procedures evidence-based clinical practice guideline was codeveloped by the American Academy of Orthopaedic Surgeons (AAOS) and the American Dental Association. This guideline replaces the previous AAOS Information Statement, “Antibiotic Prophylaxis in Bacteremia in Patients With Joint Replacement,” published in 2009. Based on the best current evidence and a systematic review of published studies, three recommendations have been created to guide clinical practice in the prevention of orthopaedic implant infections in patients undergoing dental procedures. The first recommendation is graded as Limited; this recommendation proposes that the practitioner consider changing the long-standing practice of routinely prescribing prophylactic antibiotic for patients with orthopaedic implants who undergo dental procedures. The second, graded as Inconclusive, addresses the use of oral topical antimicrobials in the prevention of periprosthetic joint infections. The third recommendation, a Consensus statement, addresses the maintenance of good oral hygiene.

Overview and Rationale

values when making treatment decisions.

This clinical practice guideline was...
‘The practitioner might consider discontinuing the practice of prescribing prophylactic antibiotics for patient with hip and knee prosthetic joint implants undergoing dental procedures.’
The use of prophylactic antibiotics prior to dental procedures in patients with prosthetic joints

Evidence-based clinical practice guideline for dental practitioners—a report of the American Dental Association Council on Scientific Affairs

Thomas P. Sollecito, DMD, FDS RCSEd; Elliot Abt, DDS, MS, MSc; Peter B. Lockhart, DDS, FDS RCSEd, FDS RCPS; Edmond Truelove, DDS, MSD; Thomas M. Paumier, DDS; Sharon L. Tracy, PhD; Malavika Tampi, MPH; Eugenio D. Beltrán-Aguilar, DMD, MPH, MS, DrPH; Julie Frantsve-Hawley, PhD

ABSTRACT

Background. A panel of experts (the 2014 Panel) convened by the American Dental Association Council on Scientific Affairs developed an evidence-based clinical practice guideline (CPG) on the use of prophylactic antibiotics in patients with prosthetic joints who are undergoing dental procedures. This CPG is intended to clarify the “Prevention of Orthopaedic Implant Infection in Patients Undergoing Dental Procedures: Evidence-based Guideline and Evidence Report,” which was developed and published by the American Academy of Orthopaedic Surgeons and the American Dental Association (the 2012 Panel).

Types of Studies Reviewed. The 2014 Panel based the current CPG on literature search results and direct evidence contained in the comprehensive systematic review published by the 2012 Panel, as well as the results from an updated literature search. The 2014 Panel identified 4 case-control studies.

Results. The 2014 Panel judged that the current best evidence failed to demonstrate an association between dental procedures and prosthetic joint infection (PJI).
‘In general, for patients with prosthetic joint implants, prophylactic antibiotics are **NOT** recommended prior to dental procedures to prevent prosthetic joint infection.’
Dental Procedures as Risk Factors for Prosthetic Hip or Knee Infection: A Hospital-Based Prospective Case-Control Study


Departments of Medicine, Division of Infectious Diseases, 2Department of Infectious Diseases, 3Neurology, 4Orthopedic Surgery, and 5Biostatistics and Epidemiology, Mayo Clinic College of Medicine, Rochester, and 4Department of Periodontics, Burnsville, Minnesota; and 4Department of Endodontics, Virginia Commonwealth University, Richmond, Virginia

(See the editorial commentary by Zimmerli and Sendi, on pages 17–9.)

Background. The actual risk of prosthetic joint infection as a result of dental procedures and the role of antibiotic prophylaxis have not been defined.

Methods. To examine the association between dental procedures with or without antibiotic prophylaxis and prosthetic hip or knee infection, a prospective, single-center, case-control study for the period 2001–2006 was performed at a 1200-bed tertiary care hospital in Rochester, Minnesota. Case patients were patients hospitalized with total hip or knee infection. Control subjects were patients who underwent a total hip or knee arthroplasty but without a prosthetic joint infection who were hospitalized during the same period on the same orthopedic floor. Data regarding demographic features and potential risk factors were collected. Logistic regression was used to assess the association of variables with the odds of infection.

Results. A total of 339 case patients and 339 control subjects were enrolled in the study. There was no increased risk of prosthetic hip or knee infection for patients undergoing a high-risk or low-risk dental procedure who were not administered antibiotic prophylaxis (adjusted odds ratio [OR], 0.8; 95% confidence interval [CI], 0.4–1.6), compared with the risk for patients not undergoing a dental procedure (adjusted OR, 0.6; 95% CI, 0.4–1.1) respectively. Antibiotic prophylaxis in high-risk or low-risk dental procedures did not decrease the risk of subsequent total hip or knee infection (adjusted OR, 0.9 [95% CI, 0.5–1.6] and 1.2 [95% CI, 0.7–2.2], respectively).

Conclusions. Dental procedures were not risk factors for subsequent total hip or knee infection. The use of antibiotic prophylaxis prior to dental procedures did not decrease the risk of subsequent total hip or knee infection.

Because of the aging US population, it is estimated that, by 2030, ~4 million total hip or knee arthroplasties will be performed annually in the United States [1]. Although the overall outcome of joint arthroplasty is ex-

bidity and mortality [2, 3]. The attributable financial cost of management of each episode of PJI is estimated to be 3–4 times the cost of a primary total joint arthroplasty and usually exceeds $50,000 [4].
Table 5. Analysis of Dental Procedures Performed within 6 Months and within 2 Years of Hospital Admission and Risk of Prosthetic Hip or Knee Infection among Case Patients and Control Subjects at the Mayo Clinic, 2001–2006

<table>
<thead>
<tr>
<th>Variable</th>
<th>Case patients (n = 303)&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Control subjects (n = 318)&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Odds ratio (95% confidence interval)&lt;sup&gt;b&lt;/sup&gt;</th>
<th>6 Months</th>
<th>P</th>
<th>2 Years</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low-risk dental procedure&lt;sup&gt;c&lt;/sup&gt;</strong></td>
<td></td>
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<td>Any</td>
<td>192 (57)</td>
<td>161 (47)</td>
<td>1.0 (Reference)</td>
<td>1.0</td>
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<td>1.0</td>
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<tr>
<td>Edentulous</td>
<td>47 (14)</td>
<td>26 (8)</td>
<td>1.8 (0.9–3.7)</td>
<td>.10</td>
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<td>1.7 (0.8–3.4)</td>
<td>.16</td>
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<td>Low-risk procedure without antibiotic prophylaxis</td>
<td>41 (12)</td>
<td>65 (19)</td>
<td>1.1 (0.6–2.1)</td>
<td>.77</td>
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<td>0.6 (0.4–1.1)</td>
<td>.11</td>
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<td>Low-risk procedure with antibiotic prophylaxis</td>
<td>59 (17)</td>
<td>87 (26)</td>
<td>0.7 (0.3–1.5)</td>
<td>.33</td>
<td></td>
<td>0.8 (0.5–1.2)</td>
<td>.29</td>
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<td><strong>High-risk dental procedure&lt;sup&gt;d&lt;/sup&gt;</strong></td>
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<td>116 (34)</td>
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<tr>
<td>Edentulous</td>
<td>47 (14)</td>
<td>26 (8)</td>
<td>1.7 (0.9–3.5)</td>
<td>.13</td>
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<td>1.7 (0.8–3.4)</td>
<td>.16</td>
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<tr>
<td>High-risk procedure, without antibiotic prophylaxis</td>
<td>33 (10)</td>
<td>49 (14)</td>
<td>0.8 (0.4–1.7)</td>
<td>.60</td>
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<td>0.8 (0.4–1.6)</td>
<td>.56</td>
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<td>High-risk procedure, with antibiotic prophylaxis</td>
<td>95 (28)</td>
<td>148 (44)</td>
<td>0.5 (0.3–0.9)</td>
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<td>0.7 (0.5–1.1)</td>
<td>.14</td>
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<td>Variable</td>
<td>No. (%) of case patients</td>
<td>No. (%) of control subjects</td>
<td>Odds ratio^a (95% CI)</td>
<td>P</td>
<td>Overall P</td>
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<td><strong>Preoperative factor</strong></td>
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<td>Body mass index</td>
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<tr>
<td>&lt;25</td>
<td>76 (22)</td>
<td>51 (15)</td>
<td>1.0 (Reference)</td>
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<td>25–30</td>
<td>89 (26)</td>
<td>124 (37)</td>
<td>0.4 (0.3–0.7)</td>
<td>&lt;.001</td>
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<td>31–39</td>
<td>113 (33)</td>
<td>138 (41)</td>
<td>0.5 (0.3–0.7)</td>
<td>&lt;.001</td>
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<td>≥40</td>
<td>61 (18)</td>
<td>26 (8)</td>
<td>1.4 (0.7–2.5)</td>
<td>.32</td>
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<td>Diabetes mellitus</td>
<td>69 (20)</td>
<td>42 (12)</td>
<td>1.8 (1.2–2.8)</td>
<td>.006</td>
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<td>Prior operation on the index joint</td>
<td>130 (38)</td>
<td>86 (25)</td>
<td>1.9 (1.3–2.6)</td>
<td>&lt;.001</td>
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<td>Prior arthroplasty on the index joint</td>
<td>107 (32)</td>
<td>55 (16)</td>
<td>2.4 (1.6–3.5)</td>
<td>&lt;.001</td>
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<td>Immunocompromise^b</td>
<td>208 (61)</td>
<td>149 (44)</td>
<td>2.2 (1.6–3)</td>
<td>&lt;.001</td>
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<td><strong>Operative factors</strong></td>
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<td>ASA score</td>
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<td>&lt;.001</td>
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<td>ASA 1</td>
<td>15 (4)</td>
<td>24 (7)</td>
<td>1.0 (Reference)</td>
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<td>ASA 2</td>
<td>140 (41)</td>
<td>199 (59)</td>
<td>0.9 (0.4–1.8)</td>
<td>.78</td>
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<td>ASA 3</td>
<td>138 (41)</td>
<td>94 (28)</td>
<td>1.7 (0.8–3.6)</td>
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<td>ASA 4</td>
<td>10 (3)</td>
<td>4 (2)</td>
<td>4.9 (0.9–26.2)</td>
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<td>Antibiotic surgical prophylaxis</td>
<td>259 (76)</td>
<td>277 (82)</td>
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<td><strong>Procedure time</strong></td>
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<td>&lt;.001</td>
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<tr>
<td>&lt;2 h</td>
<td>151 (45)</td>
<td>137 (40)</td>
<td>1.0 (Reference)</td>
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<td>≥2 but &lt;3 h</td>
<td>92 (27)</td>
<td>129 (38)</td>
<td>0.6 (0.4–0.9)</td>
<td>.01</td>
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<tr>
<td>≥3 but &lt;4 h</td>
<td>40 (12)</td>
<td>43 (13)</td>
<td>0.9 (0.6–1.5)</td>
<td>.73</td>
<td></td>
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<tr>
<td>≥4 h</td>
<td>46 (14)</td>
<td>17 (5)</td>
<td>2.7 (1.5–5)</td>
<td>.002</td>
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<td><strong>Postoperative factors</strong></td>
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<td>Postarthroplasty wound drainage</td>
<td>89 (26)</td>
<td>5 (1)</td>
<td>18.7 (7.4–47.2)</td>
<td>&lt;.001</td>
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<tr>
<td>Postarthroplasty wound dehiscence</td>
<td>13 (4)</td>
<td>4 (1)</td>
<td>2.5 (0.8–7.7)</td>
<td>.12</td>
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<td>Postarthroplasty wound hematoma</td>
<td>21 (6)</td>
<td>5 (1)</td>
<td>3.5 (1.3–9.5)</td>
<td>.01</td>
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<tr>
<td>Postarthroplasty surgical site infection^d</td>
<td>54 (16)</td>
<td>0 (0)</td>
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<tr>
<td>Postoperative urinary tract infection</td>
<td>17 (5)</td>
<td>6 (2)</td>
<td>2.7 (1.04–7.1)</td>
<td>.04</td>
<td></td>
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<tr>
<td>Distant organ infection ^c</td>
<td>89 (26)</td>
<td>52 (15)</td>
<td>2.2 (1.5–3.25)</td>
<td>&lt;.001</td>
<td></td>
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</tbody>
</table>
Risk factors for PJI

- Post-arthroplasty wound dehiscence
- Post-arthroplasty wound hematoma
- Post-arthroplasty wound infection
Bacteremia

- Do dental procedures produce bacteremia?
- Does oral bacteremia cause pji?
- Effect of ab on bacteremia unknown
- Chewing & tooth brushing cause bacteremia
PJI

• about 1%-2% of joint replacements
• significant cost and morbidity
• usually occur within 1-2 years post surgery
• staph (not strep) is most common pathogen
• if strep, may be spontaneous from poor dentition???
What about harm from antibiotics?

• Resistant strains of bacteria
• Drug allergy
• C. diff infections
• Cost
C. diff infections in US

- 250,000 hospitalized
- 14,000 deaths/year
- $1,000,000,000/year
Management of patients with prosthetic joints undergoing dental procedures

Clinical Recommendation:
In general, for patients with prosthetic joint implants, prophylactic antibiotics are not recommended prior to dental procedures to prevent prosthetic joint infection.

For patients with a history of complications associated with their joint replacement surgery who are undergoing dental procedures that include gingival manipulation or mucosal incision, prophylactic antibiotics should only be considered after consultation with the patient and orthopedic surgeon.* To assess a patient’s medical status, a complete health history is always recommended when making final decisions regarding the need for antibiotic prophylaxis.

Clinical Reasoning for the Recommendation:
- There is evidence that dental procedures are not associated with prosthetic joint implant infections.
- There is evidence that antibiotics provided before oral care do not prevent prosthetic joint implant infections.
- There are potential harms of antibiotics including risk for anaphylaxis, antibiotic resistance, and opportunistic infections like Clostridium difficile.
- The benefits of antibiotic prophylaxis may not exceed the harms for most patients.
- The individual patient’s circumstances and preferences should be considered when deciding whether to prescribe prophylactic antibiotics prior to dental procedures.
CPG Not Being Implemented into Practice
Evidence

- Cochrane: OR sealants = 0.12; RR fluoride = 0.76
- Only 40% of dentists using sealants (Tellez, JADA, 2011)
- Qualitative study on sealants: clinical doubts, reimbursement, mistrust of guidelines (O’Donnell, JADA, 2013)
How are we doing with implementing this CPG?
Implementing PJI CPG

• What harm could it do to give Ab?
• Pt. on Ab pre-med get PJI
• If no benefit, we have to look at other side of ledger which is harm!!
AAOS/ADA AUC

- when to implement
- when evidence is not detailed enough to apply to full range of patients in everyday practice
American Dental Association guidance for utilizing appropriate use criteria in the management of the care of patients with orthopedic implants undergoing dental procedures

Approximately 332,000 primary total hip arthroplasties and 719,000 primary total knee arthroplasties were performed in the United States in 2010; 96% of hip replacement and 98% of knee replacement surgeries were performed on patients 45 years and older.\textsuperscript{1} Reported infection rates for such operations range from 0.8% to 2.2%.\textsuperscript{2-4} Infections can be caused by introduction of microorganisms at the time of surgery, hematogenous seeding, or contiguous spread of infection from an adjacent site.\textsuperscript{2,3} Infections of total joint replacements can result in failure of the initial surgical
Appropriate Use Criteria
For the Management of Patients with Orthopaedic Implants Undergoing Dental Procedures

Adopted by the American Academy of Orthopaedic Surgeons Board of Directors
9/23/2016

Approved by the American Dental Association Council on Scientific Affairs
10/24/2016

AAOS.org  go to  Quality then  AUC
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    *American Dental Association*
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3. Scott S. De Rossi, DMD
   American Dental Association

4. C. Anderson Engh, Jr., MD
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5. Joel Brian Epstein, DMD
   American Dental Association

6. Angela Hewlett, MD
   Society for Healthcare Epidemiology of America

7. Joel M. Laudenbach, DMD
   American Dental Association

8. Lauren L. Patton, DDS
   American Dental Association

9. Thomas M. Paumier, DDS
   American Dental Association

10. Michael P. Rethman, DDS, MS
    American Academy of Orthopaedic Surgeons

11. Scott M. Sporer, MD
    American Association of Hip and Knee Surgeons

12. Mark J. Steinberg, DDS, MD
    American Association of Oral and Maxillofacial Surgeons

13. William C. Watters III, MD
    American Academy of Orthopaedic Surgeons

14. Robert J. Weyant, DMD, DrPH
    American Dental Association
ASSUMPTIONS LIST
Before these AUC are consulted, it is assumed that:

Planned Dental Procedures

- The chance of oral bacteremia being related to joint infections is extremely low, with no evidence for an association.
- Oral bacteremia frequently occurs secondary to activities of daily living such as tooth brushing and eating.
- Virtually all dental office procedures have the potential to create bacteremia.
<table>
<thead>
<tr>
<th>Rating</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-9</td>
<td><strong>Appropriate:</strong> Appropriate for the indication provided, meaning treatment <em>is</em> generally acceptable and <em>is</em> a reasonable approach for the indication and <em>is</em> likely to improve the patient’s health outcomes or survival.</td>
</tr>
<tr>
<td>4-6</td>
<td><strong>May Be Appropriate:</strong> Uncertain for the indication provided, meaning treatment <em>may</em> be acceptable and <em>may</em> be a reasonable approach for the indication, but with uncertainty implying that more research and/or patient information is needed to further classify the indication.</td>
</tr>
<tr>
<td>1-3</td>
<td><strong>Rarely Appropriate:</strong> Procedure is not generally acceptable and is not generally reasonable for the indication. Exceptions should have documentation of the clinical reasons for proceeding with this care option. <strong>Rarely</strong> an appropriate option for management of patients in this population due to the lack of a clear benefit/risk advantage; <strong>rarely</strong> an effective option for individual care plans.</td>
</tr>
</tbody>
</table>
Immunocompromised Status

1. Severely immunocompromised patients include:
   a. Patient with Stage 3 HIV (i.e. AIDS) as defined by the Centers for Disease Control and Prevention (CDC) Guidelines when the immune system becomes severely compromised due to reduced CD4 T lymphocyte counts (<200) or opportunistic infection as defined by CDC, see list of diseases below.
   b. Cancer patient undergoing immunosuppressive chemotherapy with febrile (Celsius 39) neutropenia (ANC <2000) OR severe neutropenia irrespective of fever (ANC <500)
   c. Rheumatoid arthritis with use of biologic disease modifying agents including tumor necrosis factor alpha or prednisone >10 mg per day. Methotrexate, Plaquenil not considered immunocompromising agents.
   d. Solid organ transplant on immunosuppressants
   e. Inherited diseases of immunodeficiency (e.g., congenital agammaglobulinemia, congenital IgA deficiency)
   f. Bone marrow transplant recipient in one of the following phases of treatment:
      i. Pretransplantation period
      ii. Preengraftment period (approximately 0-30 d posttransplantation)
      iii. Postengraftment period (approximately 30-100 d posttransplantation)
      iv. Late posttransplantation period (≥100 d posttransplantation) while still on immunosuppressive medications to prevent GVHD (typically 36 months post transplantation) (see Table reference below)
### III. PATIENT INDICATIONS AND PROCEDURE RECOMMENDATIONS

**INDICATION PROFILE**

**Table 4 Patient Indications and Classifications**

<table>
<thead>
<tr>
<th>Indication</th>
<th>Classification(s)</th>
</tr>
</thead>
</table>
| **Planned Dental Procedure** | a. Dental procedures that do not result in the manipulation of gingival or periapical tissues, or perforation of the oral mucosa  
b. Dental procedures that involve manipulation of gingival tissue or the periapical region of teeth or perforation of the oral mucosa |
<table>
<thead>
<tr>
<th>Immunocompromised Status</th>
<th>a. Not severely immunocompromised</th>
<th>b. Severely Immunocompromised</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetic Glycemic Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. No current or active diabetes diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Active known diabetic, Hemoglobin A1C &lt; 8 or Blood Glucose &lt; 200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Active known diabetic, Hemoglobin A1C ≥ 8 or Blood Glucose ≥ 200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Active known diabetic, Hemoglobin A1C Unknown, Glucose Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>History of periprosthetic or deep prosthetic joint infection of the hip or knee that required an operation:</td>
<td>a. No</td>
<td>b. Yes</td>
</tr>
<tr>
<td>Timing since hip or knee joint replacement procedure:</td>
<td>a. &lt; 1 year</td>
<td>b. ≥ 1 year</td>
</tr>
</tbody>
</table>
### Indication Profile

**Planned Dental Procedure**
- Dental procedures that do not result in the manipulation of gingival or periapical tissues, or perforation of the oral mucosa
- Dental procedures that involve manipulation of gingival tissue or the periapical region of teeth or perforation of the oral mucosa

**Immunocompromised Status**
- Not severely immunocompromised
- Severely Immunocompromised

**Diabetic Glycemic Control**
- No current or active diabetes diagnosis
- Active known diabetic, Hemoglobin A1C < 8 or Blood Glucose < 200
- Active known diabetic, Hemoglobin A1C ≥ 8 or Blood Glucose = 200
- Active known diabetic, Hemoglobin A1C Unknown, Glucose Unknown

**History of periprosthetic or deep prosthetic joint infection that required an operation**
- No history of periprosthetic or deep prosthetic joint infection that required an operation
- History of periprosthetic or deep prosthetic joint infection that required an operation

**Timing since joint replacement procedure**
- < 1 years
- ≥ 1 years

### Procedure Recommendations

- **Rarely appropriate to prescribe prophylactic antibiotics**

  Rarely appropriate to prescribe prophylactic antibiotics
Figure 1. Breakdown of Appropriateness Ratings for Prophylactic Antibiotics

- Rarely Appropriate: 61%
- Maybe Appropriate: 27%
- Appropriate: 12%
Figure 2. Breakdown of Agreement amongst Voting Panel

- Agree: 56%
- Neither: 41%
- Disagree: 3%
Dental Pain

What meds do we give for this???
OPIOIDS

- Codeine
- Oxycodone
- Morphine
- Fentanyl
- Hydromorphone
- Methadone
NNT=1.6
Evidence

Scientific evidence is just one tool an informed dentist uses to arrive at the best treatment decision. But with such a large volume of published studies, how do you easily find the latest evidence? This website is a great place to start your search for systematic reviews, critical summaries, and clinical practice guidelines.
Clinical Practice Guidelines

Clinical practice guidelines include recommendation statements intended to optimize patient care that are informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options. These are the strongest resources to aid dental professionals in clinical decision making and help incorporate evidence gained through scientific investigation into patient care.

The process for developing clinical practice guidelines is described in the ADA Clinical Guidelines Handbook.


On April 27th the Department of Health and Human Services released the U.S. Public Health Service (USPHS) recommendation for fluoride levels in the drinking water for the prevention of dental caries (community water fluoridation). The new recommendation is 0.7 parts per million (mg F/L) and does not vary by ambient temperature.

In 2010, the American Dental Association Council on Scientific Affairs (CSA) released a systematic review and clinical recommendation for the use of dietary fluoride supplements (Rozier RG, et al., Journal of the American Dental Association, 2010; 142(12):1481-9, available here. These recommendations considered the risks and benefits of fluoride intake. Dietary supplements are prescribed by the dentist or physician based on an individual risk assessment, which includes caries status, child age, and overall fluoride exposure (which should consider the fluoride levels of fluoride in drinking water).
Thank You!