

2016

Supplement to
Annual Reports and Resolutions
Volume 1

157th Annual Session
Denver, Colorado
October 20–24, 2016

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American Dental Association
211 East Chicago Avenue
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Board Report 1/ Credentials, Rules and Order

Resolution No. None N/AReport: N/A Date Submitted: July 2016Submitted By: Board of TrusteesReference Committee: N/ATotal Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

REPORT 1 OF THE BOARD OF TRUSTEES TO THE HOUSE OF DELEGATES: ASSOCIATION AFFAIRS AND RESOLUTIONS

Background: This is the first in a series of reports to be presented by the Board of Trustees to the House of Delegates at the 157th Annual Meeting of the American Dental Association.

Appreciation to the Council on ADA Sessions and the 2016 Committee on Local Arrangements: The American Dental Association is pleased to have its 157th Annual Meeting in Denver, Colorado.

The Council on ADA Sessions has created a meeting that lives up to the ADA's reputation for delivering an extraordinary education and exhibition experience. The Board of Trustees wishes to express its sincere gratitude to the Council, and the exceptional leadership of Dr. James H. Van Sicklen, Jr., 2015-2016 council chair and Dr. Sidney R. Tourial, continuing education chair. They have planned and produced not only an innovative continuing education program, but an exhibition that allows dental professionals to experience firsthand the latest in cutting edge dental materials, services and new technologies.

Council Members. Dr. Jeffrey M. Cole (Board of Trustees liaison), Dr. Grace A. Curcuru, Dr. Henry F. (Bud) Evans, III, Dr. Charles B. Foy, Jr., Dr. David J. Fulton, Jr. (2017 CAS chair-designate), Dr. Andrea Janik (2016 NDC liaison), Dr. Raymond A. Jarvis (2018 NDC consultant), Mr. Kyle C. Kirk (2016 ASDA liaison), Dr. Paul F. Kirkegaard, Dr. Gregory LaMorte, Dr. T. Harold Lancaster, Dr. Howard I.A. Lieb, Dr. Calbert M.B. Lum, Dr. C. Roger Macias, Jr., Dr. Karyl C. Patten (2016 CE consultant), Dr. Stephen T. Radack, III, Dr. Andrea Richman, Dr. Karyn L. Stockwell (2017 Atlanta CLA general chair), Dr. Beatriz E. Terry, Dr. Nanette C. Tertel, Dr. Nipa R. Thakkar (2017 NDC consultant), Dr. Douglas A. Wyckoff (2017 chair-designate, continuing education) are all to be recognized for their commendable achievement.

The Board also extends its sincere thanks for those chairpersons who so capably assisted Dr. Rhett L. Murray, general chair of the 2016 Denver Committee on Local Arrangements:

Dr. Kevin Sessa, vice chair; Dr. William Pfeifer, program co-chair; Dr. Larry Weddle, program co-chair; Dr. Jeane Schoemaker, operations co-chair and Dr. Terry Brewick, operations co-chair

Finally, the Board expresses tremendous appreciation to all of the volunteers on the Committee on Local Arrangements for the assistance they provide to the Council in the operation of this annual meeting. The Board recognizes and thanks the Colorado Dental Society and the Metropolitan Denver Dental Society for their contributions to the success of the 2016 Denver Annual Meeting.

Without the wonderful assistance from these individuals and organizations, and their efforts working as a team with the ADA, this annual meeting would not be possible.

Election of Honorary Membership: In accordance with the *Bylaws* which empowers the Board of Trustees to elect members of the Association, the following individuals have been elected to Honorary Membership:

Jens O. Andreasen, D.D.S., Odont. Dr. H.C.
Ms. Grace L. DeShaw-Wilner, CAE
Dr. Mitsuo Okubo

These individuals in various ways have made outstanding contributions to the advancement of the art and science of dentistry or contributions above and beyond expectation to the profession. The Board offers its sincerest congratulations to newest honorary members.

Distinguished Service Award: Established in 1970, the Distinguished Service Award is the highest honor conferred by the Association's Board of Trustees. Each year the Board may select one recipient for the Award. The Board is pleased to announce that the recipient of the 2016 Distinguished Service Award is Dr. Peter E. Dawson.

Peter E. Dawson, D.D.S: Dr. Peter E. Dawson is director of the Dawson Center for Advanced Dental Study, a multidisciplinary center for postgraduate education and clinical research in St. Petersburg, Florida. He also is a member of the advisory faculty of the L.D. Pankey Institute. He also serves as a consultant to the International Journal of Periodontics and Restorative Dentistry.

A graduate of Emory University School of Dentistry, Dr. Dawson is a Fellow of the American College of Dentistry and of the International College of Dentistry. He is past president of the American Academy of Restorative Dentistry, the American Academy of Esthetic Dentistry, and the American Equilibration Society. He has served as a professional lecturer at Georgetown University School of Dentistry and a visiting professor at Emory University School of Postgraduate Dentistry.

Among his many awards are The Achievement and Humanitarian Award for service to mankind through excellence in restorative dentistry (New Orleans Dental Conference); the Thomas P. Hinman Distinguished Service Medal; and the Dean's Award for Special Achievement and the Distinguished Alumni Award (Emory University School of Dentistry).

Dr. Dawson is considered to be one of the most influential clinicians and teachers in the history of dentistry. He authored the bestselling dental text, *Evaluation, Diagnosis and Treatment of Occlusal Problems*, which is published in 13 languages. His latest book is entitled *Functional Occlusion: From TMJ to Smile Design*. He is the founder of the "Concept of Complete Dentistry Seminar Series (SM)" as well as The Dawson Academy. In addition to the numerous awards and special recognitions, Dr. Dawson lectures nationally and internationally.

Retiring Officers and Trustees: The Board of Trustees wishes to express its gratitude to the following officers and trustees for services rendered to the Association during their tenure on the Board: Dr. Thomas W. Gamba, vice president; Dr. Mark R. Zust, trustee, Sixth District; Dr. Joseph P. Crowley, trustee, Seventh District; Dr. James K. Zenk, trustee, Tenth District; Dr. Julian Hal Fair, III, trustee, Sixteenth District; and Dr. Terry L. Buckenheimer, trustee, Seventeenth District.

Appreciation to Employees: The Board of Trustees is pleased to bring to the attention of the House of Delegates 62 members of the Association staff for their years of service.

Sixty Years: Rafael Bowen, ADA Foundation

Forty Years: Tomisena Cole, Administrative Services

Thirty-Five Years: Jessie Elie, Science Institute; Tyree Haden, Finance and Operations; Judith Jakush, Publishing

Thirty Years: Michelle Boyd, Publishing; Rachel Rebeles, Finance and Operations; Esperanza Gonzalez, Education and Professional Affairs; My Tran, Finance and Operations; Thomas Wall, Health Policy Institute

Twenty-Five Years: Marcia McKinney, Education and Professional Affairs; Thomas Spangler, Government and Public Affairs

Twenty Years: April Kates-Ellison, Member and Client Services; Catherine Horan, Education and Professional Affairs; GraceAnn Pastorelli, Practice Institute; Beth Pawlowski, Informational Technology; Drago Skrtic, ADA Foundation

Fifteen Years: Cesar Barradas, Conferences and Continuing Education; Paul Bralower, Practice Institute; Nicole Catral, ADA Foundation; Shelia McDonnell, Information Technology; Spiro Megremis, Science Institute; Rosemary Monehen, Education and Professional Affairs; Cheryl Mezydlo, Member and Client Services; Michael Tiefenthaler, Information Technology; Matthew Warren, Member and Client Services; Jennifer Wolfram, Information Technology

Ten Years: Lisa Brazier, Member and Client Services; Kathleen Dennis, Conferences and Continuing Education; Jennifer Fisher, Government and Public Affairs; Jennifer Garvin, Publishing; Kristi Gingrich, Member and Client Services; Kathleen Hinshaw, Education and Professional Affairs; Janice Kupiec, Government and Public Affairs; Michael Kendall, Legal; Tanya Kinsman, Conferences and Continuing Education; Tammie Lollis, Education and Professional Affairs; Steven Mayerhofer, Information Technology; Christopher Mitchell, Member and Client Services; David Preble, Practice Institute; Kathryn Pulkrabek, Publishing; James Willey, Practice Institute

Five Years: Marcia Cebula, Marketing and Communications; Sharon Clough, Government and Public Affairs; Annie Driscoll, Education and Professional Affairs; Cynthia Fronczak, ADA Foundation; David Halpin, Science Institute; Marjorie Hooper, Education and Professional Affairs; Kelly Hourihan, Conferences and Continuing Education; Sabrina King, Human Resources; Debbie Labinger, Publishing; Janine MacLachlan, Marketing and Communications; Geralyn Novotny, Science Institute; Radina Pugh, Finance and Operations; Parinaz Safavi, Information Technology; Nicholas Salerno, Education and Professional Affairs; Elizabeth Shapiro, Practice Institute; Marko Vujicic, Health Policy Institute; David Waldschmidt, Education and Professional Affairs; Molly Witges, Conferences and Continuing Education; Gene Wurth, ADA Foundation; Robert Zinn, Finance and Operations

Retiring Council and Commission Members: The Board of Trustees wishes to acknowledge with appreciation the service of the following council and commission members.

ACCESS, PREVENTION AND INTERPROFESSIONAL RELATIONS

Yasmi O. Crystal, New Jersey
G. Lewis Mitchell, Jr., Alabama
Cesar R. Sabates, Florida
Cheryl D. Watson-Lowry, Illinois
Mary Ellen Wynn, Ohio

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Raymond K. Martin, Massachusetts

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PROGRAMS**

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Patrick M. Grogan, Washington D.C.
David E. Houten, Washington
Paul R. Miller, Florida
Eric L. Shirley, Pennsylvania

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William L. Ingram, Alabama
Nicole Stachewicz Johnson, Pennsylvania
Gregory J. Pohl, Ohio
K. Drew Wilson, New Hampshire

NEW DENTIST

Eric T. Childs, Wisconsin
Christopher M. Hasty, Georgia
Rachel Hymes, Tennessee
Andrea K. Janik, Texas
Ryan L. Ritchie, Minnesota

SCIENTIFIC AFFAIRS

Elliot Abt, Illinois
Robert G. Hale, California
Douglas A. Young, California

1 **ADA Institute for Diversity in Leadership**

2 **Program Aims:** The 2002 ADA House of Delegates approved the ADA Board's proposal for an ADA
3 leadership institute designed for:

- 4 • Building lifetime relationships with minority dentists;
- 5 • Mentoring promising leaders with potential to impact diverse communities; and
- 6 • Strengthening alliances with stakeholder institutions, including dental leaders, industry, public and
7 governmental communities of interest.

8 **Leadership Development:** During their year-long program, Institute participants have faculty seminars
9 at ADA Headquarters, conference calls with faculty and advisors, and guided experience with individual
10 leadership projects for their dental societies or other community organizations. Faculty are from
11 Northwestern University's Kellogg School of Management and Duke University's Fuqua School of
12 Business. (The Kellogg School is not connected with the W.K. Kellogg Foundation.) ADA Leadership
13 Institute videos on ADA CE Online are also a resource. An ADA Connect forum also serves the Institute
14 community.

15 **Enrollment:** Since 2003, the program has admitted 176 dentists (including one dentist sponsored by the
16 Asociación Dental Mexicana). In 2016, the ADA Board of Trustees admitted the following new class as
17 recommended by the Board's Diversity and Inclusion Committee from a competitive field of applicants:

18 Alamwala, Mandeep, Washington
19 Kim, Mina C, New York
20 Mazariegos, Stephanie, Florida
21 Smith, Carmen, Texas
22 Brown, Carolyn, South Carolina
23 Kennedy, Erinne, Maryland
24 Pendurkar, Shakalpi, California
25 Aguirre, Luz Marina, New York
26 Brandon Abbatangelo, Tina, Nevada
27 Pothier, Rosa, Idaho
28 Ballentine Norris, Rhoda-LeAnn, Georgia
29 Watts, Yokeca, Alabama
30 Aguilos, Michelle, Texas
31 Patel, Sneha, Oklahoma
32 Fukuoka, Brooke, Idaho
33 Fennell Dempsey, Renee, Pennsylvania

34 **Sponsorship:** The ADA Institute for Diversity in Leadership is made possible through the generous
35 support of Henry Schein, Inc. and Procter & Gamble.

36 **Alumni Paths:** Institute alumni have gone on to serve as volunteer leaders at the local, state and
37 national levels.

- 38 • At the national level, service has included:
 - 39 ○ ADA Second Vice President, the ADA Strategic Planning Committee, Council on
 - 40 Membership, New Dentist Committee, Board of Trustees Standing Committee on
 - 41 Diversity and Inclusion, ADA House of Delegates, and ADA Success Program speakers.
 - 42 ○ Officers and leaders at the national levels of the Society of American Indian Dentists,
 - 43 National Dental Association, Hispanic Dental Association, and American Association of
 - 44 Women Dentists.

- With a variety of state and local dental societies, Institute alumni have served as council members and chairs, as board members, and as House delegates at the state level. In the Institute's 2016 alumni survey, alumni volunteered to share expertise with dental societies on a wide range of topics in strategic planning, membership development, continuing education, mentoring for students and new dentists, government affairs, access, prevention, and dentists' collaborating with physicians and nurses.
- In 2016, ten alumni took part in the ADA Washington Leadership Conference.
- Over the past several years, alumni have mobilized a growing number dentists from across the country for annual events to serve U.S. military veterans.
- Alumni have also served on boards of community organizations.
- In the 2016 alumni survey, 98% reported their Institute experience as valuable or very valuable in their association work, with four-out-of-five reporting very valuable.

Response to 2015 Resolutions

Seating of Constituent and Component Society Executive Directors in the Alternate Delegate Section of the American Dental Association House of Delegates: In response to Resolution 48H-2015 the Association has implemented this resolution by extending additional passes through the districts for distribution to component executive directors/secretaries. Given finite floor capacity, five additional passes are being offered automatically and districts needing more are asked to make that request through the ADA executive offices. It is expected that additional passes will be available to satisfy those requests.

48H-2015. Resolved, that the Association provide component executive directors / secretaries seats in the House alternate delegate section as space is available, and be it further

Resolved, that the Association consider expanding the number of seats for component executive directors / secretaries in light of floor capacity, if necessary.

BOARD RECOMMENDATION: Vote Yes to Transmit.

BOARD VOTE: UNANIMOUS* (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO BOARD DISCUSSION)

***Dr. Gamba was not in attendance.**

Resolution No. 15-17 NewReport: Credentials, Rules and Order Date Submitted: July 2016Submitted By: Standing Committee on Credentials, Rules and OrderReference Committee: N/ATotal Net Financial Implication: None Net Dues Impact: _____

Amount One-time _____ Amount On-going _____ FTE _____

ADA Strategic Plan Objective: None

How does this resolution increase member value: Not Applicable

1 REPORT OF THE STANDING COMMITTEE ON CREDENTIALS, RULES AND ORDER

2 Background: The Standing Committee on Credentials, Rules and Order of the House of Delegates is
3 charged by the ADA *Bylaws*, Chapter V, HOUSE OF DELEGATES, Section 140Bb, with the following
4 duties:

5 b. Duties. It shall be the duty of the Committee (1) to record and report the roll call of the House of
6 Delegates at each meeting; (2) to conduct a hearing on any contest regarding the certification of a
7 delegate or alternate delegate and to report its recommendations to the House of Delegates; (3) to
8 prepare a report, in consultation with the Speaker and Secretary of the House of Delegates, on
9 matters relating to the order of business and special rules of order; (4) to consider all matters referred
10 to it and report its recommendations to the House of Delegates.

11 In accordance with its duties, the Committee submits the following report.

12 **Minutes of the 2015 Session of the House of Delegates:** The minutes of the 2015 session of the
13 House of Delegates have been posted in the HOD Supplemental Information library on the House of
14 Delegates community of ADA Connect.

15 Questions or corrections regarding the minutes may be forwarded to Kyle Smith, manager, House of
16 Delegates at smithk@ada.org. The Committee presents the following resolution for House action.

17 **15. Resolved,** that the minutes of the 2015 session of the House of Delegate be approved.

18 **Adoption of Agenda and Order of Agenda Items:** In response to Resolution 98H-2015, which modifies
19 the House of Delegates schedule to eliminate the fourth meeting, the 2016 House of Delegates will
20 adjourn after the third meeting on Monday, October 24. The Committee has examined the agenda for the
21 meeting of the House of Delegates prepared by the Speaker and Secretary of the House. Accordingly,
22 the Committee recommends adopting the agenda as the official order of business for this session. The
23 Committee also recommends that the Speaker of the House be allowed to rearrange the order of the
24 agenda as deemed necessary to expedite the business of the House.

25 **16. Resolved,** that the agenda as presented in the *2016 Manual of the House of Delegates and*
26 *Supplemental Information* be adopted as the official order of business for this session, and be it
27 further

28 **Resolved,** the Speaker is authorized to alter the order of the agenda as deemed necessary in order
29 to expedite the business of the House.

To maintain a quorum, members of the House of Delegates should plan to stay in Denver until close of business Monday, October 24, which could be later than 5:00 p.m.

Referrals of Reports and Resolutions: A standing rule of the House of Delegates directs that prior to each session of the House, the Speaker shall prepare a list of recommended referrals to reference committees with the list to be available at the opening meeting of the House and be subject to amendment or approval on vote of the House of Delegates.

This preliminary list of referrals (circulated in the form of an All Inclusive General Index to the resolution worksheets) will be provided with the second posting of resolution worksheets in late-September and updated and posted again on Thursday, October 20. The Speaker will announce additional referrals during the first meeting of the House of Delegates. A complete list of referrals by reference committee, in the form of an agenda, will be available in the reference committee hearing rooms on Saturday morning, October 22.

17. Resolved, that the list of referrals recommended by the Speaker of the House of Delegates be approved.

The American Institute of Parliamentarians Standard Code of Parliamentary Procedure: In 2011, the House of Delegates adopted Resolution 56H-2011 (*Trans.*2011:541) which identifies the current edition of the *American Institute of Parliamentarians Standard Code of Parliamentary Procedure (AIPSC)* as the document that governs the deliberations of the House of Delegates in all cases in which they are applicable and not in conflict with the standing rules or the *ADA Bylaws*. This change took effect upon the release of the current edition of the *AIPSC Standard Code*, which occurred in May 2012.

Annual Reports and Resolutions, Manual of the House of Delegates and Resolution Worksheets: The publication, *Annual Reports and Resolutions, 2016* will be posted in September on ADA Connect and ADA.org and can be accessed through the following link: <http://www.ada.org/en/member-center/leadership-governance/historical-publications-policies>.

In addition, the first set of resolution worksheets will be posted on ADA Connect and ADA.org by the end of day, Friday, August 5. Per 74H-2012, effective in 2013, all materials of the House of Delegates are provided in an electronic format only, with the exception of reference committee reports and agendas; no paper copies of worksheets will be distributed.

The second set of resolution worksheets will become available shortly after the Board of Trustees' September 25-27 session. The second set of resolution worksheets will be posted on ADA Connect and ADA.org by end of day, Friday, September 30.

In advance of the 2016 session, members of the House of Delegates are advised to download to their laptop or other electronic device copies of all pertinent meeting materials.

The *Manual of the House of Delegates and Supplemental Information* has been developed to complement the resolution worksheets. This document incorporates the "Rules of the House of Delegates" and all pertinent meeting information (*i.e.*, House agendas, members of the Standing and Reference Committees, reference committee hearing schedule, and schedule of the district caucuses). Any modifications to the *Manual* and specifically the Standing Rules of the House of Delegates reflect either actions of the previous House of Delegates, details regarding dates, times and locations of the 2016 meetings, or editorial corrections.

Supplement to Annual Reports and Resolutions is prepared primarily for historical purposes only since it is a compilation of all the reports and resolutions presented to the House of Delegates. This publication will be available online in the first quarter of 2017.

Reference Committees Hearings: The reference committees of the House of Delegates will hold hearings on Saturday, October 22, in various rooms of the Hyatt Regency Denver. The list of reference

committee hearing rooms appears in the *Manual of the House of Delegates and Supplemental Information*.

Saturday, October 22

7:00 a.m. to 9:00 a.m. Committee D (Legislative, Health, Governance and Related Matters)

8:00 a.m. to 10:00 a.m. Committee E (Membership and Related Matters)

9:00 a.m. to 11:00 a.m. Committee C (Dental Education, Science and Related Matters)

10:00 a.m. to 12 p.m. Committee B (Dental Benefits, Practice and Related Matters)

11:00 a.m. to 1:00 p.m. Committee A (Budget, Business and Administrative Matters)

Hearings may continue beyond the scheduled hours if everyone has not had an opportunity to be heard or if the complete agenda has not been covered.

In accordance with the *Manual of the House of Delegates*, section "General Procedures for Reference Committees," any member of the Association, whether or not a member of the House of Delegates, is privileged to attend and participate in the discussion during the reference committee hearings. Nonmembers of the Association are also welcome to attend reference committee hearings provided they identify themselves to the committee. Nonmembers of the Association may participate at hearings only at the invitation of a majority of the reference committee. At reference committees, everyone (individuals/members) will be obligated to disclose any personal or business relationship that they or their immediate family may have with a company or individual doing business with the ADA, when such company is being discussed, prior to speaking on an issue related to such a conflict of interest.

Association staff is available at hearings to provide information requested by members of reference committees or through the Chair by those participating in the hearings.

Reports of Reference Committees: Printed copies of reference committee reports will be made available to the chair of record of each delegation on Sunday, October 23. A sufficient number of copies of each report will be provided for each delegation's delegates, alternate delegates, secretary, executive director, trustee and editor. Reference committee reports will also be posted on ADA Connect and will be available early morning on October 23.

Delegates must bring their copies of reference committee reports to the meetings of the House of Delegates since additional printed copies will be limited. However, if using an electronic version of the reference committee report during the meetings of the House, it is imperative that the documents be downloaded prior to the Monday, October 24 meeting. The Speaker would like to remind everyone that this is a "paperless" House of Delegates, not necessarily a wireless House. Wi-Fi is available in the House of Delegates as a convenience, and advance preparation is extremely important.

Nominations of Officers: The nominations of officers (president-elect and second vice president) will take place at the first meeting of the House on Friday afternoon, October 21. Candidates for elective office will be nominated from the floor of the House by a simple declaratory statement, which may be followed by an acceptance speech not to exceed four minutes by the candidate. Seconding nominations is not permitted.

No additional nominations will be accepted after the Friday afternoon meeting.

Nomination of Trustees: Nominations of members of the Board of Trustees from Districts 6, 7, 10, 16 and 17 will take place at the first meeting of the House. Prior to such nominations, the delegates from each of the districts concerned must caucus for the purpose of determining their nominee or nominees in

accordance with the provisions of Chapter VII, Section 40, of the *Bylaws*. A list of caucus meetings appears in the *Manual of the House of Delegates and Supplemental Information*.

The results of the caucus must be reported to the Secretary of the House of Delegates no later than the opening of the meeting on Friday. In the event of a contested trustee election, candidates for the office of trustee shall be nominated from the floor of the House of Delegates by a simple declaratory statement, which may be followed by an acceptance speech not to exceed four minutes by the candidates from the podium. Seconding nominations is not permitted.

Nominations to Councils and Commissions: The Board of Trustees will present the list of its nominations to councils and commissions in the second set of resolution worksheets posted in late-September. Additional nominations of council and commission members may be made from the floor of the House of Delegates only during the Friday afternoon meeting.

Voting Procedures in the House: The method of voting in the House of Delegates is usually determined by the Speaker who may call for a voice vote, show of hands (voting cards), standing vote, general consent, roll call of the delegations, electronic voting or such other means that the Speaker deems appropriate. The House may also, by majority vote, determine for itself the method of voting that it prefers.

Only votes cast by voting members of the House of Delegates either for or against a pending motion shall be counted. Abstentions shall only be counted in determining if a quorum is present. If the result of a vote is uncertain or if a division is called for, the Speaker may use the electronic voting method or may call for a standing vote. If a standing vote is requested, non-voting members will be asked to leave the delegate seating area. Once the area is clear of all non-voting members, the Speaker will request all delegates in favor of the motion to stand. Beginning with the first row, each person counts off and sits down, with the count running back and forth along the rows in a serpentine fashion. When all who voted in the affirmative are seated, the same is done with the negative vote. The vote will be monitored by the Standing Committee on Credentials, Rules and Order.

In accordance with the ADA *Bylaws* and the House *Manual* proxy voting is explicitly prohibited in the House of Delegates. However, an alternate delegate may vote when substituted for a voting member in accordance with procedures established by the Committee on Credentials, Rules and Order.

Election Procedures: Voting for the elective officers will be conducted in Colorado Convention Center, Room 111, from 4:00 p.m. to 6:00 p.m. on Sunday, October 23. Members should bring their number 6 meeting card and vote early in order to avoid a delay at the voting machines. To expedite the check-in and voting process on Sunday, October 23, it is strongly recommended that any delegation changes be made no later than 2:00 p.m. on Sunday, October 23. Delegate registration hours for Sunday, October 23, at the Hyatt Regency Denver, are from 10:00 a.m. to 2:00 p.m.

The method of voting will be paper ballot. Paper ballots will be locked overnight in a secure location and counted by the Committee on Credentials, Rules and Order the morning of Monday, October 24. Results will be announced at the second meeting, Monday, October 24.

In the event a second balloting is necessary, the number 6 meeting card will be reused. The second balloting will be conducted on Monday, October 24, at a time announced by the Speaker. Voting machines/ballots will be used if a second ballot is needed.

The Standing Committee on Credentials, Rules and Order oversees the confirmation and reporting of election results. The Committee will verify the number of votes received by each candidate prior to the election results being placed in a sealed envelope and transmitted to the Secretary of the House. The Secretary will review and forward the results to the Speaker for announcement. CRO members present during the review of election results will remain in the voting area until the House is informed of the election results. If there are any delays in reporting election results, the Committee chair will immediately notify the Secretary of the delay.

Standing Order of Business—Installation of New Officers and Trustees: The installation ceremony for new officers and trustees will take place at the third meeting of the House of Delegates on Monday, October 24, as the first item of business with the time to be specified by the Speaker of the House of Delegates.

Introduction of New Business: The Committee calls attention to the *Bylaws*, Chapter V, Section 130(Ae) which provides that no new business shall be introduced into the House of Delegates less than 15 days prior to the opening of the annual session, unless submitted by a Trustee District. No new business shall be introduced into the House of Delegates at the last meeting of a session except when such new business is submitted by a Trustee District and is permitted to be introduced by a two-thirds (2/3) affirmative vote of the delegates present and voting. The motion introducing such new business shall not be debatable. Approval of such new business shall require a majority vote except new business introduced at the last meeting of a session that would require a bylaw amendment cannot be adopted at such last meeting. Reference committee recommendations shall not be deemed new business.

Resolutions of Reaffirmation/Commendation: The Committee calls attention to the House rule governing resolutions of reaffirmation or commendation, which states that “Resolutions which (1) merely reaffirm or restate existing Association policy, (2) commend or congratulate an individual or organization, or (3) memorialize an individual shall not be introduced to the House of Delegates” (*Trans.*1977:958).

Explanation of Resolution Number System: Original resolutions are numbered consecutively regardless of whether the source is a council, other Association agency, constituent society, delegate, Board of Trustees or House reference committee. Revisions made by the Board, reference committee or House are considered “amendments” to the original resolution. If amended by the Board, the suffix “B” follows the original resolution number (Res. 24B); if amended by a reference committee, the suffix “RC” follows (Res. 24RC).

If a resolution is adopted by the House, the suffix “H” follows the resolution number (Res.24H). The “H” always indicates that the resolution was adopted.

If a resolution is not adopted or it is referred by the House of Delegates, the resolution number remains the same. For example:

Res. 78B is considered by the House and not adopted, the number remains the same: Res. 78B.

Res. 7RC is considered by the House and referred for study, the number remains the same: Res. 7RC.

If a Board (B) or reference committee (RC) resolution is a substitute for several original resolutions, the Board’s recommended substitute or the reference committee’s recommended substitute uses the number of the first resolution submitted and adds the proper suffix (B or RC). The report will clearly state that the other resolution or resolutions have been considered and are included in the “B” or “RC” resolution. A resolution submitted by an agency other than the Board or a reference committee as a substitute or amendment retains the original resolution number followed by the suffix “S-1” (Res. 24S-1). If two substitute resolutions are submitted for the same original resolution, the suffixes are “S-1” and “S-2” (Res. 24S-1, Res. 24S-2).

Note. If a substitute resolution is received too late to be introduced to the House of Delegates through a reference committee report, the originator of the substitute resolution is responsible for calling it to the Speaker’s attention when the original resolution is being discussed by the House of Delegates.

Dedicated Pro and Con Microphones: To help ensure a balanced opportunity for debate during all House discussions, microphones 1, 3, and 5 will be identified for pro testimony and microphones 2, 4, and 6 will be identified for con testimony throughout the session. To preserve the microphone queue for debate on the main motions the Speaker has indicated that two microphones at the front of the room labeled “A” and “B” will be used for debate on subsidiary motions. A third microphone will be placed front

and center, labeled "P", for parliamentary inquiries, points of order, points of information or to appeal a ruling of the Chair. Microphone "P" may also be used for a question of privilege that has to do with the convenience, comfort, rights, or privileges of a member or of the assembly that is urgent and must be decided immediately. Offering to give information is *debate* and is not a point of information, and should be given at one of the six microphones in the queue.

Recognition of Those Waiting to Speak: Microphones identified as pro/con will be used throughout the session. When a member wishes to address the House, the individual should approach the appropriately labeled microphone, secure the attention of the Speaker through the attendant at the microphone and wait to speak until recognized by the Speaker. The member should then state his or her name, district, and, for the benefit of the official reporter, the purpose of his or her comments (e.g., speaking for or against a motion, presenting a new motion, etc.). If all members of the House follow this procedure, work will be expedited and all who wish to be heard will be given an opportunity.

When an electronic vote is taken, the Speaker will allow sufficient time for members at the microphone to return to their places before taking the vote. In the event debate continues on the same issue, the Speaker will honor the microphone sequence prior to taking the electronic vote. Therefore, a member who was at the microphone and did not have an opportunity to speak before that vote was called and who wishes to continue debate on the same issue should return to the microphone where he or she was prior to the electronic vote.

Access to Floor of House: Access to the floor of the House of Delegates is limited to officers and members of the House of Delegates, the elective and appointive officers of the Association, the former presidents, the members of the Board of Trustees, the chairs of the councils and commissions, the secretaries and executive directors of constituent societies, the executive director and president of the American Student Dental Association, an officially designated representative from each of the American Hospital Association and American Medical Association and members of the Headquarters Office staff. Council and commission chairs are responsible for requesting floor access for any non-delegate council or commission member who desires to speak during debate on the report of the council or commission consistent with the *Bylaws* and the Rules of the House of Delegates.

Alternate delegates, former officers and former trustees do not have the privilege of access to the floor but will be seated in a special area reserved for them.

Admission to the House will not be granted without the display of the appropriate annual session badge. Every delegate must also hand the appropriately numbered card to the attendant at the door for each meeting so that the official attendance record may be maintained. Former officers and former trustees will also be admitted to the section reserved for alternate delegates and upon request will receive access to all reference committee reports available to delegates and alternates.

Secretaries and Executive Directors of Constituent Societies: In accordance with the standing rule of the House, "The secretary and executive director of a constituent society may be seated with the constituent society delegates on the floor of the House of Delegates even though they are not official delegates." Under the standing rules, it is not permissible to designate an "acting" secretary or executive director of a constituent society so that he or she may be seated on the floor of the House, unless that person is designated as "acting" secretary or executive director for the remaining portion of the annual session.

Seating of Component Executive Directors in the Alternate Section of the House of Delegates: In 2015, the House of Delegates adopted Resolution 48H-2015 to provide component executive directors and secretaries seating in the Alternate Delegate section. Based on seating capacity at the 2016 House of Delegates, five passes have been allocated to each district caucus chair for distribution and use by component executive directors. The passes will only be released to district caucus chairs and will be available for pick-up at Delegate Registration beginning Thursday, October 20. Additional passes may be obtained subject to availability.

Replacement of Alternate Delegates for Delegates: Delegates wishing to substitute alternate delegates from their delegation for themselves during a meeting of the House of Delegates must complete the appropriate delegate-alternate substitution form. Delegates are required to sign the form and surrender their admission cards for the meeting or meetings not attended before admission cards will be issued to alternate delegates by the Committee on Credentials, Rules and Order. Substitution of alternate delegates may be made during all three meetings of the House of Delegates. In order for a complete and accurate attendance record for all meetings of the 2016 House of Delegates, submission of these completed substitution forms is essential.

Temporary substitutions: For the purpose of allowing an alternate to replace a delegate for a specific resolution or issue, the substitution forms do not have to be completed. And, again this year for these temporary substitutions, the switch can take place at the staffed openings between the delegate and alternate sections of the House. This will be in effect for the Second and Third meetings of the House.

Closed Session: A closed session is any meeting or portion of a meeting of the House of Delegates with limited attendance in order to consider a highly confidential matter. A closed session may be held if agreed upon by general consent of the House or by a majority of the delegates present at the meeting in which the closed session would take place. In a closed session, attendance is limited to officers of the House, delegates and alternates, and the elective and appointive officers, trustees and general counsel of the Association. In consultation with the Secretary of the House, the Speaker may invite other persons with an interest in the subject matter to remain during the closed session. In addition to senior staff, this is likely to include members and staff of the council(s) or commission(s) involved with the matter under discussion and executive directors of constituent societies and the American Student Dental Association. No official action may be taken nor business conducted during a closed session.

Immediately after a closed session, the Speaker will inform delegates that they may present a motion to request permission to review information which was discussed in the closed session, with the information being discussed only with members present at the session. This provision is not applicable to an attorney-client session.

Attorney-Client Session: An attorney-client session is a form of closed session during which an attorney acting in a professional capacity provides legal advice, or a request is made of the attorney for legal advice. During these sessions, the legal advice given by the attorney may be discussed at length, and such discussion is "privileged." The requests, advice, and any discussion of them are protected, which means that opponents in litigation, media representatives, or others cannot legally compel their disclosure. The purpose of the privilege is to encourage free and frank discussions between an attorney and those seeking or receiving legal advice. The privilege can be lost (waived) if details about the attorney-client session are revealed to third parties. Once the privilege has been waived, there is a danger that all privileged communications on the issues covered in the attorney-client session, regardless of when or where they took place, may become subject to disclosure. For attorney-client sessions, the Speaker and Secretary shall consult with the General Counsel regarding attendance during the session. No official action may be taken nor business conducted during an attorney-client session.

In accordance with the above information, all those participating in an attorney-client session shall refrain from disclosing information about the discussion held during the attorney-client session. In certain cases, a decision may be made to come out of the attorney-client session for purposes of conducting a non-privileged discussion of the same or related subject matter. The difference will be that during the non-privileged session there will be no discussion of any legal advice requested by attendees during the attorney-client session or about any of the legal advice given by the legal counsel. It is such requests for legal advice, legal advice given, and discussion of the legal advice during the attorney-client session that are protected by the privilege and that shall not be disclosed or discussed outside of the attorney-client session.

Manual of the House of Delegates: Each member of the House of Delegates has access to the *2016 Manual of the House of Delegates* through ADA Connect. The *Manual* contains the standing rules of the House of Delegates and the pertinent provisions of the *Bylaws*.

Members of the House should familiarize themselves with the rules and procedures set forth in the *Manual* so that work may proceed as rapidly as possible.

Distribution of Materials in the House of Delegates: The Committee calls attention to the procedures to be followed for distributing materials in the House of Delegates: (1) no material may be distributed in the House without obtaining permission from the Secretary of the House; (2) material to be distributed must relate to subjects and activities that are proposed for House action or information; and (3) material to be distributed on behalf of any member's candidacy for office shall be limited to printed matter on paper only and nothing else.

Media Representatives at Meetings of the House of Delegates: On occasion, representatives of the press and other communications media may be in the visitors' section of the House and in reference committee hearings.

House of Delegates Information and Resource Office: An Information and Resource Office will be open Thursday, October 20 through Sunday, October 23, and will be located in the Hyatt Regency Denver, Centennial Foyer. This office will be open to delegates, alternates, constituent society officers and staff. The office will be equipped with computers with printing capability, a copy machine, and general information about the meetings of the House of Delegates and related activities. Everyone is urged to use the Information and Resources Office when drafting resolutions or testimony.

Individuals having resolutions for submission to the House of Delegates will be directed to the Headquarters Office where final resolution processing will occur.

Resolutions

(Resolution 15:Worksheet:1014)

(Resolution 16:Worksheet:1015)

(Resolution 17:Worksheet:1016)

Resolution No. 15 New

Report: Credentials, Rules and Order Date Submitted: July 2016

Submitted By: Standing Committee on Credentials, Rules and Order

Reference Committee: N/A

Total Net Financial Implication: None Net Dues Impact: _____

Amount One-time _____ Amount On-going _____ FTE _____

ADA Strategic Plan Objective: None

How does this resolution increase member value: Not Applicable

- 1 **MINUTES OF THE 2015 HOUSE OF DELEGATES**
- 2 **Background:** The minutes of the 2015 session of the House of Delegates have been posted in the HOD
- 3 Supplemental Information library on the House of Delegates community of ADA Connect.
- 4 Questions or corrections regarding the minutes may be forwarded to Kyle Smith, manager, House of
- 5 Delegates at smithk@ada.org. The Committee presents the following resolution for House action.
- 6 **Resolution**
- 7 **15. Resolved,** that the minutes of the 2015 session of the House of Delegates be approved.

Resolution No. 16 New

Report: Credentials, Rules and Order Date Submitted: July 2016

Submitted By: Standing Committee on Credentials, Rules and Order

Reference Committee: N/A

Total Net Financial Implication: None Net Dues Impact: _____

Amount One-time	Amount On-going	FTE
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ADA Strategic Plan Objective: None

How does this resolution increase member value: Not Applicable

1 **ADOPTION OF AGENDA AND ORDER OF AGENDA ITEMS**

2 **Background:** In response to Resolution 98H-2015, which modifies the House of Delegates schedule to
3 eliminate the fourth meeting, the 2016 House of Delegates will adjourn after the third meeting on Monday,
4 October 24. The Committee has examined the agenda for the meeting of the House of Delegates
5 prepared by the Speaker and Secretary of the House. Accordingly, the Committee recommends adopting
6 the agenda as the official order of business for this session. The Committee also recommends that the
7 Speaker of the House be allowed to rearrange the order of the agenda as deemed necessary to expedite
8 the business of the House.

9 Resolution

10 **16. Resolved**, that the agenda as presented in the *2016 Manual of the House of Delegates and*
11 *Supplemental Information* be adopted as the official order of business for this session, and be it
12 further

13 **Resolved**, the Speaker is authorized to alter the order of the agenda as deemed necessary in order
14 to expedite the business of the House.

Resolution No. 17 NewReport: Credentials, Rules and Order Date Submitted: July 2016Submitted By: Standing Committee on Credentials, Rules and OrderReference Committee: N/ATotal Net Financial Implication: None Net Dues Impact: Amount One-time Amount On-going FTE

ADA Strategic Plan Objective: None

How does this resolution increase member value: Not Applicable

1 REFERRALS OF REPORTS AND RESOLUTIONS

2 **Background:** A standing rule of the House of Delegates directs that prior to each session of the House,
3 the Speaker shall prepare a list of recommended referrals to reference committees with the list to be
4 available at the opening meeting of the House and be subject to amendment or approval on vote of the
5 House of Delegates.

6 This preliminary list of referrals (circulated in the form of an All Inclusive General Index to the resolution
7 worksheets) will be provided with the second posting of resolution worksheets in late-September and
8 updated and posted again on Thursday, October 20. The Speaker will announce additional referrals
9 during the first meeting of the House of Delegates. A complete list of referrals by reference committee, in
10 the form of an agenda, will be available in the reference committee hearing rooms on Saturday morning,
11 October 22.

12 Resolution

13 **17. Resolved,** that the list of referrals recommended by the Speaker of the House of Delegates be
14 approved.

Resolution No. 18 NewReport: N/A Date Submitted: September 2016Submitted By: Board of TrusteesReference Committee: N/ATotal Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: None

How does this resolution increase member value: Not Applicable

NOMINATIONS TO COUNCILS, COMMISSIONS AND THE NEW DENTIST COMMITTEE

- 1 **Background:** The Board of Trustees annually submits to the House of Delegates nominations for
 2 membership to the councils, commissions and the New Dentist Committee. Based on the ADA *Bylaws*,
 3 the nominees for ADA open positions on the Commission on Dental Accreditation and Council on
 4 Scientific Affairs were selected by the Board from nominations open to all trustee districts. Additionally, in
 5 accordance with a long-standing House directive, the Board is providing a brief narrative on each
 6 nominee's qualifications (Appendix 1). The *Bylaws*, Chapter VI, Conflict of Interest, requires nominees for
 7 Councils and Commissions to complete a conflict of interest statement and file such statement with the
 8 Secretary of the House of Delegates to be made available to the delegates prior to election. Copies are
 9 available upon request through the Office of The Executive Director.

**ACCESS, PREVENTION AND
INTERPROFESSIONAL RELATIONS**

Robert D. Bradberry, Georgia
 Paul S. Casamassimo, Ohio
 Mark J. Humenik, Illinois
 Carmine J. LoMonaco, New Jersey
 Richard A. Stevenson, Florida

ADA SESSIONS

J. Jerald Boseman, Utah
 William H. Bragdon, South Carolina
 David L. Rothman, California
 Kevin M. Sloan, Michigan
 Wayne T. Tadsen, Georgia

COMMUNICATIONS

Kerry K. Carney, California
 Jeannette Peña Hall, Florida
 Frank P. Luorno, Jr., Virginia
 David James Manzanares, New Mexico
 Sarah Tevis Poteet, Texas

**CONTINUING EDUCATION PROVIDER
RECOGNITION**

Bertram J. Hughes, Florida

DENTAL ACCREDITATION

Ralph C. Attanasi, Jr., Florida, *ad interim*
 Christopher M. Hasty, Georgia*

DENTAL BENEFIT PROGRAMS

Thomas R. a'Becket, Maryland
 Paul Calitri, Rhode Island
 Kenneth L. Chung, Oregon
 James W. Hollingsworth, Mississippi
 Cynthia Olenwine, Pennsylvania

DENTAL EDUCATION AND LICENSURE

David F. Boden, Florida
 Rekha C. Gehani, New York

DENTAL PRACTICE

Nima Aflatooni, California
 Linda J. Edgar, Washington
 Rudolph T. Liddell, Florida
 Michael D. Medovic, West Virginia
 Douglas S. Wolff, Minnesota

ETHICS, BYLAWS AND JUDICIAL AFFAIRS

Larry F. Browder, Alabama
Donald F. Cohen, Texas
Seth W. Griffin, Michigan
Michael A. Kurkowski, Minnesota
Kristi M. Soileau, Louisiana

GOVERNMENT AFFAIRS

Deborah S. Bishop, Alabama
Mark B. Desrosiers, Connecticut
Phillip J. Fijal, Illinois
Rhonda M. Hennessy, Michigan
Zacharias J. Kalarickal, Florida

MEMBERS INSURANCE AND RETIREMENT PROGRAMS

Jon J. Johnston, Pennsylvania
Scott H. Kido, Idaho
Paul T. Olenyn, Virginia, *ad interim*
Frederic C. Sterritt, New Jersey
Christopher M. Tota, New York
Cecil White, Jr., Florida

MEMBERSHIP

Pia Chatterjee Kirk, Mississippi
I. Jay Freedman, Pennsylvania
Mary Jane Hanlon, Massachusetts
Mark I. Kampfe, South Dakota
Danielle M. Riordan, Missouri

NEW DENTIST

Colleen Greene, Wisconsin
Britany F. Matin, Alabama
Emily A. Mattingly, Missouri
Tricia S. Quartey, New York, *ad interim*
Adam C. Shisler, Texas
Sara E. Stuefen, Iowa

SCIENTIFIC AFFAIRS

Margherita R. Fontana, Michigan
Maria L. Geisinger, Alabama
Steven R. Jefferies, Pennsylvania
Martha Ann Keels, North Carolina

*In response to resolution 76H-2010, CODA requested that, beginning in 2012, new Commissioner appointees be identified one year in advance of their term of service in CODA activities.

Resolution

18. Resolved, that the nominees for membership on ADA councils, commissions and the New Dentist Committee submitted by the Board of Trustees in accordance with Chapter VII, Section 100(H) of the *Bylaws* be elected.

BOARD RECOMMENDATION: Vote Yes.

BOARD VOTE: UNANIMOUS

APPENDIX 1**STATEMENT OF QUALIFICATIONS OF NOMINEES TO COUNCILS AND COMMISSIONS****ACCESS, PREVENTION AND INTERPROFESSIONAL RELATIONS**

Bradberry, Robert D., Georgia, 2020. Dr. Robert Bradberry is a board certified pediatric dentist who has practiced in both public and private settings. He practiced in Georgia state county health centers for several years where he came to know the issues of public health first hand. He has a thriving pediatric practice in Marietta, Georgia, where he also serves less fortunate patients who have needs through the Cobb Assistance Program and through many community settings including Good Samaritan and others. Dr. Bradberry understands the many issues facing the provision of oral health care in both settings and is an avid advocate for patients.

Dr. Bradberry has promoted oral health care for several years in his community through the schools, daycare centers and through legislative lobbying. Also, he desires to pass what he knows onto the next generation, so he drives three hours each way to the state dental school as an unpaid volunteer to encourage the involvement of new dentists. Active with pediatricians in promoting oral health, active in the state and district dental association, he has served as president of his district and has served on several committee's including budget, strategic planning, long range planning and public relations. Dr. Bradberry has also served as editor of the state journal, president of Georgia Academy of Pediatric Dentistry, Southeast Society Pediatric Dentistry Board of Directors, to name a few. He was most recently elected vice president of the Georgia Dental Association. So he has worked on many occasions to build consensus among leaders in various groups. He has also been a member of the 5th district delegation, a delegate to the ADA and understand how to bring cohesion. Always working to move forward with the patient's interest, first and foremost.

Due to his many experiences Dr. Bradberry will bring a good work ethic, breadth of knowledge on oral health issues, willingness to learn more, good ability to work with others and will do well on the Council.

Casamassimo, Paul S., Ohio, 2020. Dr. Paul Casamassimo is board-certified in pediatric dentistry, is a professor of pediatric dentistry at The Ohio State University College of Dentistry, and practices as a hospitalist at Nationwide Children's Hospital in Columbus, Ohio, where he served as president of the medical staff in 1999.

Dr. Casamassimo is a visionary leader in the field of pediatric dentistry and a powerful champion for expanding access to care and awareness of the importance of children's oral health care in Ohio. He has made significant contributions to the dental profession and the specialty of pediatric dentistry through clinical practice, academics, policy development, and extensive volunteer leadership service to the dental profession and the specialty of pediatric dentistry.

He devotes extensive volunteer time providing oral care to kids through community outreach programs, as well as advocating policies, guidelines and programs that promote optimal oral health care for infants and children through adolescence, including those with special health care needs.

Dr. Casamassimo has authored or edited over 350 publications, including three books, 39 book chapters, and eight monographs in the areas of pediatric dentistry, care of children with special health care needs, and dental education.

He is a past president of the Ohio Dental Association, American Academy of Pediatric Dentistry, and Academy of Dentistry for the Handicapped.

With over 40 years serving our profession as an authority on access to care issues, oral health prevention and interprofessional relations, he is uniquely qualified to serve the needs of organized dentistry and the dental profession.

1 *Humenik, Mark J., Illinois, 2020.* Dr. Mark Humenik is a graduate of the University of Illinois, College of
2 Dentistry where he received his D.D.S. degree in 1988. Dr. Humenik is a full-time general practitioner in
3 Northbrook, Illinois, and has served as president of the North Suburban Branch of the Chicago Dental
4 Society, and as a trustee of the Illinois State Dental Society from 2007 to 2010. He has participated in
5 many national and international humanitarian missions. In 2014, he served as board president for
6 America's Dentists Care Foundation (ADCF), which is the parent organization for the national Mission of
7 Mercy programs. Dr. Humenik has chaired two of the Illinois State Dental Society Foundation's Illinois
8 Mission of Mercy (IMOM) events (2010 and 2012). He is a Fellow of the American College of Dentists,
9 the International College of Dentists, and the Pierre Fauchard Academy. Dr. Humenik has been honored
10 with the President's Award from the Illinois State Dental Society; the Thaddeus V. Weclaw Memorial
11 Award from the International College of Dentists, Eighth District; and the George Cushing Award from the
12 Chicago Dental Society. Dr. Humenik is nominated, without reservation, to serve on the ADA Council on
13 Access, Prevention, and Interprofessional Relations.

14 *LoManaco, Carmine J., New Jersey, 2020.* Dr. Carmine LoMonaco has been very active with lobbying
15 efforts in his state supportive of water fluoridation. He is a full time faculty member at the Rutgers School
16 of Dental Medicine where he serves as director of the Emergency and Urgent Care Division, interacting
17 with the community on a daily basis. The Division works closely with local and state communities of
18 interest to provide Medicaid and low-income patients emergency and urgent care. In addition to this
19 safety net experience, Dr. LoMonaco has participated in the Give Kids a Smile (GKAS) programs at the
20 dental school and with the New Jersey Dental Association. He is also active in the Special Olympics
21 program as well as the oral cancer screenings and children's oral health screenings at the dental school.
22 He served on the ADA Council on Government Affairs, and chaired the Council while the ADA was
23 initiating its Action for Dental Health program. He also served on the State Public Affairs Oversight
24 Committee and chaired that group as well. This experience gives him a unique perspective on how
25 access, prevention and interprofessional issues not only impact the public, but additionally our members
26 and the ADA tripartite.

27 *Stevenson, Richard A., Florida, 2020.* Dr. Richard Stevenson just completed his year as immediate past
28 president of the Florida Dental Association (FDA). He has served six years as a line officer and four
29 years prior as a trustee of the FDA. Dr. Stevenson served on the FDA's Governmental Action Committee
30 where he oversaw the development of Florida's Action for Dental Health. This program is patterned after
31 ADA's Action for Dental Health but specific for issues in Florida. He also served on the Oral Health
32 Florida Coalition and the State's Oral Health Improvement Plan (SOHIP). Both designed to bring
33 awareness to oral health and its importance in overall health. Dr. Stevenson was instrumental in the
34 development of Florida's Strategic Plan and led in the efforts to counteract the role of the Kellogg
35 Foundation in changing the workforce to include dental therapists in Florida. His dedication to the
36 profession and his experience in coalition building should serve the ADA well on this Council.

37 **ADA SESSIONS**

38 *Boseman, J. Jerold, Utah, 2020.* Dr. Jerold Boseman is well qualified to serve on the ADA Council on
39 ADA Sessions. He has been actively involved in District 14 for 18 years. He has substantial experience
40 that will benefit the Council and the ADA. He has been involved in many positions on the Utah Dental
41 Association Convention Committee, serving as the coordinator of the meeting for the past three years.
42 Dr. Boseman is on the CE Committee at the University of Utah School of Dentistry and will assume the
43 directorship this summer. He has previously served on CAPIR and understands the function and
44 responsibilities associated with serving on an ADA Council. The ADA will be well served by his
45 participation on this important Council.

46 *Bragdon, William H., South Carolina, 2020.* Dr. William Bragdon graduated from Covenant College with a
47 B.A. in Biology in 1971. He completed his graduate study in Vertebrate Zoology from Memphis State
48 University in 1975. He received his DDS degree from the School of Dentistry, University of Tennessee,
49 Memphis, Tennessee in 1978. He served in the National Health Service Corps from 1979 to 1981 and

1 has been in private practice in Greenville, South Carolina from 1981 until the present. Dr. Bragdon was a
2 clinical dental hygiene instructor at Greenville Technical College from 1983 to 1987 and is presently
3 serving as an adjunct faculty member of the Medical University of South Carolina. He served for six years
4 on the South Carolina State Board of Dentistry and was president in 2006. He has been a member of the
5 American Association of Dental Boards since 2001. Dr. Bragdon holds Fellowships in American College
6 of Dentists, the International College of Dentists and the Pierre Fauchard Academy. He also serves on
7 the SC Denpac Board and presently is the chairman. Dr. Bragdon has always attended the South
8 Carolina Dental Association annual meeting and has been very involved with the programs that are
9 presented when his district is hosting. His vast experience in all aspects of organized dentistry and his
10 common sense approach to solving problems make him an excellent choice for the Council on ADA
11 Sessions.

12 *Rothman, David L., California, 2020.* Dr. David Rothman has served on the CDA Presents Board of
13 Managers since 2011, the board responsible for the planning and execution of two major dental education
14 conferences and trade shows each year.

15 Dr. Rothman received his B.A. cum laude from the State University of New York at Buffalo and his D.D.S.
16 from New York University College of Dentistry. Following a general practice residency at Albert Einstein
17 Medical Center in Philadelphia and an anesthesiology residency at the Medical College of Pennsylvania,
18 he completed his pediatric dentistry residency at Children's Hospital in Oakland and the University of
19 California, San Francisco (UCSF). He remained at UCSF to become the director of the Pediatric Dentistry
20 Residency program and in 1989 assumed the chair of the Department of Pediatric Dentistry at the
21 University of the Pacific School of Dentistry. In 1998, he entered full time private practice in San
22 Francisco though he has maintained a private practice limited to pediatric dentistry and dentistry for
23 children with special needs since completing his residency in 1983. He maintains a faculty position as
24 clinical associate professor, Department of Pediatric Dentistry, Case Western Reserve School of Dental
25 Medicine.

26 Dr. Rothman is board certified as a diplomate of the American Board of Pediatric Dentistry and is a Fellow
27 of the American Academy of Pediatric Dentistry. He is a member of the American Dental Association,
28 California Dental Association, American Dental Society of Anesthesiology, the American Academy of
29 Pediatric Dentistry and the California Society of Pediatric Dentistry. He chaired the Anesthesia and
30 Sedation Subcommittee of the AAPD and served on Committee H of CDEL of the ADA. He is past
31 president of the California Society of Dentistry for Children, the College of Diplomates of the American
32 Board of Pediatric Dentistry and the California Society of Pediatric Dentistry. He is also past Editor of the
33 San Francisco Dental Society. Honors include membership in the OKU Delta Delta Chapter and the
34 Pierre Fauchard Academy. He has served on the boards of the Dental Health Foundation and Support
35 for Families of Children with Disabilities. Dr. Rothman was chief examiner in pediatric dentistry of the
36 British Columbia College of Dental Surgeons and currently serves as an examiner for the American Board
37 of Pediatric Dentistry. He has practiced and taught with the international medical group Heart to Heart in
38 Leningrad/St. Petersburg, Russia. He is a member of the medical staffs of Children's Hospital/Oakland,
39 California Pacific Medical Center and Kaiser Permanente Medical Center.

40 Dr. Rothman has been published in the *Journal of the California Dental Association*, the *Journal of the*
41 *American Dental Association* and the *Journal of the American Society of Dentistry for Children* as well as
42 various component newsletters. He lectures nationally and internationally to dental and medical groups in
43 the areas of pediatric dentistry, sedation, anesthesia and hospital dentistry. His most recent article,
44 "Sedation in the Pediatric Patient" was published in the *Journal of the California Dental Association* in
45 August 2013.

46 *Sloan, Kevin M., Michigan, 2020.* Dr. Kevin Sloan is a graduate of the University of Michigan School of
47 Dentistry (U of M) where he also completed a post-graduate program in Advanced Restorative Dentistry,
48 Crown and Bridge Prosthodontics. He was an assistant professor of Crown and Bridge Prosthodontics at

U of M from 1985 to 1990, and currently owns and practices full-time at Ann Arbor Dental Care, PLLC, in Ann Arbor, Michigan.

Dr. Sloan has served as a consultant and/or member of the Committee on Scientific Programs for the Michigan Dental Association (MDA) from 1996 to 1999 and after a brief hiatus, again since 2002. From 2008 to 2014 he chaired the MDA's Committee on Scientific Programs and currently serves as a consultant to that committee. Since 2013, Dr. Sloan has been the lead for the Prosthodontics' Division for the MDA Foundation's Mission of Mercy Planning Committee.

Dr. Sloan has been a member of the Washtenaw District Dental Society's Peer Review Dental Care and Peer Review Ethics Committees, and he is a past president of the F. B. Vedder Society of Crown & Bridge Prosthodontics.

Tadsen, Wayne T., Georgia, 2020. Dr. Wayne Tadsen served as president of the Hinman Dental Society in 2006 and general chairman of the Hinman Dental Meeting in 2009. He served as program chairman for both the 2004 and 2012 meetings, as well as being instrumental in helping build the 2009 meeting program.

He has been active in and held numerous positions in other dental study clubs and societies over the last 40 years. Dr. Tadsen will bring years of experience and energy to the Council.

Dr. Tadsen is able to work well with others and is committed to the ADA and making America's Dental Meeting the premiere meeting in the world. Finally, he is committed to giving what time is necessary and meeting the demands needed to perform this commitment. Dr. Tadsen will help the ADA keep our meeting the best in the industry as well as make contributions to take it to an even higher level.

COMMUNICATIONS

Carney, Kerry K., California, 2020. Dr. Kerry Carney received her bachelor of arts degree in Anthropology from the University of Oklahoma in 1972, and a master of arts of degree from the University of Victoria, B.C. in 1977. In 1984, Dr. Carney went on to receive her doctor of dental surgery degree from the University of California at San Francisco School of Dentistry where she received the American Society of Dentistry for Children Award upon graduation.

Dr. Carney has been in private dental practice with her husband, an orthodontist, since 1984 in Benecia, California. Additionally, she has worked in public health as dental director for La Clinica de la Raza in Oakland, and as an AIDS/HIV educator and infection control consultant for the Alameda County Dental Health Bureau, Alameda County Health Care Services Agency, and the Dental Health Foundation.

Dr. Carney has been active at all levels of the tripartite. At the ADA, she served as a member of the Council on Dental Practice from 2004 to 2008, has been an ADA delegate since 2005, and was chair of the ADA Reference Committee on Dental Benefits, Practice, Science and Health in 2009. Dr. Carney has served in many capacities for the California Dental Association (CDA) as a task force chair and as a member of reference committees, strategic planning committee, and the governance review committee, to name a few. She has been editor-in-chief of the *Journal of the California Dental Association* (JCDA) since 2008. She is a past-president of her component, Napa Solano Dental Society.

Dr. Carney is a well-respected, contributing member of the community of dental editors and is an accomplished writer on topics of importance to dentistry such as dental practice, dental benefits, policy and preventive healthcare. She is an excellent communicator to multiple audiences. Dr. Carney has received numerous requests for reprints of her editorials over the years. For accomplishments during her tenure as editor of the JCDA she received the 2014 Distinguished Editor Award from the American Association of Dental Editors.

1 Dr. Carney's background, strategic thinking ability and exemplary communication skills make her a great
2 advocate and candidate for the Council on Communications.

3 *Hall, Jeannette Peña, Florida, 2020.* Dr. Jeannette Peña Hall has been active in her community and in
4 organized dentistry since her graduation from Harvard School of Dental Medicine in 1998. She attended
5 a GPR program and completed her endodontic training at Tufts in 2000. She attended the ADA's Institute
6 for Diversity in Leadership in 2004-2005 and has since used her knowledge and passion to become a
7 leader at all levels of the tripartite. Dr. Hall served as president of her local affiliate (West Dade Dental
8 Society, 2005-2006) and her component (South Florida District Dental Association (SFDDA), 2013-2014).
9 She currently serves as trustee of the Florida Dental Association and has been appointed to several
10 committees and councils as their liaison.

11 Dr. Hall has a keen interest in communications having served on the Communications Committee of the
12 SFDDA and the Council on Communication of the FDA. As chair of the Council, she oversaw the
13 development of a public relations campaign for the FDA. This campaign was designed to stimulate dental
14 consumers to seek out FDA members as their dentist. The cost of the program, however, did not allow it
15 to pass the FDA House of Delegates due to the concern of increasing dues or assessments would have a
16 negative impact on an already declining membership market share. But, that set back did not discourage
17 her as she moved on to become president of her component. Dr. Hall has been a delegate to the ADA
18 from the 17th District since 2012.

19 Dr. Hall is a bright, young, diverse leader with much potential. She also has a desire to serve our
20 profession through involvement with the ADA and the experience to lend her talents to this Council.

21 *Iuorno, Frank P., Jr., Virginia, 2020.* Dr. Frank Iuorno graduated with a bachelor of arts in computer
22 science, from Hamilton College, in Clinton, New York and University of North Carolina School of
23 Dentistry, Chapel Hill, North Carolina in June of 1994. He has extensive training in oral and maxillofacial
24 surgery finishing his residency in June of 2000 and also did an orthodontics masters program, completing
25 that in June of 2002. Both programs were completed at the Virginia Commonwealth University (VCU),
26 Medical College of Virginia. Dr. Iuorno practices orthodontics at West End Orthodontics in Richmond,
27 Virginia. He is a past president of the Richmond Dental Society and is also an adjunct faculty member at
28 VCU School of Dentistry. He is a part of the St. Mary's Cleft and Craniofacial Team and also volunteers
29 at the Goochland Free Clinic, in Goochland, Virginia. Dr. Iuorno's communication and consensus building
30 skills within several different disciplines of dentistry as well as his degree in computer science will
31 certainly prove to be an asset to the Council on Communications.

32 *Manzanares, David J., New Mexico, 2020.* Dr. David Manzanares is the current secretary-treasurer of the
33 New Mexico Dental Association. He is also a participant in the ADA Diversity in Leadership Program. He
34 has shown his commitment to the value of communication through authorship of an article in *Dental*
35 *Economic* describing his experience with the ADA sponsored DRB Loan Program. He has also
36 participated in a video documenting the value of involvement in organized dentistry. On a district level he
37 has recognized the need for improved lateral communication in a multi-state district and made
38 suggestions to make those changes. He was actively involved in American Student Dental Association
39 on the legislative front while in dental school, and has continued with active participation as a delegate
40 and board member of the New Mexico Dental Association.

41 *Poteet, Sarah Tevis, Texas, 2020.* Dr. Sarah Poteet is a graduate of the University of Texas Health
42 Science Center in San Antonio and received both a D.D.S. in 2003 and an Advanced Education General
43 Dentistry certificate in 2004. She practices in Dallas and is a member of the Dallas County Dental Society
44 (DCDS). She has won numerous awards such as the DCDS's "New Dentist Of the Year" award in 2011
45 and in 2015, the DCDS "Presidents Award." She has also be awarded the Texas Dental Association's
46 "New Dentist Leadership Award." She has served as on the board of the DCDS and from 2008 to 2012
47 the ADA New Dentist Committee (NDC) for the 15th District. She is currently a delegate to the ADA
48 House of Delegates and has served on many ADA councils and committees as liaison from the NDC.

1 She has recently chaired the DCDS Media Committee and is uniquely qualified to serve as a member of
2 the Council on Communications.

3 **CONTINUING EDUCATION PROVIDER RECOGNITION**

4 *Hughes, Bertram J., Florida, 2020.* Dr. Bertram Hughes has been practicing general dentistry in
5 Gainesville, Florida for over 25 years. He is a graduate of the University of Florida College of Dentistry.
6 Upon completion of dental school he also performed a wide array of research, being published and
7 competed as a finalist for the IADR Hatton Award. Dr. Hughes also led a number of Journal Club lectures,
8 taught DAT prep and developed a new standard for tooth size prediction for orthodontic care.

9 Dr. Hughes has served as chair of Continuing Education and the Florida Dental Convention for the past
10 six years. He has done such a great job that the FDA's House of Delegates passed an exemption from
11 term limits for Dr. Hughes to carry on as chair for another term. He oversees all contracts for speakers
12 and provides oversight of reviewing the presentations of speakers. He makes sure that all presentations
13 of the speakers will meet the guidelines as set forth by CCEPR. He has recently had some challenges
14 with compliance to the CCEPR guidelines and would like to have input to the Commission. Dr. Hughes
15 has dedicated his service in this CE arena and has done an excellent job. In fact, the Florida Dental
16 Convention recently received two "TOP FASTEST 50" awards from the Association of Tradeshaw
17 Executives in Las Vegas. The first award was given because of the fast growth in attendees (39% over
18 the last 4 years) and the second was for fast growth in the exhibit hall. He has a great knowledge of
19 meeting planning, continuing education and working with continuing education speakers from across the
20 globe. Dr. Hughes has worked closely with our convention team in completing our CERP requirements
21 and has a great knowledge of the CERP process. He has a great commitment to organized dentistry and
22 to dental education.

23 For the entirety of his career in dentistry, Dr. Hughes has served as a member of both the ADA and
24 National Dental Association. He has been an alternate delegate to the ADA for three years and plays an
25 active role at the affiliate level where he has been president. He especially loves working with the
26 University of Florida College of Dental Medicine where he has held a position on the admission
27 committee. Dr. Hughes has served in leadership positions of the National Dental Association (most
28 recently Assistant Secretary) and especially in their foundation where he serves as vice president and
29 treasurer. His organizational skills are remarkable and make some of the most difficult tasks look easy.
30 Dr. Hughes wants the very best for the ADA and is willing to work hard to keep the high standards set
31 forth in recognizing high quality CE providers. Dr. Hughes has been an invaluable asset for the Florida
32 Dental Association and would be a great addition to the Commission.

33 **DENTAL ACCREDITATION**

34 *Attanasi, Ralph C., Jr., Florida, 2018.* In June, 2016, Dr. Ralph Attanasi was appointed to complete the
35 unexpired term of Dr. Patricia L. Blanton as a member of the Commission on Dental Accreditation.

36 Dr. Attanasi received his bachelor of science degree from Creighton University in Omaha, Nebraska and
37 then worked as a dental research scientist at New York's Rockefeller University. Dr. Attanasi determined
38 that while he enjoyed working in the scientific arena, he missed the human connection that comes with
39 direct patient care.

40 Dr. Attanasi decided to follow his passion and attended New York University's College of Dentistry where
41 he earned a D.D.S. degree in 1991. Dr. Attanasi then completed a one-year general practice residency
42 at Columbia-Presbyterian Hospital in New York City.

43 While he enjoyed many aspects of general dentistry, Dr. Attanasi found that he received the most
44 personal satisfaction when he performed complex prosthetic treatment. Dr. Attanasi decided that he
45 would pursue a specialty degree in Prosthodontics and graduated from the University of Michigan's three-
46 year prosthetic residency program with a certificate and M.S. in Prosthodontics.

Dr. Attanasi is a Fellow of the American College of Dentists and the International College of Dentists as well a member of the Pierre Fauchard Academy.

Dr. Attanasi has served as the president of the Florida Dental Association.

Hasty, Christopher M., Georgia, 2021. Dr. Christopher Hasty is an active member of the ADA and fulfills all other eligibility requirements required to serve on the Commission of Dental Accreditation. Just three years after completing his GPR and beginning his dental practice, Dr. Hasty was elected as an officer of his district dental society. Thus began a journey in the Southwestern District of the Georgia Dental Association, culminating as its president in 2009. Dr. Hasty's exceptional talent and dedication to the tasks assigned him opened an opportunity to serve on the ADA New Dentist Committee in 2012. He served as vice chair of the Committee in 2015 and is chair of the New Dentist Committee this year.

Dr. Hasty is committed to serving a four year term, attend an ADA orientation and is willing to commit the time required for Commission responsibilities.

The appointment of Dr. Hasty to the Commission on Dental Accreditation will bring to the Commission, a proven record and dedication to all of the responsibilities and tasks given him, combined with the fresh perspective of a "new dentist" that will be a decided asset in Commission discussions and decisions.

DENTAL BENEFIT PROGRAMS

a'Becket, Thomas R., Maryland, 2020. Dr. Thomas a'Becket recently served as the president of the Maryland State Dental Association (MSDA). Dr. a'Becket was a long standing treasurer for the MSDA, and has served as the budget and finance expert for the Fourth District for a number of years. As the owner of a private practice for 38 years and a participant in a good number of dental plans, he understands first-hand the circumstances and challenges that our members face each day in their practices with respect to third party issues. His financial, business and practical experience will serve as an asset to the Council on Dental Benefit Programs.

Calitri, Paul, Rhode Island, 2020. Dr. Calitri has been a dentist in private practice since 1992 after completing a general practice residency. He has been involved in organized dentistry for several years and recently completed his year as president of the Rhode Island Dental Association. Throughout the years, he has volunteered for the Rhode Island Mission of Mercy as well as the Rhode Island Dental Lifeline Network. As a solo practitioner, he is very familiar with many different insurance plans including managed plans and government programs. Dr. Calitri is a very conscientious and hardworking individual and would be a great asset to this Council.

Chung, Kenneth L., Oregon, 2020. Dr Kenneth Chung has a broad background, having served on Standards on Dental Informatics Committee ASC MD156. He has attended Dental Quality Alliance (DQA) meetings and his interest in DQA and how dental benefit plans can be designed to be more than just a reimbursement mechanism is one of his many interests. All this while having a multi-dentist practice and setting up a geriatric dental van. Dr. Chung does not lack for ideas. He currently serves on the Oregon Dental Association Board of Trustees and has served as an officer in his local component as well.

Hollingsworth, James R., Mississippi, 2020. Dr. James Hollingsworth has been a member of the ADA his entire dental career. He is a general dentist who has a solo practice in his hometown. In addition to that important accomplishment, he has demonstrated over and over his desire to serve his profession, his patients and his community through his volunteer work and leadership in organized dentistry, civic organizations and his church. He has served in several officer roles of the Mississippi Dental Association, on both the component and the constituent levels. Most recently, he has completed a term as president of our state association.

Dr. Hollingsworth understands and promotes the importance of professional health care organizations that represent and work on behalf of members and professional opportunities and issues. He is very

1 experienced and skilled in dealing with various types of personalities and is able to effectively connect
2 with others to achieve collaborative goals. Because of his experience in his own practice as a clinician
3 and also a small business owner, he understands first-hand the professional opportunities, challenges
4 and needs that dentists encounter on a daily basis. He is one of those volunteers who is willing to work
5 and do what it takes to get the job done.

6 *Olenwine, Cynthia, Pennsylvania, 2020.* Dr. Cynthia Olenwine is a practicing general dentist in Nazareth,
7 Pennsylvania. She has developed extensive knowledge in processing and understanding dental benefit
8 programs in serving dentistry as a dental hygienist, expanded function dental assistant, office manager
9 and dentist. Dr. Olenwine recently completed her term as president of the Valley Forge Dental Society;
10 Pennsylvania's largest component. She has also served on the local level as secretary, vice president
11 and president of Lehigh Valley Dental Society and as an alternate delegate to the Pennsylvania Dental
12 Association and ADA House of Delegates. Her attendance at numerous ADA Recruitment and Retention
13 Conferences has provided beneficial experience in understanding the needs of our members. She has
14 extensive knowledge of CDT coding and numerous dental insurance programs and transfers this
15 experience to her residents as an educator at St. Luke's Hospital and Lehigh Valley Health Network.

16 DENTAL EDUCATION AND LICENSURE

17 *Boden, David F., Florida, 2020.* Dr. David Boden is an exemplary dentist and periodontist. He has
18 served as trustee to the Florida Dental Association's (FDA) Board of Trustees for the past 12 years and
19 has been on several education task forces during that time. Dr. Boden served as trustee liaison to the
20 Florida Department of Health guiding relations between the FDA and the Department of Health. Dr.
21 Boden is currently teaching one day a week at NOVA Southeastern School of Dental Medicine in the
22 Perio Department. Dr. Boden served on the ADA's Council on Ethics, Bylaws and Judicial Affairs from
23 2006 to 2010 and was its chair in 2010. He has been a member of the 17th Delegation to the ADA since
24 2004 and has served as its lead delegate on education matters.

25 *Gehani, Rekha C., New York, 2020.* Dr. Rekha Gehani has demonstrated very keen interest in the fields
26 of dental education and licensure since 1981. Having served as a part time faculty at Columbia
27 University School of Dental Medicine for more than three decades; attending orthodontist at two major
28 teaching hospitals in New York City; international speaker not only in the U.S., but also in Latin America
29 and the Indian Sub-Continent; she has proven her interest in teaching the art and science of dentistry.

30 Dr. Gehani served the New York State Board of Dentistry from 1998 to 2008 as a member and then as
31 chair from 2006 to 2008. She has been serving the North East Regional Board now called American
32 Board of Dental Examiners, Inc. (ADEX) as an examiner since 1998.

33 Dr. Gehani has served Queens County Dental Society (QCDS) as a member of Board of Trustees since
34 2006, and chairs the Council on Dental Education of QCDS.

35 Dr. Gehani has served the New York State Dental Association (NYSDA) as a delegate since 2009. She
36 has also served the NYSDA Council on Dental Education and Licensure since 2007 as a member, and
37 also as a chair from 2012 to 2014. She also served on the NYSDA task force on PGY 1.

38 Dr. Gehani has been an ADA delegate since 2011 and ADA alternate delegate from 2002 to 2010. She is
39 a Fellow of Pierre Fauchard Academy, International College of Dentists and American College of
40 Dentists.

41 Dr. Gehani has maintained her private practice limited to orthodontics in Queens, New York since 1981.
42 She comes from a family of dentists and two of her children are dentists.

1 DENTAL PRACTICE

2 *Aflatooni, Nima, California, 2020.* Dr. Aflatooni currently serves as the chair of California Dental
3 Association's (CDA) New Dentist Task Force and as a member of the CDA Government Affairs Council.
4 He also currently serves on the Membership Committee and Legislative Committee of the Sacramento
5 District Dental Society. Past service includes chair of the CDA Committee on the New Dentist, District 11
6 Trustee of the American Student Dental Association (ASDA), ASDA Pacific Chapter President, and
7 University of the Pacific (UOP) Class of 2010 President. He has actively served in his community through
8 outreach programs to help the homeless and provide dental screenings to underserved populations. He
9 is a past recipient of the American Student Dental Association Student Leader Award, the UOP Herbert
10 K. Yee Scholarship Award and the Community Service Award.

11 Dr. Aflatooni is a general dentist who opened his own practice in May of last year. Dr. Aflatooni holds two
12 patents as the co-inventor of microfluidic devices. He is a graduate of the University of the Pacific Arthur
13 A. Dugoni School of Dentistry.

14 *Edgar, Linda J., Washington, 2020.* Dr. Linda Edgar is an accomplished general dentist who practices all
15 phases of general dentistry. She is a well-recognized leader having served recently as president of the
16 Academy of General Dentistry in 2014-2015. She has been active in her state dental society and state
17 dental school as well. She is well versed in most aspects of continuing education, and has chaired her
18 state dental conference. She has helped write manuals on practice management for the new dentist.
19 She has served in the ADA House of Delegates for many years. Dr. Edgar will bring a unique perspective
20 to the CDP and will be a positive force there.

21 *Liddell, Rudolph T., Florida, 2020.* Dr. Rudolph Liddell is a practicing general dentist in a small group
22 practice in Brandon, Florida. He received his undergraduate degree in engineering at the University of
23 South Florida and his D.M.D. degree from the University of Florida College of Dental Medicine in 1982.
24 He has served on the 17th District Delegation since 2011 and has shown expertise in the budgetary,
25 legislative, membership and education areas. He is very involved in the day to day operations of a four
26 dentist group practice but still finds time to take on leadership roles on all levels of the tripartite. Dr.
27 Liddell has been president of the Hillsborough County Dental Association in 2003-2004 and the West
28 Coast District Dental Association in 2009-2010. Dr. Liddell has been a trustee of the Florida Dental
29 Association (FDA) from 2010 to 2015 and is currently a line officer of the FDA. He will be president of the
30 Florida Dental Association in three years. Dr. Liddell has been a member of the FDA's Council on
31 Financial Affairs and chaired that Council from 2013 to 2015. That Council acts like the Budget and
32 Finance Committee of the ADA's Board of Trustees. It sets a budget for the organization based on the
33 strategic plan and is tasked with all audit reviews. Dr. Liddell has the ability to utilize his knowledge of all
34 aspects of running a practice and running a large statewide organization in a manner that is well received
35 by members. He will be a great asset to the Council on Dental Practice.

36 *Medovic, Michael D., West Virginia, 2020.* Dr. Michael Medovic graduated from West Virginia University
37 (WVU) School of Dentistry in 1980 and has maintained a private general dentistry practice in his home
38 town of Wheeling, West Virginia, for the past 36 years. He has served in various offices with the
39 Wheeling District Dental Society and the West Virginia Dental Association, including president of the
40 West Virginia Dental Association in 2001.

41 Dr. Medovic has served as ADA Delegate for several terms as well as serving the ADA as a member of
42 the Council on ADA Sessions from 2006 to 2009. In that capacity he also served as exhibitor relations
43 chair for the 2009 ADA annual session in Hawaii.

44 Dr. Medovic has attained Fellowship in the American College of Dentists and International College of
45 Dentists (ICD). He currently is serving as an ADA Delegate, Deputy Regent of the West Virginia section
46 of the ICD, and chairman of the Dean's Advisory Council at the WVU School of Dentistry. Dr. Medovic

has a keen interest in dental practice and will bring his considerable expertise to the Council on Dental Practice.

Wolff, Douglas S., Minnesota, 2020. Dr. Douglas Wolff will bring tremendous experience and perspective to the ADA Council on Dental Practice. Dr. Wolff has spent his entire practice life in a group dental practice. Joining a small group practice after dental school, Dr. Wolff helped build that practice into nine different locations. Recently he merged the group practice into a much larger group practice, Park Dental. Today, Dr. Wolff serves in both governance and management roles with Park Dental, the largest doctor-owned practice in the Twin Cities metro area. He is a full time practicing dentist and owner, and uses his management skills in dentist professional development, dental record reviews, dental laboratory improvement and other strategic initiatives for the dental group with 40 locations, 120 general dentists, and a staff of over 600 teammates. Dr. Wolff also serves as a member of the Minnesota State Board of Dentistry, appointed by the governor in June 2015. He also exhibits leadership experience as a clinical dental board examiner with the Central Regional Testing Service. Dr. Wolff is a respected lecturer on dental/legal issues utilizing both his dental and legal education to help others with issues affecting their dental practices. Dr. Wolff is excited to bring his knowledge and experience to serve his profession as a member of the ADA Council on Dental Practice.

ETHICS, BYLAWS AND JUDICIAL AFFAIRS

Browder, Larry F., Alabama, 2020. Dr. Larry Browder has participated as a seminar leader for D3 and D4 students during the Alabama Dental Association's Ethics Seminar at the University of Alabama School of Dentistry. He has been a member of his component society Peer Review Committee and the State Peer Review Committee.

He previously served on the ADA Council on Members Insurance and Retirement Programs. Dr. Browder has served as both alternate delegate and now a delegate to the ADA House of Delegates a total of 15 years. He has an excellent reputation as an ethical, general dentist in Montgomery, Alabama. Dr. Browder is willing to devote his time energy and considerable talents to the work of CEBJA.

Cohen, Donald F., Texas, 2020. Dr. Donald Cohen is an oral and maxillofacial surgeon who attended Baylor College of Dentistry and entered a residency with the University of Texas Dental School, and then entered private practice in 1979. After joining the Greater Houston District Dental Society he has served on the local Peer Review Committee and has also been the chair of the Texas Dental Association (TDA) Council on Ethics and Judicial Affairs. During his final year as chair, he reviewed and completed a revision of the TDA Code of Ethics. It is because of his experience with ethical behavior and oversight, including his commitment to legal affairs, Dr. Cohen is an excellent candidate to serve as a member of the ADA Council on Ethics, Bylaws, and Judicial Affairs.

Griffin, Seth W., Michigan, 2020. Dr. Seth Griffin, is a 2012 graduate of the University of Detroit Mercy (UDM) School of Dentistry, and he completed a general practice residency at Miami Valley Hospital (Dayton, Ohio) in 2013. Previously he had earned his M.A. degree in bioethics at Trinity International University (Deerfield, Illinois) and his B.S. in biology at Taylor University (Upland, Indiana). Dr. Griffin is an associate in general practice with Liebenthal Dental in Hartford, Michigan, and lead dentist for the Pokagon Band of Potawatomi Indians/Pokagon Health Services in Dowagiac, Michigan.

Although a relatively recent graduate, Dr. Griffin has already established himself as an expert in the field of bioethics, and he has contributed significantly as a board/committee member for several hospital and professional organizations. Dr. Griffin has served, or is currently serving, on the Ethics Committee for Miami Valley Hospital (Dayton, Ohio), Lakeland Hospital (Watervliet, Michigan) where he is also a member of the Board of Trustees and Lakeland Hospital (St. Joseph, Michigan). He is currently a member of the Kalamazoo District Dental Society Board. While a dental student at UDM, he served as UDM student consultant to the Michigan Dental Association (MDA) Peer Review/Ethics Committee and as a student member of the MDA Peer Review/Care and Well-Being Committee. Once he graduated from

dental school, completed his postgraduate training and moved back to Michigan, he was recruited by the MDA to serve as a dentist member of it ethics committee.

Dr. Griffin's concentration in biomedical ethics has given him a unique perspective that he readily shares with his colleagues, and in spite of him being a new dentist he has mentored a number of seasoned ethics professionals.

Dr. Griffin has much to offer as a representative to CEBJA. He fills a void with respect to diversity on the Council as a new dentist and as one who practices both within a small group practice and as a provider of dental care to a group of Native American Indians, but more importantly he brings a wealth of professional and personal experience as an accomplished ethicist to the Council.

Kurkowski, Michael A., Minnesota, 2020. Dr. Michael Kurkowski is a perfect fit to serve as a member of the ADA Council on Ethics, Bylaws and Judicial Affairs. Dr. Kurkowski has volunteered and served this role his entire professional dental career for the Minnesota Dental Association (MDA). Having served as the speaker for the MDA House of Delegates for several years, Dr. Kurkowski is seen as the expert on constitution and bylaws issues. When a member of the MDA thinks ethics, Dr. Kurkowski is instantly in their mind. This is his passion and expertise. Dr. Kurkowski has authored many articles in the MDA Dental Journal and presented many speeches on ethical issues and ethical behavior at leadership forums. As an accomplished author, he is well prepared to fulfill his duties on CEBJA to write articles to support the "Ethical Moment" of the *Journal of the American Dental Association*.

Dr. Kurkowski has been a solo general dentist in his own suburban St. Paul, Minnesota practice. He understands the daily challenges presented to practitioners. Dr. Kurkowski has the experience, background and passion to serve the ADA to help its members maintain ethical and professional conduct in the practice and promotion of dentistry.

Dr. Kurkowski has also served on his component and state peer review committees. He is comfortable working with members in resolving problems, disputes and appeals of issues related to providing ethical and excellent dentistry. He has a reputation of fairness and sound judgment to help our members come to the correct conclusion.

Soileau, Kristi M., Louisiana, 2020. Dr. Soileau has served as Louisiana Dental Association (LDA) president and has been a long time member of the LDA Board of Directors.

Dr. Soileau had received a partial scholarship from the American College of Dentists in order to pursue a masters in health sciences education. She continues to be a strong supporter of the ethics and values of being a member of the profession of dentistry, ADA member, and member of multiple fellow organizations that all support the highest values as a member of CEBJA.

Lastly, Dr. Soileau has served as a delegation secretary for the last four years and chaired two of our reference committee evaluation committees. Dr. Soileau is a member in good standing and will serve the Council on Ethics, Bylaws, and Judicial Affairs in an excellent manner and will represent the American Dental Association in the highest presentation.

GOVERNMENT AFFAIRS

Bishop, Deborah S., Alabama, 2020. As a past president of the Alabama Dental Association, Dr. Deborah Bishop has served on the Council on Legislation, Board of Trustees and Executive Committee. Those three bodies set Alabama Dental Association annual legislative priorities and make decisions on developing legislative issues. She has attended the ADA Lobbyist Conference numerous years at her own expense because of her continuing interest in state and national dental issues. She has attended the Washington Leadership Conference as a representative of the Alabama Dental Association and has served as a delegate to the ADA House of Delegates from 2010 to the present. Dr. Bishop currently serves as an at-large member of the Alabama Dental Political Action Committee, Board of Directors.

1 *Desrosiers, Mark B., Connecticut, 2020.* Dr. Mark Desrosiers has been very involved with his state
2 political action committee (COPAC) since 1999 and has served as chair as well as an Action Team
3 Leader and coordinator. He has been very active with legislative issues for the Connecticut State Dental
4 Society and the American Association of Endodontists. From 2008 to 2012 he was the AAE
5 representative to ADPAC. His involvement in organized dentistry has been mostly in the political and
6 legislative area, making him a strong candidate for the Council on Government Affairs.

7 *Fijal, Phillip J., Illinois, 2020.* Dr. Phillip Fijal is a graduate of Loyola University School of Dentistry where
8 he received his D.D.S. degree in 1986. Dr. Fijal is currently president-elect of the Chicago Dental
9 Society; and served on the Illinois State Dental Society Board of Trustees from 2009 to 2012. He is a
10 Fellow of the following dental organizations: the American College of Dentists, International College of
11 Dentists, Odontographic Society of Chicago, and Academy of General Dentistry. Dr. Fijal has served as
12 chair of the Dental Advisory Board for Northwest Community Hospital in Arlington Heights, Illinois, and as
13 president of the board of directors for the Jeffery Pride Foundation for Pediatric Cancer Research. Dr.
14 Phillip Fijal is nominated without reservation, to serve on the Council on Government Affairs.

15 *Hennessy, Rhonda M., Michigan, 2020.* Dr. Rhonda Hennessy is a current member of the Michigan
16 Dental Association (MDA) Board of Trustees, serving the second year of a three year term. She chaired
17 the MDA's Committee on Government and Insurance Affairs from 2011 to 2015 and now serves as MDA
18 board liaison to that committee. Dr. Hennessy was a member of the Michigan Board of Dentistry from
19 2004 to 2012 and served as chair from 2007 to 2010. She has been a member of the MDA For-Profit
20 Subsidiary's Endorsed Services Committee since 1998. She was the Governor's appointee to the
21 Michigan Controlled Substance Advisory Committee from 2006 to 2012.

22 Throughout her career, Dr. Hennessy has been involved in governmental affairs, legislative matters and
23 regulatory issues. She is well versed in developing and implementing administrative rules. She has
24 attended the Washington Leadership Conference numerous times and has participated in visits with
25 members of Congress on countless occasions as an advocate for issues important to dentistry, dental
26 students, dental education and science. Dr. Hennessy is well known at both the state and national level
27 within the Democratic Party, and in 2008 she served as a Michigan delegate to the Democratic National
28 Convention. She is a personal friend of several current and past political leaders and has held
29 fundraisers in their behalf, including former Michigan Governor Jennifer Granholm; Former U.S. Senator
30 Carl Levin; former Congressman John D. Dingell; current U.S. Senator Debbie Stabenow and current
31 Congresswoman Debbie Dingell.

32 Dr. Hennessy is a practicing general dentist in Holly, Michigan. She is extremely qualified to serve as a
33 member of the ADA Council on Government Affairs.

34 *Kalarickal, Zacharias J., Florida, 2020.* Dr. Zacharias Kalarickal graduated from Case Western Reserve
35 with a D.D.S. degree in 1999. He entered the U.S. Navy upon graduation undergoing an AEGD
36 Residency at Camp Lejeune in North Carolina. After his commitment to the Navy, he came to the Tampa
37 area to set up practice in general dentistry. Dr. Kalarickal has a passion for service and has taken lead
38 roles in developing communication plans for such events as the Florida Mission of Mercy, community
39 outreach programs for various organizations and access to care programs for veterans and others in
40 need. He has served on the Florida Dental Association's Governmental Action Committee that develops
41 and guides pieces of legislation that affect the profession of dentistry in Florida. He is active in FDAPAC
42 helping to organize the Dentist Day on the Hill in Florida and is a great communicator on behalf of
43 dentistry.

44 Dr. Kalarickal is active in ADPAC by being the Action Team Leader for Rep. Gus Bilirakis. He and
45 Congressman Bilirakis have been working on a piece of national legislation concerning dental care for
46 veterans. Veterans are often overlooked when it comes to proper oral care and developing good oral
47 habits. This legislation is designed to alleviate some of the dental needs experienced by our veterans.

1 Dr. Kalarickal has been on the 17th District Delegation to the ADA since 2006. He is looked upon for his
2 leadership in legislative matters and has always worked diligently on developing resolutions that will
3 advance the profession of dentistry.

4 Dr. Kalarickal is a graduate of the ADA's Institute for Diversity in Leadership. He has maintained effective
5 communication with several of the alumni of the Institute and is currently serving as a consultant to the
6 Board of Trustee's Diversity and Inclusion Committee. His diverse background is a strength that brings
7 awareness to all those who come in contact with him. He is genuinely caring, has a great background in
8 political issues and has a unique style of communication that gets his message heard.

9 MEMBERS INSURANCE AND RETIREMENT PROGRAMS

10 *Johnston, Jon J., Pennsylvania, 2020.* Dr. Jon Johnston brings extensive knowledge of employment
11 practices, professional liability, property and worker's compensation insurance through the completion of
12 his term as member and chairman of the Board of Directors of Pennsylvania Dental Insurance Services.
13 His experience also includes being a past president of the Pennsylvania Dental Association (PDA) and
14 serving on its Board of Trustees. Dr. Johnston has previously participated as a member of the PDA
15 Council on Government Relations, Dental Education and Practice, Dental Benefits Advisory Group and
16 Direct Reimbursement Task Force. He has also served for many years as a delegate and alternate
17 delegate to the PDA and ADA House of Delegates and as a past member of the ADA Council on Dental
18 Practice.

19 *Kido, Scott H., Idaho, 2020.* Dr. Scott Kido is a past president of the Idaho State Dental Association
20 (ISDA) and a current ADA delegate for the 11th District. Dr. Kido has proven his commitment to organized
21 dentistry with very active state and component level contributions including chair of the statewide sealant
22 program, GKAS organizer, Idaho Oral Health Alliance, and Medicaid consultant. He has also been
23 recognized in his community and state as a recipient of the Bollinger Christofferson Foundation Award for
24 Outstanding Contributions to Community Dentistry in 2004, the Bob LeBow Community Health Award in
25 2007, the ISDA President's Award in 2004 and 2008 along with the ISDA Lifetime Achievement Award in
26 2010. Dr. Kido is currently in active clinical practice. He is a current participant in Great-West Products
27 and would bring a user's point of view as well as understanding the member benefit side as an
28 experienced leader. Dr. Kido is a dedicated and hardworking professional that will contribute to the
29 Council on Members Insurance and Retirement Programs.

30 *Olenyn, Paul T., Virginia, 2017.* In December, 2015, Dr. Paul Olenyn was appointed to complete the
31 unexpired term of Dr. Larry J. Ferguson as a member of the Council on Members Insurance and
32 Retirement Programs. Dr. Olenyn has been in the private practice of general dentistry since 1975 when
33 he graduated from Georgetown School of Dentistry. He is an active member in numerous professional
34 organizations where he has served in many leadership positions. He has served as an alternate delegate
35 to the ADA House of Delegates from 2012 to the present. His most important qualification for this council
36 position is that he has served on the MetLife Dental Advisory Committee for over ten years. He will bring
37 a unique insight to the Council deliberations.

38 *Sterritt, Frederic C., New Jersey, 2020.* Dr. Frederic Sterritt is a past president of the New Jersey Dental
39 Association. He served the ADA as a delegate and served on several ADA reference committees. He
40 served on the ADA Council on Government Affairs and chaired that Council in his fourth year. He served
41 on the University of Medicine and Dentistry of New Jersey Board of Trustees, which has over 5,000
42 employees. As a member of that board he served as the president of the university health plan. In these
43 roles Dr. Sterritt became very familiar with the inner workings of many health and retirement plans. These
44 qualifications will make him an excellent addition to the Council on Members Insurance and Retirement
45 Plans.

46 *Tota, Christopher M., New York, 2020.* Dr. Christopher Tota has served the American Dental Association
47 very well for many years. He has been the president of the Ninth District Dental Association. He also

served as chair of the New Dentist Committee of the Ninth District Dental Association. In addition, he served on the Ninth District Dental Association Audit, Budget, and Finance Committee from 2005 to 2010.

Dr. Tota served on the New York State Dental Association House of Delegates Reference Committee, served as caucus chair for the Second Trustee District at the American Dental Association as well as delegate both to the American Dental Association and the New York State Dental Association. Dr. Tota, served on the American Dental Association Reference Committee on Budget, Business and Administrative Matters at the American Dental Association 2015 House of Delegates Meeting. He is a Fellow of The Pierre Fauchard Academy, International College of Dentists, and the American College of Dentists.

White, Cecil, Jr., Florida, 2020. Dr. Cecil White is a periodontist from Jacksonville, Florida who has been engaged in the process of giving back to the profession of dentistry and to his community since graduation from the University of Florida College of Dental Medicine in 1981. Dr. White has devoted much of his career to service in the US Navy. He has been a commander in the Navy Dental Corps for much of his career and had been stationed at the Naval Branch Dental Clinic at Mayport, Florida from 2003 to 2012. While at the Mayport base in Jacksonville, Dr. White became very involved in organized dentistry becoming the Northeast District Dental Association's representative to the Council on Financial Affairs of the Florida Dental Association. He became chair of that council for two of his several years of service at that position. He also became president of the Jacksonville Dental Society (2011-2012), and has been heavily involved in various committees of the American Association of Periodontology.

Dr. White is a well-spoken, highly respected individual who is methodical in nature and studies all sides of an issue before making a decision. His knowledge of the financial obligations of a large state dental association and his deliberate method of decision making should lend well to this Council.

MEMBERSHIP

Chatterjee Kirk, Pia, Mississippi, 2020. Dr. Chatterjee Kirk has been a member of the ADA her entire dental career. She is a full-time faculty member at the University of Mississippi School of Dentistry. Beyond that important accomplishment, she has demonstrated over and over her desire to serve her profession through her volunteer work and leadership outside the dental school. Not only does she serve in many professional circles, she is also a very involved community volunteer. She has served on the Mississippi Dental Association (MDA) Board in the role of editor for the past three years. In addition to her leadership in the MDA, she has served as president of the Mississippi Association of Women Dentists. She has been instrumental in encouraging both women and graduating dentists to become involved in organized dentistry. Dr. Chatterjee Kirk is a graduate of the ADA Institute for Diversity in Leadership. She understands the importance of professional health care organizations that represent and work on behalf of members. She is very experienced in dealing with numerous types of dental health care professionals and is able to connect with them by understanding their perspectives as they relate to dentistry. Due to her own personal experience in dental academics as well as her clinical expertise, she is able to understand and represent the needs of future dentist members of the ADA.

Freedman, I. Jay, Pennsylvania, 2020. Dr. Jay Freedman currently serves as the vice-chair of the Pennsylvania Dental Association Council on Membership. He has been an active participant and speaker at the ADA Recruitment and Retention Conference and component lead for the Montgomery-Bucks Dental Association's Give Kids a Smile Program since 2012. He is also the co-founder of the "Give Vets a Smile" program and the award-winning membership recruitment and retention billboard campaign in his local community. Dr. Freedman has been a member of the executive board of the Montgomery-Bucks Dental Association since 2007, serving as its president in 2012. He currently teaches residents in the Advanced General Practice Residency Program at the Abington Memorial Hospital and has been an alternate delegate to the ADA House of Delegates for the past several years. Dr. Freedman brings extensive knowledge and experience from his constituent and component dental societies to the ADA Council on Membership.

1 *Hanlon, Mary Jane, Massachusetts, 2020.* Dr Mary Jane Hanlon has an extensive background in
2 organized dentistry coupled with her position as assistant dean, Predoctoral Clinic Administration where
3 the future of dentistry is before her on a daily basis. She brings skills to connect with new members as
4 well as contribute to the goals and vision of the Council to increase the membership of the ADA. Her
5 experience in organized dentistry, her MBA, and her initial education in dental hygiene make her a well-
6 rounded addition to the Council on Membership.

7 *Kampfe, Mark I., South Dakota, 2020.* Dr. Mark Kampfe has the desire and ability to convey the value of
8 membership to a non-member or a member who has chosen to drop their membership in the American
9 Dental Association. Dr. Kampfe will bring a mature perspective to the Council on Membership as he has
10 practiced in three Midwest states. Currently Dr. Kampfe practices in the state of South Dakota. For the
11 past decade, 95% of the dentists in South Dakota belong to the South Dakota Dental Association and
12 ADA.

13 Dentists in South Dakota expect all dentists in their state to be members in organized dentistry. They are
14 not afraid to pick up the phone and invite a non-member to a district, state or study club meeting. It is this
15 one-on-one contact that has been successful in maintaining this high percentage of membership. Dr.
16 Kampfe is a good thinker with great ideas to demonstrate the values of membership in the ADA; be it
17 emphasizing the importance of advocacy or being innovative in helping to restructure our pricing
18 structure. Dr. Kampfe has many years of experience as a leader in organized dentistry and is ready to
19 put his talents to work to help the ADA achieve the 2020 strategic plan goal of a 70% membership.

20 *Riordan, Danielle M., Missouri, 2020.* Dr Danielle Riordan has accomplished quite a bit in a short period
21 of time. She has volunteered her services both as a clinical dentist and as a member of several boards
22 and committees. She is a very well respected leader in organized dentistry in several roles at the Greater
23 St. Louis Dental Society and the Missouri Dental Association. She serves as well on the Board of
24 Directors of Give Kids a Smile and on the Board of Directors of The Foundation of the Missouri Dental
25 Association. Her potential to contribute significantly more to the profession of dentistry is evident in her
26 drive to continually improve both herself as a dentist and the profession she loves. She will make a fine
27 addition to the Council on Membership.

28 **NEW DENTIST COMMITTEE**

29 *Greene, Colleen, Wisconsin, 2020.* Dr. Colleen Greene is a 2013 graduate of the Harvard School of
30 Dental Medicine. She also holds an M.P.H. degree in Health Care Management which she received from
31 the Harvard School of Public Health in 2011. She completed postgraduate residency training in pediatric
32 dentistry at the Children's Hospital of Wisconsin in 2015. Dr. Greene, a native of Michigan, is currently
33 employed as a pediatric dentist at Children's Hospital of Wisconsin, where she has been a full-time
34 faculty member in the pediatric residency program since July 2015. Dr. Greene also works part-time as a
35 dentist at Forward Dental in Oconomowoc, Wisconsin.

36 Dr. Greene served as national president of the American Student Dental Association (ASDA) (2012-
37 2013), and in 2014 she was co-chair of the ASDA National Leadership Conference. She has also served
38 as a member of ASDA's Editorial Board. From 2010 to 2012 Dr. Greene served as ASDA's Liaison to the
39 ADA Council on Communications, and from 2011 to 2012 she was part of ASDA's 11 member delegation
40 to the ADA House of Delegates.

41 Contributing to organized dentistry has been a priority of Dr. Greene since her first semester of dental
42 school when she was Harvard's co-chair for Give Kids a Smile. She has since been a strong advocate
43 and an accomplished spokesperson for the dental profession. From 2011 to 2013 at the invitation of
44 JADA Editor, Dr. Michael Glick, Dr. Greene was the first dental student to have served as a member of
45 the Journal's Editorial Board.

46 As a member of the ADA New Dentist Committee, it is Dr. Greene's primary goal to focus on mentorship
47 and membership, which she considers both equally central to the identity and future success of the dental

profession. Dr. Greene brings a unique perspective as an employee of a large group practice in an organization committed to public health and as a result will contribute to the overall diversity of the Committee.

Her ties to both Michigan and Wisconsin make her the ideal candidate to serve the Ninth District as its representative to the New Dentist Committee where she will maintain strong connections with the dental students and new dental graduates of Marquette, Detroit Mercy and the University of Michigan. In this new role Dr. Colleen Greene will contribute vastly to the mission of the ADA as a member of its New Dentist Committee.

Matin, Britany F., Alabama, 2020. Dr. Britany Matin is a 2012 graduate of the University of Alabama (UAB) School of Dentistry and completed her M.S. in periodontology in 2015 at the UAB School of Dentistry. Dr. Matin has previous work experience in the dental office as a dental assistant and presently as a new dentist in solo private practice. She was an ASDA member at the UAB School of Dentistry and was an ADPAC dental student member. Dr. Matin is a charter member of the UAB School of Dentistry, Alabama Hispanic Dental Association. She is eager to serve on the ADA Council on the New Dentist Committee and is willing to devote the time, effort and energy expected of her as a Council Committee member.

Mattingly, Emily A., Missouri, 2020. Dr. Emily Mattingly graduated from UMKC School of Dentistry in 2012. She has since joined the McCoy, Samples, and Mattingly Dental Clinic team. Originally from Chillicothe, Missouri, Dr. Mattingly is a fourth generation dentist. She is the daughter of Dr. Rolfe McCoy and granddaughter of Dr. Chad McCoy. Her great-grandfather was a practicing dentist in Albany, Missouri.

Dr. Mattingly enjoys being involved in organized dentistry. She is a member of the ADA, the Missouri Dental Association (MDA), and the Northwest Dental Society (NWDS). She has served as delegate, alternate delegate, and committee member at the MDA House of Delegates. In addition she also serves on the New Dentist Committee of the MDA as vice chair and will be the 2017-2018 chair. At the national level, Dr. Mattingly is a delegate for the ADA House of Delegates.

Quarley, Tricia S., New York, 2017. In February, 2016, Dr. Tricia Quarley was appointed to complete the unexpired term of Dr. Kendra Zappia as a member of the New Dentist Committee. Dr. Quarley is a 2009 graduate of the University of Medicine and Dentistry, New Jersey. She is chair of the Committee of New Dentists at the Second District Dental Society, a component society of the New York State Dental Association. Dr. Quarley was very much involved in coordination of the NYSDA New Dentist meeting held in Brooklyn in June 2016. She also serves as a member and chair of the Second District Dental Society. She has held several leadership positions in the National Dental Association.

In 2009, Dr. Quarley was named the Resident of the Year at Lutheran Medical Center, and in 2010, was the recipient of the Executive Women of New Jersey Scholarship.

Dr. Quarley is a member of the 2016 Class of the ADA Institute for Diversity in Leadership. She will make an excellent addition to the New Dentist Committee.

Shisler, Adam C., Texas, 2020. Dr. Adam Shisler is from Houston, Texas. After graduation from the University of Oklahoma, Dr. Shisler didn't pursue dental school right away, instead he taught fourth and eighth grade science with Teach For America in Houston after Hurricane Katrina. He then attended the University of Texas School of Dentistry at Houston. After finishing dental school he completed his specialty training in pediatric dentistry at the University of Texas School of Dentistry at Houston. Dr. Shisler affiliated with Cammarata Pediatric Dentistry Group in 2012. Dr. Shisler has been involved at many local, state and national levels with dentistry including being elected to serve as the national American Student Dental Association President in 2011. His other offices include the Greater Houston Dental Society's Legislative Action Committee co-chair, Recruitment and Retention chair, a member of the Texas Dental Association's Dental Education, Trade & Ancillaries (DETA) Council and currently

1 serving on the ADA Dental Wellness Advisory Committee. Dr. Adam Shisler is uniquely qualified to serve
2 as a member of the New Dentist Committee.

3 *Stuefen, Sara E., Iowa, 2020.* When asking the state presidents at last year's district caucus who would
4 be the best candidate for the opening in the ADA District 10 New Dentist Committee, hands down the
5 recommendation was Dr. Sara Stuefen.

6 Immediately after graduation from dental school, Dr. Stuefen became involved with the Iowa Dental
7 Association (IDA). Currently she serves as the chair of the IDA's New Dentist Committee (NDC). Dr.
8 Stuefen has a passion for her chosen profession of dentistry and finds participating in organized dentistry
9 very rewarding. She has already taken leadership roles in issues of dental education and dental
10 legislative activity. She enjoys working with the IDA NDC, interacting and networking with dentists who
11 are excited about the future of dentistry. She wants the best for her chosen profession and believes that
12 building a foundation of engaged new dentists is one of the keys. Serving on the ADA New Dentist
13 Committee will allow her to continue this mission.

14 **SCIENTIFIC AFFAIRS**

15 *Fontana, Margherita R., Michigan, 2020.* Dr. Margherita Fontana, is a renowned international leader in
16 cariology research and tenured professor at the University of Michigan. She received her D.D.S. from the
17 Universidad Central de Venezuela in 1989 and her Ph.D. in Dental Sciences from Indiana University in
18 1996. From 2011 to 2012 she was a fellow of the Hedwig van Ameringen Executive Leadership in
19 Academic Medicine Program for Women at Drexel University College of Medicine.

20 Dr. Fontana has served the ADA and its Council on Scientific Affairs in a variety of ways. She has been
21 an ADA consultant for its Caries Risk Assessment Tool and Sealant Review Panel as well as a consultant
22 for the ADA's Caries Risk Terminology Group. She has been a consultant to the CSA, and a member of
23 the CSA's steering committee for the updated ADA "Evidence-Based Clinical Recommendations for the
24 Use of Pit-and-Fissure Sealants." She is currently a member of the Dental National Scientific Advisory
25 Committee. Dr. Fontana has also served as a consultant to numerous corporate entities.

26 Dr. Fontana has an impressive record of research accomplishments, having received nearly \$18 million in
27 NIH grants and contracts, nearly \$24 million in corporate-sponsored grants and over \$.5 million in
28 university grants. She has twenty years' combined teaching experience at Indiana University and the
29 University of Michigan and she has more than 269 peer-reviewed professional publications.

30 Aside from her impressive array of professional qualifications, Dr. Fontana's Hispanic heritage would
31 make her uniquely qualified and add immensely to the diversity of the Council on Scientific Affairs.

32 *Geisinger, Maria L., Alabama, 2020.* Dr. Maria Geisinger has the expertise, leadership and motivation
33 necessary to successfully serve on the ADA Council for Scientific Affairs. She is a Board Certified
34 Periodontist and has over 13 years of experience in clinical and translation research. Prior to entering
35 academia, she was in full-time private practice and has maintained an intramural private practice
36 throughout her time in academics. She has been on the faculty of the University of Alabama at
37 Birmingham for eight years and currently serves as the director for Advanced Education in Periodontology
38 and director of Faculty Development and Support. She is currently the principal investigator of three
39 ongoing clinical and translational research projects and serves as a co-investigator on six other ongoing
40 projects. Her research is focused around the interface between periodontal infections and inflammation
41 and systemic health as well as advanced biomaterials in dental implantology and periodontal regenerative
42 grafting. These interests have allowed her to work together on many interdisciplinary collaborations,
43 allowing her to gain a greater understanding of myriad disciplines within dentistry, medicine, engineering,
44 and public health.

45 She also currently serves as the vice president of the American Academy of Periodontology Foundation
46 (AAPF), a non-profit organization which aims to improve the periodontal and general health of the public

1 through increasing public and professional knowledge of periodontal diseases and their therapies,
2 stimulating basic and clinical research to generate new knowledge, and enhancing educational programs
3 at all levels to create opportunities in periodontal education and practice. The AAPF was the recipient of
4 the 2014 William J. Geis award for Outstanding Achievement in support of dental education and research.
5 Currently the retention rate of AAPF award recipients in academic research is 97% and the AAPF has
6 awarded over \$5 million in educational scholarships and fellowships to support dental research. Dr.
7 Geisinger is both a trustee in the AAPF and also a past award recipient, and through her work, is able to
8 evaluate and support young investigators and nascent research projects that she believes will positively
9 alter the practice of dentistry.

10 One of her greatest strengths is her combination of inspiration and exuberance of youth tempered with
11 her outstanding research experience bringing the ADA a unique opportunity to generate and evaluate
12 fresh ideas and their potential to stimulate innovative responses and directions. Yet she retains the ability
13 to listen to other points of view and is open – a team player.

14 As a young woman she represents an example of our commitment to diversity. Diversity aside, her
15 outstanding qualifications speak well of our future in dental research and advancement and stand alone
16 as more than qualifying her for the Council. She has been an unselfish ambassador to dentistry and the
17 ADA not only by her multiple committee involvements but by being more than willing to gratuitously give
18 presentations to local, state and national organizations. She is sought out at such meetings not only due
19 to her knowledge and expertise, but being a practicing dentist she has that talent to relate her scientific
20 perspective in a clear and understandable manner to the practicing dentist. The clinical application of her
21 research has always been important to her (translational research). Dr. Geisinger has shown a dedicated
22 work ethic and commitment to every task and project given to her with a commitment to her assignment
23 which is second to none. Always giving 100%. She fits all criteria the Council is looking for in a new
24 member. Below are the words of Dr. Geisinger discussing her nomination to the Council.

25 “I fundamentally believe that research is at the core of developing and maintaining
26 our expertise as healthcare providers and my focus and emphasis is to work to
27 develop and continue to perform dental research that changes the way we do
28 business in dentistry. Research that is informed by clinical problems and then seeks
29 to provide practical answers to the problems facing dentistry is critical to our patients,
30 our communities, and to our profession. I seek to serve on the ADA Council

31 *Jefferies, Steven R. Pennsylvania, 2020.* In June, 2015, Dr. Steven Jefferies was appointed to complete
32 the unexpired term of Dr. John Ludlow, North Carolina, as a member of the Council on Scientific Affairs.
33 Dr. Steven Jefferies holds a Bachelor of Arts in Biology from Johns Hopkins University, a Master of
34 Science in Chemical and Biochemical Engineering from Rutgers University, a Doctor of Dental Surgery
35 from the Baltimore College of Dental Surgery and a Doctor of Philosophy in Dentistry from the School of
36 Dentistry, Medical University of South Africa Campus, University of Limpopo, South Africa. He also
37 completed a general practice residency at the United States Public Health Service Hospital in New
38 Orleans. After completing the General Practice Residency (GPR) in the United States Public Health
39 Service, Dr. Jefferies was in full-time private general practice for almost 6 years.

40 Dr. Steven R. Jefferies is the Donald and Cecelia Platnick Professor, Department of Restorative Dentistry,
41 Kornberg School of Dentistry, where he is also director of Clinical Research and the director of the
42 Biomaterials Research Laboratory. He has held several adjunct and visiting faculty appointments,
43 including presently an academic position as professor/lecturer in the Advanced General Dentistry
44 Program at the University of Maryland Dental School Baltimore. In addition to serving as a professor in
45 the Department of Restorative Dentistry, he is also currently associate dean for Research and Graduate
46 Education at Temple's Kornberg School of Dentistry.

47 Prior to his current full-time academic position, Dr. Jefferies completed almost twenty years of service with
48 Dentsply International; having served as corporate vice president for Advanced Technology, vice
49 president of Corporate Product Development, and as director of Clinical Research for Dentsply's Caulk

1 Division in Milford, Delaware. Over the years, he has been a consultant on biomaterials research to the
2 Johns Hopkins Department of Surgery, and as an independent consultant for clinical/applied
3 bioengineering and biotechnology. Dr. Jefferies holds 29 U.S. Patents relating to dental procedures and
4 dental materials. He has published 45 scientific papers in peer-reviewed academic journals as well as
5 over 30 abstracts. He has presented programs, lectures and seminars on dental and biomaterials on
6 more than 100 occasions, both nationally and internationally.

7 *Keels, Martha Ann, North Carolina, 2020.* Dr. Martha Ann Keels received her dental degree from the
8 University of North Carolina, Chapel Hill. She was one of the first recipients of the NIH Dentist-Scientist
9 Award, which funded her specialty training in Pediatric Dentistry and a Ph.D. in Epidemiology at the
10 University of North Carolina. She is board certified in pediatric dentistry and has served on the board's
11 examination committee since 2008.

12 She is an adjunct associate professor in Pediatrics at Duke University School of Medicine and an adjunct
13 associate professor in Pediatric Dentistry at the University of North Carolina School of Dentistry. She has
14 been in private practice in Durham, North Carolina, since 1990.

15 Dr. Keels holds fellowships in the American Academy of Pediatric Dentistry, American College of Dentists
16 and the International College of Dentists. As a dental student, she was elected to membership in OKU
17 Honor Dental Fraternity. She has served as president of the North Carolina Academy of Pediatric
18 Dentistry on the editorial board of the *Journal of Pediatric Dentistry* and on the Council of Scientific Affairs
19 and Clinical Affairs for the Academy of Pediatric Dentistry. She was chair of the Section of Oral Health
20 within the American Academy of Pediatrics from 2004 to 2010. She was the recipient of the American
21 Academy of Pediatrics Oral Health Award in 2012.

22 Dr. Keels is presently a co-investigator on a multi-center study along with Dr. Margherita Fontana and Dr.
23 Steve Levy on the first ever prospective study of caries risk assessment in a pediatric population. This
24 study is funded by the NIH-NIDCR and received the Presidential Award in 2013. She is also funded by
25 the NIH as part of the Undiagnosed Diseases Network study which is a gene mapping study dedicated to
26 determine a diagnosis for children who to date have not been given a clinical diagnosis. Her other
27 research interests include dental acid erosion, pediatric periodontal disease and dental care for children
28 with special health care needs. She developed one of the clinical scales used nationally to record the
29 level of dental acid erosion chairside as well as the matrix for facilitating the diagnosis of periodontal
30 disease in children.

31 She has also lectured extensively across the USA and in Europe on a variety of topics including fluoride,
32 caries risk assessment, dental eruption problems, pediatric periodontal disease and dental acid erosion.
33 Her knowledge of fluoride comes from her post-doctoral research with Dr. Brian Burt studying the effects
34 of the city of Durham, North Carolina, accidentally cutting off fluoride in the city water for one year. They
35 were funded by the NIH for six years examining the fluorosis and dental caries risk from this accident.
36 She lectures on dental trauma and published in Pediatrics the first ever guidelines for management of
37 dental trauma for pediatricians in 2014. All of her research projects have been joint efforts with other
38 scientist demonstrating her ability to work effectively and respectfully with a team which is required by
39 ADA-CSA.

Resolution No. 61 NewReport: N/A Date Submitted: August 2016Submitted By: Council on Ethics, Bylaws and Judicial AffairsReference Committee: D (Legislative, Health, Governance and Related Matters)Total Net Financial Implication: None Net Dues Impact: Amount One-time Amount On-going FTE 0

ADA Strategic Plan Objective: Organizational Capacity-Obj. 6: Role and responsibility of each element of the tripartite clearly defined and agreed upon

How does this resolution increase member value: See Background

1 **ADA CONSTITUTION AND BYLAWS REVIEW PURSUANT TO RESOLUTION 118H-2014**

2 **Background:** This report transmits proposed amendments to the ADA *Constitution* to the House of
3 Delegates, to be held over for a vote in 2017. The report further provides the House with a status report
4 of the work to date of the Council on Ethics, Bylaws and Judicial Affairs (the Council or CEBJA) and its
5 *Bylaws* rewrite task force (the task force) in overhauling the ADA *Constitution and Bylaws* pursuant to
6 118H-2014.

7 At the 2014 House of Delegates, during the debate on the resolution, Dr. Rosato, then chair of the
8 Council, estimated that the rewrite process would take two and one-half (2½) to three (3) years to
9 complete (*Trans.*2014:446). The Council believes it will meet that timeline and that the revised ADA
10 *Constitution and Bylaws* will be given to the 2017 House of Delegates for adoption. This report is
11 provided to summarize the work that has been accomplished to date and summarize the tasks that
12 remain to be completed in the ensuing year.

13 The Council wishes to acknowledge, with appreciation, the continuing work of the former and current
14 members of its task force: Dr. Rickland G. Asai, Dr. Douglas A. Auld, Dr. Darryll L. Beard, Ms. Paula
15 Cohen, Dr. Judith M. Fisch, Dr. Michael H. Halasz, Dr. Linda K. Himmelberger, Dr. Emily Ishkanian, Dr.
16 G. Jack Muller II, Dr. Kirk M. Norbo, Dr. L. Stephen Ortego, Dr. Niveditha Rajagopalan, Dr. Petra von
17 Heimburg, Dr. William M. Walton and Dr. Mark R. Zust. The Council also wishes to acknowledge the
18 invaluable assistance of former Council member Dr. Walter I. Chinoy in the *Bylaws* revision process.

19 *Status of the Rewriting of the ADA Constitution and Bylaws.* In late 2014, in response to Resolution
20 118H-2014 (*Trans.*2014:446), the Council formed its task force to review the current ADA *Constitution*
21 *and Bylaws* and develop proposals for revising those governance documents. Task force members are
22 current and former Council members, the Council's New Dentist Committee member, the Council's liaison
23 from the American Student Dental Association and three members of the Board of Trustees, all of whom
24 are former members of the Council. Many of the non-trustee members of the task force are delegates to
25 the ADA House of Delegates, hold or have held volunteer leadership positions in their state dental
26 societies and have significant experience with the ADA *Bylaws*.

27 At its initial meeting in February 2015, the task force discussed ways to accomplish the formidable task of
28 overhauling the *Constitution and Bylaws* and determined the best way to proceed would be to divide the
29 task force into three separate reviewing groups, each of which would conduct an independent initial
30 review of and propose revisions to approximately one-third of the ADA *Constitution and Bylaws*. It was

1 then planned that the initially reviewed material would be reviewed and revised by the remainder of the
2 task force members.

3 Throughout 2015, the task force reviewing groups reviewed the *Constitution and Bylaws* material
4 assigned to them. During the course of the reviewing process, two Chapters of the *Bylaws* were
5 identified as capable of being deleted in their entirety because the Chapters contained material that was
6 not part of the fundamental governance framework of the ADA. At the urging of the task force, the
7 Council proposed that Chapters XIX and XXI of the 2015 *Bylaws*, relating to the Alliance of the American
8 Dental Association and rules of construction of the *Constitution and Bylaws*, should be entirely eliminated;
9 those resolutions were adopted by the 2015 House of Delegates, Resolution 4H-2015 (*Trans.*2015:276)
10 and Resolution 5H-2015 (*Trans.*2015:270).

11 In early 2016, the task force convened a meeting to review the work of each of the three reviewing
12 groups. While each group had worked diligently and proposed meaningful and appropriate revisions to
13 the portions of the ADA *Constitution and Bylaws* assigned to it, when the work of the three groups were
14 assembled as a whole, it was the consensus of the task force that Resolution 118H-2014 demanded
15 more significant and extensive revisions than those proposed by the reviewing groups.

16 Ultimately, the task force concluded that all operational and procedural material should be removed from
17 the ADA *Constitution and Bylaws* and placed in an ancillary document or documents, with the ultimate
18 goal of revising the *Constitution and Bylaws* so that they consist of only the fundamental governance
19 rules of the ADA. The task force believes that it is appropriate to remove the operational and procedural
20 material presently in the ADA *Bylaws* and to place material related to the House of Delegates in the
21 *Manual of the House of Delegates*. The remaining material removed from the ADA *Bylaws* will be
22 assembled into a new, well indexed document provisionally entitled the *Governance and Organizational*
23 *Manual of the American Dental Association* ("the *Governance Manual*").

24 Following the discussions of the task force, the 2016 ADA *Constitution and Bylaws* was once again
25 reviewed from beginning to end to implement the more extensive revisions desired by the task force.
26 Those revisions were completed in May 2016 and the remaining material in the *Bylaws* edited for
27 cohesiveness. The result was a proposed set of *Bylaws* that was eighteen (18) pages in length, down
28 from the current seventy nine (79) pages. This revision was then distributed to the entirety of the task
29 force and reviewed during an in-person meeting of the task force in June 2016, during which additional
30 material was deleted, leaving the *Bylaws* at slightly more than fourteen (14) pages in length. The
31 amendments to the ADA *Bylaws* proposed by the task force have been reviewed and provisionally
32 approved by the Council.

33 The task force has also proposed a handful of revisions to the ADA *Constitution*. Apart from a few
34 revisions proposed to streamline the language of the *Constitution* and to remove specific *Bylaws* Chapter
35 references in the *Constitution*, the revisions are proposed to align the language of the *Constitution* with
36 the revised *Bylaws*. The amendments to the *Constitution* proposed by the task force have been reviewed
37 and approved by the Council and are presented to the House in this report. Pursuant to Article VIII of the
38 ADA *Constitution*, it is requested that this resolution be laid over and considered by the 2017 House of
39 Delegates together with the amendments to the ADA *Bylaws* that will be presented next year.

40 The revised version of the ADA *Constitution* is attached to this report as **Appendix 1**.

41 An additional factor that was present in conducting the review of the ADA *Constitution and Bylaws* was
42 83H-2015 (*Trans.*2015:274). That resolution, which has been referred to the Council on Membership,
43 calls for a proposal for rewriting the membership chapter of the *Bylaws* (Chapter I) so that barriers to
44 membership are removed. The Council on Membership has collaborated with CEBJA regarding its
45 proposal; CEBJA understands that the Council on Membership will be reporting to the 2016 House of
46 Delegates on that effort.

1 *Anticipated Steps Leading to Tendering the Proposed Revised ADA Constitution and Bylaws to the ADA*
2 *House of Delegates for Adoption.* With proposed amendments to the *ADA Constitution* being presented
3 with this report and a preliminary draft of the amendments to the *ADA Bylaws* completed, the question
4 that is sure to arise is why aren't the proposed *Bylaws* amendments being presented to the 2016 House
5 of Delegates for consideration and vote? The Council and the task force are mindful that the House of
6 Delegates is eager to receive the revised *Constitution and Bylaws* and move the process set in motion by
7 118H-2014 forward as quickly as possible. However, both the Council and the task force believe that
8 further steps in the revision and rewriting process are essential to complete before tendering the revised
9 *Constitution and Bylaws* to the House of Delegates for a vote.

10 The Council and task force believe that when the proposed amendments to the *Bylaws* are unveiled, it is
11 critical to also provide copies of the revised *Manual of the House of Delegates* and the new *Governance*
12 *Manual*, all of which will include the material that has been removed from the *ADA Bylaws* during the
13 revision process. Having those documents along with the revised *Constitution and Bylaws* will provide
14 readers with the means to confirm that the procedural and operational details that have been removed
15 from the *Bylaws* still exist, and have merely been transferred to more appropriate places.

16 Delaying the release of the revised *Bylaws* will also give the task force and the Council the opportunity to
17 double-check the revisions that have provisionally been made. If during the course of reviewing the
18 procedural and operational material removed from the *Bylaws* it is determined that material has been
19 mistakenly or inadvertently removed from the *Bylaws* and needs to be reinserted, the contemplated
20 process will allow that reinsertion to be easily accommodated. The process being followed ensures that
21 the best and most accurate work possible will be forwarded to the 2017 House of Delegates.

22 The process of revising the stricken portions of the *Bylaws* and inserting those portions into the *Manual of*
23 *the House of Delegates* and the *Governance Manual* has begun, but is not yet complete because of the
24 quantity of information that needs to be placed in those documents. It is anticipated that the process will
25 be completed in time for the Council to review the revised documentation at its meeting a few weeks after
26 the ADA 2016 annual meeting in Denver. When the manual revisions are completed, the Council will
27 release those revised documents and the proposed amendments to the *ADA Bylaws* to interested parties
28 to review.

29 The task force and the Council believe it is vital to allow all interested parties the time to review the
30 proposed revisions and to provide comments and suggestions to the proposed revisions. When the
31 amended *ADA Bylaws* and the ancillary operational and procedural documentation are distributed toward
32 the end of the year, a period will be provided to allow suggestions and comments to be made by
33 interested parties. It is presently anticipated that a mechanism for providing comments, suggestions and
34 feedback on the revised *Bylaws* will be available on ADA Connect. All comments received will be
35 reviewed and considered by the task force and the Council with amendments being made as appropriate.
36 Following the comment and revision process, the revised *Bylaws*, together with the revised *Manual of the*
37 *House of Delegates* and the *Governance Manual* will be transmitted to the House for adoption.

38 Based on the foregoing, the Council tenders Resolution 61 to the House of Delegates and requests that
39 the Resolution be laid over for consideration by the 2017 House of Delegates:
40

Resolution

61. Resolved, that the ADA *Constitution* be amended as follows (additions underscored, deletions ~~stricken through~~):

Constitution**ARTICLE I • NAME**

The name of this organization shall be the American Dental Association, ~~hereinafter referred to as~~
~~“the Association” or (“this Association.”)~~

* * *

ARTICLE III • ORGANIZATION

Section 10. INCORPORATION: This Association is a non-profit corporation organized under the laws of the State of Illinois. If this corporation shall be dissolved at any time, no part of its funds or property shall be distributed to, or among, its members but, after payment of all indebtedness of the corporation, its surplus funds and properties shall be used for dental education and dental research in such manner as the then governing body of ~~the~~ this Association may determine.

Section 40. MEMBERSHIP: The membership of this Association shall consist of dentists and other persons whose qualifications and classifications shall be as established in ~~Chapter I~~ of the Bylaws.

~~Section 50. CONSTITUENTS SOCIETIES AND COMPONENTS: Constituent societies~~ Constituents of this Association shall be those dental societies or dental associations chartered in conformity ~~with Chapter II~~ of the Bylaws.

~~Section 60. COMPONENT SOCIETIES: Component societies of this Association shall be those dental societies or dental associations organized in conformity with Chapter III of the Bylaws of this Association and in conformity with the bylaws of their respective constituent societies~~ constituents.

~~Section 70 60. TRUSTEE DISTRICTS: The constituent societies of the~~ this Association and the federal dental services shall be grouped into ~~seventeen (17)~~ trustee districts.

ARTICLE IV • GOVERNMENT

Section 10. LEGISLATIVE BODY: The legislative and governing body of this Association shall be a House of Delegates, ~~which may be referred to as “the House” or “this House.”~~

Section 20. ADMINISTRATIVE BODY: The administrative body of this Association shall be a Board of Trustees, ~~which may be referred to as “the Board” or “this Board.”~~

* * *

ARTICLE VI • ANNUAL SESSION

The annual session of this Association shall be conducted in accordance with ~~Chapters V and XV~~ of the *Bylaws*.

ARTICLE VII • PRINCIPLES OF ETHICS AND CODE OF PROFESSIONAL CONDUCT

The *Principles of Ethics and Code of Professional Conduct* of this Association and the codes of ethics of the constituents and components ~~societies~~ which are not in conflict with the *Principles of*

1 *Ethics and Code of Professional Conduct* of this Association, shall govern the professional conduct
2 of all members.

3 **SPEAKER'S COMMENT:** The Board notes that Resolution 61 requires a change to the ADA
4 Constitution. As such, in accordance with the ADA Constitution, Article VIII. AMENDMENTS,
5 this resolution will lay over to the 2017 House of Delegates.
6

APPENDIX 1**CONSTITUTION****ARTICLE I • NAME**

The name of this organization shall be the American Dental Association ("this Association").

ARTICLE II • OBJECT

The object of this Association shall be to encourage the improvement of the health of the public and to promote the art and science of dentistry.

ARTICLE III • ORGANIZATION

Section 10. INCORPORATION: This Association is a non-profit corporation organized under the laws of the State of Illinois. If this corporation shall be dissolved at any time, no part of its funds or property shall be distributed to, or among, its members but, after payment of all indebtedness of the corporation, its surplus funds and properties shall be used for dental education and dental research in such manner as the then governing body of this Association may determine.

Section 20. HEADQUARTERS OFFICE: The registered office of this Association shall be known as the Headquarters Office and shall be located in the City of Chicago, County of Cook, State of Illinois.

Section 30. BRANCH OFFICES: Branch offices of this Association may be established in any city of the United States by a majority vote of the House of Delegates.

Section 40. MEMBERSHIP: The membership of this Association shall consist of dentists and other persons whose qualifications and classifications shall be as established in the *Bylaws*.

Section 50. CONSTITUENTS AND COMPONENTS: Constituents of this Association shall be those dental societies or dental associations chartered in conformity with the *Bylaws*. Component societies of this Association shall be those dental societies or dental associations organized in conformity with the *Bylaws* of this Association and in conformity with the bylaws of their respective constituents.

Section 60. TRUSTEE DISTRICTS: The constituent societies of this Association and the federal dental services shall be grouped into trustee districts.

ARTICLE IV • GOVERNMENT

Section 10. LEGISLATIVE BODY: The legislative and governing body of this Association shall be a House of Delegates.

Section 20. ADMINISTRATIVE BODY: The administrative body of this Association shall be a Board of Trustees.

ARTICLE V • OFFICERS

Section 10. ELECTIVE OFFICERS: The elective officers of this Association shall be a President, a President-elect, a First Vice President, a Second Vice President, a Treasurer and a Speaker of the House of Delegates, each of whom shall be elected by the House of Delegates.

Section 20. APPOINTIVE OFFICER: The appointive officer of this Association shall be an Executive Director who shall be appointed by the Board of Trustees.

ARTICLE VI • ANNUAL SESSION

The annual session of this Association shall be conducted in accordance with the Bylaws.

ARTICLE VII • PRINCIPLES OF ETHICS AND CODE OF PROFESSIONAL CONDUCT

The *Principles of Ethics and Code of Professional Conduct* of this Association and the codes of ethics of the constituents and components which are not in conflict with the *Principles of Ethics and Code of Professional Conduct* of this Association, shall govern the professional conduct of all members.

ARTICLE VIII • AMENDMENTS

This *Constitution* may be amended by a two-thirds (2/3) affirmative vote of the delegates present and voting, provided that the proposed amendments have been presented in writing at any previous session of the House of Delegates.

This *Constitution* may also be amended at any session of the House of Delegates by a unanimous vote, provided the proposed amendments have been presented in writing at a previous meeting of such session.

Budget, Business and Administrative Matters

Resolution No. None N/AReport: Board Report 3 Date Submitted: July 2016Submitted By: Board of TrusteesReference Committee: A (Budget, Business and Administrative Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Organizational Capacity-Obj. 6: Role and responsibility of each element of the tripartite clearly defined and agreed upon

How does this resolution increase member value: See Background

REPORT 3 OF THE BOARD OF TRUSTEES TO THE HOUSE OF DELEGATES: COMPENSATION AND CONTRACT RELATING TO THE EXECUTIVE DIRECTOR

Background: In March 2015, the Board of Trustees executed a three-year employment agreement with the current Executive Director, which expires on March 15, 2018. The Executive Director is the only member of the ADA staff with a written employment contract.

Compensation and Benefits: The Executive Director's current annual base salary is \$542,235 and is paid in accordance with the Association's standard payroll schedule and policies. The contract provides that in March 2016 and March 2017, respectively, the Executive Director's annual salary shall increase 3% over the prior annual base salary. The current salary level was set in March 2016 based on the contracted increase of 3% over the prior annual base salary of \$526,442.

The 2015 contract provides that the Executive Director is eligible to receive an annual bonus ranging from 0%-5% of her base salary, as determined by the Board, based upon criteria jointly approved by the Executive Director and the Board, and subject to the availability of funds. In March 2016, the Executive Director received a bonus in the amount of \$23,690 (4.5% of base), based on the assessment of 2015 performance.

The Executive Director is entitled to the fringe benefits offered during the term of this Agreement similarly situated Association employees having her length of service in the employ of the Association; provided, however, that such fringe benefits do not include "Severance Pay" under the ADA Employee Handbook or any other ADA policy or procedure relating to severance pay because such severance pay is covered by the terms of the employment contract.

The 2015 contract provided additional fringe benefits including a \$15,000 annual contribution to the Great-West Variable Annuity Plan; a parking space in the Association Headquarters building; the reimbursement of reasonable, substantiated expenses incurred to purchase and maintain a membership in one city or athletic club in the Chicago area; one cellular telephone, reasonable expenses for spousal travel to the Association's annual session and any other required spousal travel consistent with the ADA Board's spousal travel policy in effect at the time; and membership dues in professional associations up to \$5,500 (except for the dues of the American Dental Association and its constituent and component dental societies).

1 **Resolutions**

2 This report is informational and no resolutions are presented.

3 **BOARD RECOMMENDATION: Vote Yes to Transmit.**

4 **BOARD VOTE: UNANIMOUS* (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO**
5 **BOARD DISCUSSION)**

6 ***Dr. Gamba was not in attendance.**

7

Board Report 3

Resolution No. 9-10 New

Report: Board Report 2 Date Submitted: July 2016

Submitted By: Board of Trustees

Reference Committee: A (Budget, Business and Administrative Matters)

Total Net Financial Implication: \$(266) Net Dues Impact: No increase

Amount One-time _____ Amount On-going _____ FTE _____

ADA Strategic Plan Objective: 2017 Budget Supports All Strategic Plan Objectives

How does this resolution increase member value: Not Applicable

REPORT 2 OF THE BOARD OF TRUSTEES: 2017 BUDGET

Contents

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Summary

All dollar figures are in thousands with unfavorable variances in parentheses.

In accordance with its *Bylaws* duties, the Board of Trustees presents the proposed 2017 operating budget for the Association. The Board of Trustees is recommending a 2017 operating budget of \$133,584 in revenues and \$126,850 in expenses and income taxes, generating a surplus before transfers to the insurance royalty reserve of \$6,734. After transferring \$7,000 in royalty revenue to the insurance royalty reserve the operating budget is a net deficit of \$(266). The royalty reserve is dedicated to member value, long term dues and financial stabilization as urged by the House of Delegates Resolution 84H-2013 and Board action. In arriving at this proposed 2017 budget, the Board of Trustees analyzed budget requests relative to the Association's strategic priorities, as directed by the 2011 House of Delegates in resolutions 44H-2011 and 12 52H-2011 (*Trans.*2011:444;445). Resources were allocated between programs and divisions in an effort to maximize their effective use in executing the ADA's Strategic Plan for 2015-2020. No national dues increase is included in the 2017 proposed budget, but the Board has separately proposed a dues increase of \$10 per member that is not reflected in this document.

Overview of ADA Budget Process

Budget Approach and Strategic Plan Goal Updates

First, it is important to recognize that the budget presented in this report is the result of the combined efforts of many volunteers and staff over many months that has built on process improvements resulting from suggestions over many years. The Board of Trustees greatly appreciates Council participation in this budget process which took a different approach compared to prior years. Engagement of its Councils in development of Council priorities is one important way that the House fulfills its fiduciary duty to review and approve the budget. Although there weren't many proposed changes that affected Councils included in the proposed 2017 budget, for the first time this year Council leaders received the first draft of this report in advance of the board meeting to enable input to the board's discussions before the vote to approve the final budget that will be sent to the House. Many thanks are due to everyone who contributed to both the content and process improvement suggestions during development of the 2017 budget.

The 2017 budget represents the third or middle year of the Members First 2020 five year Strategic Plan. This strategic plan consists of:

- Three **Goals** which are basically fixed,
- Six **Objectives** that can be adjusted if met or if major changes in conditions require it, and
- Ten **Strategies** which need to be revisited regularly and prioritized.

Using this framework, an annual review of the Strategic Plan in advance of the financial budgeting process considered priorities based on organizational needs to focus on long term goals and objectives, updated environmental scanning, as well as input from senior staff to revisit priorities that may result in a proposal to amend strategies that will be reflected in the ADA's operating plan.

Again this year, two of the six stated objectives in the Member First 2020 plan, member market share and non-dues revenue, pose significant challenges under current conditions. After many years of continued erosion in active, full dues membership, the most important priorities for 2017 were reassessed.

The ADA Mission Statement is "Helping all members succeed." ADA Core Values related to the mission include:

- Commitment to Members
- Integrity
- Excellence
- Commitment to the Improvement of Oral Health
- Science/Evidence-Based

The current strategic plan consists of the following high level goals, supporting objectives, and strategies. Changes to the strategies in 2016 are noted by strikethrough and underlining

Membership Goal: The ADA will increase member value and engagement.

Objective 1: The public will recognize the ADA and its members as leaders and advocates in oral health.

- 1.1 *Align public awareness efforts across the tripartite concerning oral health issues*
- 1.2 *Position ADA membership as a positive differentiating factor for patients*
- 1.3 *Promote oral health through advocacy and science*

Objective 2: ADA's member market share will equal at least 70% of active licensed dentists.

- 2.1 ~~Develop and implement collaborative programs with entities that have access to large pools of potential members~~ Focus the message to connect with individual members, potential members and key market segments
- 2.2 Design unique member outreach and benefit programs targeting dental students and new dentists ~~market segments~~

Objective 3: ADA will achieve a 10% increase in the assessment of member value from membership.

- 3.1 *Pursue programs that members value and are "Best in class"*

Finance Goal: The ADA will be financially sustainable.

Objective 4: Unrestricted liquid reserves will be targeted at no less than 50% of annual operating expenses.

4.1 Budget for a surplus consistently year to year

Objective 5: Non dues revenue will be at least 65% of total revenue

5.1 Develop cooperative ways to increase non-dues revenue across the tripartite

5.2 Increase member utilization of existing products and services and pursue new markets

Organizational Capacity Goal: All levels of the ADA will have sufficient organizational capacity necessary to meet member needs.

Objective 6: The roles and responsibilities of each element of the tripartite will be clearly defined and agreed upon.

~~6.1 Act in the best interest of the member, rather than the organization when designing processes, programs and services~~ Simplify, standardize and rationalize how each level of the ADA operates and delivers programs and services and interacts with members, acting in the best interests of the member rather than the organization

Starting with recommendations from management, the ADA Strategic Planning Committee reviewed these goals and objectives and recommended changes (noted above) to strategies 2.1, 2.2 and 6.1 which the Board adopted in January 2016. Furthermore, these three revised strategies (2.1, 2.2 and 6.1) were identified as ADA priority strategies under Members First 2020 for 2016 and 2017.

As a result, these strategic priorities were an early input to respond to the need for the strategic plan to drive budget decisions rather than the reverse.

These strategic priorities are to:

- 1) ***"Focus the message"*** to connect with individual members and potential members;
- 2) Design unique member outreach programs for targeting dental students and new dentists and ***"Fill the pipeline"*** to generate full-dues paying members; and
- 3) ***"Simplify,"*** Standardize, and Rationalize how each level of the ADA operates and interacts with members actively in the best interest of the member rather than the organization.

The board believes that the process changes made this year put more emphasis on the importance of outcomes related to the advancement of the strategic plan rather than the financial budgeting process itself.

By starting with three central questions to program owners, it is hoped that everyone, including Councils, can first come to consensus on the value of their programs:

1st, Does the program advance a priority strategy?

2nd, Is the program effective?

And 3rd, Based on answers to the first two questions, should the ADA devote resources to the program and to what extent?

The financial budgeting process then used this information as another input to the prioritization of resources.

1 Program Assessment and Prioritization in Advance of Financial Budgeting

2 Because the critical goal of budget development is the prioritization of resources in alignment with the
3 strategic plan, the development of program assessment criteria tied to its goals was an important step in
4 the process. Program Assessment Criteria are intended to provide a framework for common
5 understanding of program prioritization.

6 The construction of 2017 financial budgets did not start until after a careful program portfolio review and
7 assessment process. All ADA divisions, working with councils, define a list of programs that represents
8 its work product, i.e. what the division accomplishes that creates member value. This list of programs
9 may include new initiatives for review against existing programs carried forward from the prior budget
10 year to focus on the ADA's strategic plan priorities. Descriptions were written to briefly explain each
11 program and program templates were also designed to collect critical information. This phase of the
12 initial planning process that fed into 2017 financial budget process focused on gathering new information
13 to better focus ADA programs to move key indicators of progress toward ADA strategic plan goals.

14 Because feedback from the 2016 budget process indicated that one set of universal assessment criteria
15 applied to all programs would not be as meaningful as separate criteria focused on several different
16 groups of programs, the assessment criteria were redefined. In addition, the board requested more
17 information from grass roots dentists to provide a better sample of customer perceptions. As a result,
18 survey metrics were reviewed and approved by the board to serve as the universal assessment criteria
19 for the 2017 budget process. This survey approach is more member focused for a better connection to
20 our strategic plan goals.

21 McKinley Advisors was selected as the consultant to perform Dentist Surveys designed to collect our
22 general member and non-member perspectives on our current programs, as well as new initiatives, to
23 serve as one important input to the budget prioritization process.

24 To provide some context to the McKinley Survey Results, it should be noted that this McKinley Dentist
25 Survey *replaces* last year's Volunteer Scoring Process which enlisted Council Leaders, as a Council
26 Budget Group, or "CBG," to rate all programs.

27 Survey questions first asked about a respondent's awareness of a program, and only then would they be
28 presented with questions on their personal usage of the program. Dentists that had used direct member
29 benefit programs or were aware of programs that interface with third parties were then asked about their
30 satisfaction with the results. Lastly, all dentists were provided with a short description of the program and
31 asked to rate the value and impact of the program on their decision to join the ADA. The survey results
32 used for prioritization were focused on the member value metrics.

33 The program descriptions were provided by each division as part of their budget documentation.
34 Using the program descriptions as a reference, each member-facing program was then included in a
35 survey of general members to collect information on the relative value of different programs. While
36 most survey questions were circulated to dentists for member-facing programs, other questions were
37 directed at state executive directors for programs that benefit state and local components. The survey
38 results were shared with Council leaders during webinars conducted by the Treasurer which also
39 provided an overview of changes to this year's budget process. In addition, the survey scores are
40 included in the program summaries of this report.

41 Similar to universal assessment criteria scores in prior years, this survey data is only one important input
42 to the budget prioritization process. Other inputs may include:

- 43 a. Alignment of programs with ADA 2020 Strategic Plan Priority Strategies to:
 - 44 i. Fill the Pipeline
 - 45 ii. Focus the Message
 - 46 iii. Simply and Standardize processes
- 47 b. Net Costs or Revenue generated by program (to support a balanced budget).

c. Council Leader input – such as:

- i. ADA risk of *not* doing the program in 2017,
- ii. House resolutions that, directly or indirectly, require the program,
- iii. Any other factors that should be considered by the board before a final decision.

Starting with the priority strategies and program assessments, management identified the following areas of focus in the ADA business model:

- **Member & Client Service:** *How We Serve Members and their State and Local Societies*
- **Integrated Marketing Communications:** *How We Converse with Today's Member and the Public Regarding Dentistry*
- **Scientific Information:** *How We Provide Science to our Members To Improve Their Patients' Oral Health*
- **Enabled by Information Technology**
 - *Supplies Data to Support Decisions*
 - *Provides Scale and Reach*
 - *Enables Targeting and Personalization*

More detailed strategies for each of these areas were developed as follows:

Member & Client Services 2017 Strategies:

1. Expanding Client Service Delivery to States through

- Coordination and integration of offerings through account planning for states
- Focus on 8 Strategic States where the ADA can provide the most value
- Provide consultative services to states via outreach managers
- Provide administrative solutions through service provider referral

2. Tactical Plans to Fill and Measure the Pipeline

- Dental School Strategy
- Career Center
- Non-Renew Predictive Model
- Pilots to test products/services/messages

Integrated Marketing Communications 2017 Strategies

Introduce "A New Way To Work" based on:

1. Integration

- Focus the Message through five cross-divisional campaigns
- Search Engine Optimization ("SEO"), paid media, and promotion
- Centralized Content Marketing & Promotion
- Packaging, creation and distribution via newsroom
- Shared calendar optics with Publishing

2. Digital & Technology Evolution

- ADA.org upgrade
- Feedback loop
- Personalization
- Targeting graduate and New Dentist cohorts

3. Five Pillar Campaigns

- ADA Pride (for members)
- Make Your Life Easier (for dentists: members and prospects)
- Be Your Best (to promote resources for practice and career)
- See Your ADA Dentist (for consumers)
- Dental Health For All (for media, policy makers, members, environmental stakeholders)

Scientific Information 2017 Strategies to provide:

1. Scientific Information
2. Evidence-based Dentistry
3. Seal of Acceptance

Information Technology 2017 Strategies

1. Focus IT efforts to support Priorities
2. Increased Adoption to Realize Benefits
3. Integration between Marketing/Communications and Technology (optimization of content)

ALIGNMENT OF INFORMATION TECHNOLOGY INITIATIVES WITH ADA PRIORITIES

Focus the Message; Fill the Pipeline	Simplify & Standardize	Risk	Operations
Personalization DB Configuration Sign on Ease SSO Click to Chat Content (DMM, DCM, DAM) Web Analytics Ex/In Search Ad Monetization	Reporting & Analytics (ADA, State&Local Big Data) ADA Connect Aptify Adoption (CRM, Sales Mgt, Meetings, CE, Catalog) KC Adoption CODA/CERP	Finance & HR Audit & Security	Infrastructure Aptify CDMS S&L Websites

We continue to invest in information technology in 2017 to continue building ADA capabilities to support the new model for “client service” to state and local components. In 2017, the first year *after* the accelerated Aptify implementation plan which rolled out the new Association Management software to most states in 3 years rather than the original 5 year plan, adoption of the new system is a top priority for IT. This should help manage the long term risk of all components not having access to consistent and reliable information to serve members. After States have converted to Aptify and completed the learning of new processes, it is expected that Aptify will enable more effective member interaction and relationship management, data collection and analysis, and key segment marketing for state and local societies.

Similarly, many other IT initiatives, shown in the chart above, provide support for ADA priority strategies as well as essential ADA operations and risk management functions.

1 Currently the ADA is developing an approach to providing services to the state dental societies that allows
2 for an approach that best meets the needs of states that vary widely in capability and capacity.

3 The simplification and streamlining of processes to make it easier for members to find and access benefits
4 and solutions is an important priority to ensure that the member experience, whether it be digital or live, is
5 consistent across all states. A consistent look and feel is important to members. Websites (ADA, State and
6 Local) are a primary channel to interface with dentists looking for professional solutions and support. In an
7 ideal scenario, the member would be able to access the benefits, products and services that they desire in
8 real time, through a single interface, regardless of what city or state they live in. The ADA's collaboration
9 with the states is based on three high level priority strategies: Focus the Message; Fill the Pipeline; Simplify,
10 Rationalize, and Standardize processes.

11 12 **Continued Focus on Innovation**

13
14 Building on concepts identified in last year's budget process, the ADA has continued to focus on innovation.
15 Today a more structured innovation process identifies new ideas, explores potential value to members, and
16 evaluates the feasibility of new products and/or services to decide if the new idea meets certain strategic
17 criteria. These activities are now overseen by a new Business Innovation Committee of the Board which
18 has been authorized by the Board to investigate new ideas moved forward. Although very little has been
19 spent in 2016, this budget again proposes setting aside up to \$1 million from reserves, subject to the
20 approval and oversight of the Board, to support an innovation projects. This focus on innovation is also
21 critical to the generation and cultivation of new sources of non-dues revenue to support the 2020 strategic
22 plan objective. The Board's plan to allocate up to \$1 million available annually from reserves for innovative
23 new products, benefits, services and non dues revenue generation continues to be an important part of the
24 Member First 2020 strategy.

25 26 **Designated Reserve Contributions, Surplus Budgeting, and Use of Reserves**

27
28 In addition to the annual operating budget, this report also includes a projection of planned contributions to
29 reserves and anticipated spending plans. The capital replacement reserve contribution represents a
30 provision for the future repair and replacement of large and infrequent capital projects. Setting aside these
31 funds in consistent amounts tied to depreciation less the total cost of smaller operating capital projects
32 during each annual budget cycle enables the ADA to avoid special assessments which supports the goal of
33 dues stabilization. Estimates for planned 2016 capital reserve spending projects subject to designated
34 board review and approval are also included.

35
36 In addition, royalty revenue from ADA Members Insurance Plans is also planned for transfer to a designated
37 reserve and not included in the calculated net surplus/(deficit) in the ADA operating budget. This royalty
38 reserve is set aside to build member value, long term dues and financial stabilization as directed by the
39 House of Delegates Resolution 84H-2013 and Board action.

40 While the strategic plan strategy to plan for surplus budgets supports the accumulation of reserves, a long
41 term perspective on the financial stability of the Association should also consider strategic investments –
42 especially during periods of high investment values. Related to this, it should be noted that, in the ADA's
43 budget basis income statement presentation, the ADA's annual contributions to reserves represent
44 additional surplus. For example, if the insurance plan royalty now reported as a component of revenue
45 was not transferred to the royalty reserves, then the ADA would report a surplus driven by the \$7.0 million
46 of royalties expected in 2017. The House designed this royalty recognition and reserve process to avoid
47 automatically enabling increased spending in the ADA's annual operating budget and to ensure that
48 decisions on spending of royalty reserves would be kept separate from the determination of the annual
49 royalty coming from the insurance plans. In this way, the ADA would not become dependent on royalties
50 from the plan. However, to realize the intended purpose for the reserves, there must be a common
51 understanding and a will to spend from reserves when it's appropriate.
52

1 Financial Budget Development, Review and Approval Process Overview

2 The ADA *Bylaws* charge the Treasurer with design of the budgetary process in concert with the Board of
3 Trustees, oversight of the Association finances and development of a budget for approval by the House of
4 Delegates. Although the overall planning process still stretches over more than a year due to: multiple
5 layers of volunteer involvement; the timing of council, committee and Board meetings; and the *Bylaws*
6 requirement that the House be informed of the membership dues 30 days before the annual session, this
7 year's financial budgeting started later so that more time could be spent reviewing strategic plan priorities
8 for 2017.

9 Initial Budget Development: ADA management is tasked by the board to draft a budget in the best
10 interests of the Association that increases ADA net assets. Using the data gathered in the initial
11 planning process, each ADA division begins the budget process by creating draft budgets based on its
12 portfolio of programs that support strategic priorities. At this stage, budget work is initiated by division
13 staff and, from the start, staff are directed to engage ADA councils, committees and commissions in
14 the budget process. Councils, committees and commissions need to exercise oversight of the process
15 and to set direction and priorities.
16

17 In order to create realistic budgets the Executive Director and Chief Financial Officer provided each division
18 with "starting point" 2017 financial benchmarks and required that any proposed spending above the goal be
19 identified separately with a written explanation. Next, staff input the initial draft budgets for their programs
20 into the Hyperion budget system. Every hour of staff time and every dollar of non-staff expense were
21 planned against the programs. The sum of the staff time in the programs equals the total staffing budget.
22

23 Internal Budget Reviews: The Executive Director and Chief Financial Officer then held budget review
24 meetings with division vice presidents to: evaluate the reasonableness of proposed budgets, identify
25 synergies across the ADA, provide oversight on expenditure effectiveness, and make decisions to prioritize
26 spending for a draft budget that's in the best interests of the ADA that increases net assets. After initial
27 budgets were updated in Hyperion to reflect management decisions, a recommended budget was prepared
28 for the ADA Budget and Finance Committee for its review and approval.

29 As part of this process:

30 1) All proposed budget changes which reduce funding or that add new programs with added costs
31 compared to levels included in the prior year House-approved 2016 budget are documented with the
32 rationale for each recommended change.

33 2) Once the draft budget with detail is submitted to the Budget & Finance Committee, the committee
34 may invite councils to discuss specific programs that may be affected by proposed changes.

35 Before the Budget and Finance Committee met for its formal budget review, the ADA Treasurer, the
36 Executive Director, and ADA Financial management reviewed all budget materials in detail. This helped to
37 identify some of the more substantive issues to be considered at the subsequent Committee meeting.

38 In advance of its meeting, the Budget and Finance Committee was provided with budget reports that
39 included the following for every program: a program description which included notes on survey scores,
40 revenue, staff full time equivalent employees (FTE), expense including staff time, as well as consolidated
41 ADA budget financial statements versus prior year actual and budget.

42 Budget and Finance Committee Review: Led by the Treasurer, the Budget and Finance Committee
43 discussed and modified the 2017 budget so that its budget recommendations can be summarized into
44 the first draft of Board Report 2 which will then be sent for review by the Board. Two House members
45 also serve on the Committee and have historically played an invaluable role in the analysis of the
46 proposed budget. It should be noted that this group is essentially the same as the Administrative
47 Review Committee in the prior year's process because it is led by the Treasurer. This name change

1 was only made to simplify board governance since the Admin Review Committee was originally set up
2 as a subcommittee of the Budget and Finance Committee through the Organization and Rules of the
3 Board of Trustees. This meeting is a milestone in the budget process and is where the ownership of
4 the budget passes from management to the Budget and Finance Committee. Similarly, once the
5 proposed 2017 budget reflecting changes approved by the Budget and Finance Committee is sent to
6 the Board, ownership of the budget passes from the Budget and Finance Committee to the Board.

7 Based on many inputs, the Budget and Finance Committee reviews and adjusts resources across
8 divisions in a way that optimizes the Associations' total portfolio of programs. Final decisions to fund
9 or not fund programs are always in the hands of the ADA's volunteer leaders, who may also consider
10 other factors.

11 After the Committee Meeting, ADA Finance and Human Resources management meet with each
12 Division to discuss the potential budget and staffing implications of the Committee's recommendations.

13 Once the first draft of Board Report 2 is completed and approved to be sent for Board review, it is also
14 posted for Council leaders as well. This is a completely new step in the process this year intended to
15 make the board's budget review more open to input before the Board votes on the final budget to be
16 sent to the House of Delegates.

17 The Treasurer and appropriate Finance staff were also available to review all recommended changes
18 to the budget with the appropriate Council Leadership, as requested. In doing so, Council leaders had
19 the opportunity to discuss proposed budget changes with the Council's Board Liaison and, if needed,
20 the rest of the Board Members before the final vote. In this way, the Board has removed barriers to
21 communication during the budget review process.

22 Board of Trustees Review: Based on the work of the Budget & Finance Committee, the Finance
23 Division staff develop the next iteration of the draft budget for review by the full Board. Budget
24 summaries, including background on the Budget & Finance Committee's view of the merits of
25 proposed programs, are then prepared for the full Board of Trustees.

26 In addition to the written material, the Treasurer provides guidance and comment. The Board
27 thoroughly reviews the work of the Committee and its recommendations, questions staff on specific
28 issues in the budget and discusses input received by the councils' trustee liaisons.

29 The Board reviews, makes changes, and approves its recommended budget which is forwarded to the
30 House.

31 Once the Board votes on the recommendation, the Treasurer is available, if necessary, to meet with
32 Council chairs to discuss the rationale for the Board's decision.

33 At this point in the process, it should be noted that the 2017 budget review and prioritization of
34 resources in support of strategic priorities represents a considerable expenditure of time and effort to
35 arrive at a recommendation. In addition, House resolutions passed after this budget process do not go
36 through this same review and prioritization process. However, it is hoped that the House of Delegates,
37 at its annual session, will share this high level view of the ADA and that all resolutions introduced will
38 also be reviewed and prioritized with consideration to the same criteria.

39
40 With this background, it should be noted that this 2017 budget represents the estimates of ADA revenue
41 and expenses to deliver the listed programs and services based on the best information and assumptions
42 available at the time these detail budgets were created and built into the ADA budget in mid-2016. As a
43 result, it is very possible that some estimates or assumptions could change based on new information that
44 becomes available closer to the start of the budget year. If that new information results in significant,
45 quantifiable impacts to the 2017 budget, then those will be reported by the Treasurer to that House at the
46 annual session as possible amendments to the budget subject to the discretion of the House.
47 Unfortunately, potential changes are an inherent risk of the ADA's current budget process due to this long

1 timeline. Some budget estimates made long before the start of the budget period may be less accurate
2 than those that are built later.

3 House of Delegates Review and Final Approval: In accordance with its *Bylaws* duties, the Board of
4 Trustees presents the annual operating budget for the Association to the House of Delegates through
5 this document, Board Report 2. This background commentary and any analysis provided, together
6 with Reference Committee testimony and the Reference Committee recommendations, serve as the
7 basis for the House approval of the budget at its Annual Session. Following budget approval,
8 resources may be reallocated between programs and divisions as required, in an effort to maximize
9 their effective use in executing the ADA's Strategic Plan.

10 If not funded in Board Report 2, councils or caucuses may propose new initiatives which may have a
11 financial impact by sending resolutions to the House of Delegates. Requests to fund programs that were
12 funded in the prior year House-approved budget are handled differently than new programs. Programs
13 that were funded in the last House-approved version of the budget but recommended for sunset or cost
14 reduction by the Board in the new budget as reflected in Board Report 2 require that the requestor refer
15 the entire budget back to the board for reconsideration with a recommendation to change that specific
16 item. If a majority vote of the House to refer the budget back to the Board for revision is passed, the
17 Board will then meet separately to decide on the change. The Board could adopt the change but also
18 make other adjustments to pay for the program or vote to resubmit Board Report 2 to the House with no
19 changes. After more testimony, the House could then a) vote again to either accept the budget or b) refer
20 the budget back the Board again and this process would continue until the House approves a budget.

21 If approved by House vote, new resolutions, for program spending not included in the prior year budget,
22 are simply added into the budget and must be funded. State dental societies, trustee districts, the
23 American Student Dental Association, as well as the branches of the federal dental services may also
24 submit resolutions to the House of Delegates, and if these have a financial impact and are approved,
25 would be included in the budget.

26 The final actions of the House of Delegates at each annual session are:

- 27 1) Approval of the next year's annual operating budget, and
28 2) Approval of the dues.

29 **Conclusions**

30 The proposed 2017 budget has been built through a thoughtful process that is much more focused on
31 strategic priorities than prior years. This report is intended to document the careful consideration of many
32 inputs including collaboration with many subject matter experts and stakeholders in a new, more open
33 budget review process.

34 One critical purpose of the ADA strategic plan, which is supported by the ADA division operating plans and
35 budgets, is to drive positive change toward member growth. Although there are many initiatives and new
36 client service strategies to help drive membership, we do not know what will work and, as a result, the 2017
37 budgeted revenue projections are conservative. However, the proposed 2017 budget is intended to
38 position the ADA for longer term growth.

39 Our ultimate long term goal is to build the ADA into a business model that is self-sustaining through
40 mechanisms such as strategy-driven budgeting that ensure that the organization changes to adapt to the
41 needs of its dentist members. This ideal of operational excellence cannot be accomplished in one year and
42 will be ongoing. However, ADA Finance has looked beyond 2017 at revenue and expense trends in a few
43 general scenarios. The recent trend of declining membership and non-dues revenues combined with
44 normal annual increases in costs result in the potential for deficits in future years if current conditions
45 continue. The net effect of these continuing revenue and expense trends will likely mean limiting the ADA's
46 size and scope of its programs. As a result, the Budget and Finance Committee proposed and the Board

- 1 adopted a resolution to hire a consultant to study the ADA's business model in the interests of long term
- 2 operational and financial sustainability. This study will start in 2016.

Financial Summary

American Dental Association Operations

2017 Budget Summary by Natural Account

\$ 000

	2014 Actual	2015 Actual	2016 Budget	2017 Budget	2017 v 2015 Variance		2017 v 2016B Variance	
					Fav / (Unfav)		Fav / (Unfav)	
					\$	%	\$	%
Membership Dues	56,433	55,627	55,094	54,816	(811)	-1.5%	(278)	-0.5%
Advertising	8,281	6,386	6,650	6,436	50	0.8%	(214)	-3.2%
Rental Income	3,655	3,676	4,361	5,791	2,115	57.5%	1,430	32.8%
Publication & Product Sales	7,479	6,220	6,955	6,837	617	9.9%	(118)	-1.7%
Testing Fees & Accreditation	21,705	23,554	25,471	26,848	3,294	14.0%	1,377	5.4%
Meeting & Seminar Income	8,586	8,422	9,409	8,942	521	6.2%	(466)	-5.0%
Grants & Contributions	2,592	1,717	1,737	1,343	(374)	-21.8%	(393)	-22.7%
Royalties	13,506	16,045	16,056	17,303	1,258	7.8%	1,247	7.8%
Investment Income	2,365	1,632	2,450	1,500	(132)	-8.1%	(950)	-38.8%
Other Income	3,950	3,896	3,496	3,768	(128)	-3.3%	272	7.8%
Total Revenues	128,553	127,174	131,678	133,584	6,410	5.0%	1,906	1.4%
Total Salaries and Temporary Help	41,482	42,952	42,756	44,619	(1,667)	-3.9%	(1,863)	-4.4%
Total Fringe Benefits	6,217	10,524	11,329	11,595	(1,071)	-10.2%	(266)	-2.3%
Total Payroll Taxes	2,889	2,942	2,856	2,903	39	1.3%	(47)	-1.7%
Total Travel Expenses	6,146	6,930	7,505	7,135	(205)	-3.0%	370	4.9%
Printing, Publication & Marketing	10,292	7,968	9,921	9,642	(1,674)	-21.0%	279	2.8%
Meeting Expenses	1,788	2,623	3,017	2,542	81	3.1%	475	15.7%
Consulting and Outside Services	8,166	9,781	9,649	10,249	(467)	-4.8%	(600)	-6.2%
Professional Services	9,681	8,526	9,960	9,063	(537)	-6.3%	897	9.0%
Bank & Credit Card Fees	1,256	1,279	1,308	1,338	(59)	-4.6%	(29)	-2.2%
Office Expenses	4,655	5,150	4,971	4,774	376	7.3%	197	4.0%
Facility & Utility Costs	5,414	5,642	6,197	6,017	(375)	-6.7%	180	2.9%
Grants and Awards	2,591	2,574	2,884	2,218	357	13.9%	666	23.1%
Endorsement Costs	854	1,246	1,297	1,354	(107)	-8.6%	(57)	-4.4%
Depreciation/Amortization	6,192	6,398	6,613	6,988	(590)	-9.2%	(375)	-5.7%
Other Expenses	1,677	1,233	2,289	2,135	(902)	-73.1%	154	6.7%
ADA Health Foundation - Grant	1,907	2,320	2,361	2,629	(309)	-13.3%	(268)	-11.3%
Total Expenses	111,207	118,089	124,912	125,200	(7,111)	-6.0%	(288)	-0.2%
Income Before Taxes	17,346	9,085	6,766	8,384	(701)	-7.7%	1,618	23.9%
Income Taxes	1,435	1,639	1,500	1,650	(11)	-0.7%	(150)	-10.0%
Net Income Before Reserves	15,911	7,446	5,266	6,734	(712)	-9.6%	1,468	27.9%
Add Back Depreciation	6,192	6,398	6,613	6,988				
Operating Capital Expenditures	(3,528)	(2,609)	(4,495)	(2,407)				
Transfers to Capital Reserve	(3,013)	(4,462)	(2,118)	(4,581)				
Transfers to Ins Royalty Reserve	(6,229)	(6,468)	(6,500)	(7,000)				
Non-Operating Items	(6,578)	(7,141)	(6,500)	(7,000)				
Operating Surplus / (Deficit)	9,334	305	(1,234)	(266)				

The above financial summary compares the proposed 2017 budget against prior actual results and budgets. The net operating surplus / (deficit) as presented for the House of Delegates and internal reporting is shown at the bottom of the schedule. The House of Delegates created the capital replacement reserve fund beginning with the 2014 budget. The ADA's annual budgets have historically included capital spending in the "net depreciation and capital add back." Budgets from 2004 through 2012 included only "operating capital" spending and did not include contribution to a capital replacement reserve fund. For the 2014-2017 budgets, the amount of the contributions to the capital replacement reserve fund is determined by the excess of budget depreciation over the operating capital expenditures. This assumes that over a multi-year period depreciation is a rough indicator of the future capital expenditures that will be required to replace ageing assets.

Since 2013, ADA revenue has been slightly declining while expenses have been increasing. Last year, the House of Delegates approved a 2016 budget having a deficit of \$(1,234). This included \$687 in additional expenses from House of Delegates resolutions, which is compared to prior years in the table below:

Budget Year	Expenses Added to Budget by House of Delegates Resolutions Thousands of Dollars
2013	\$805
2014	\$270
2015	\$1,143
2016	\$687

Since no offsetting cost reductions were identified to fund the \$687 in 2016, the additional expenditures will reduce year-end reserve balances by \$687.

The proposed 2017 budget represents a slowing in expense growth and modest revenue growth. With revenue catching up with expenses in 2017, the budget would become balanced again. As detailed in this report, the slowing of expense growth includes proposed investments in some areas offset by expense reductions in others. This modest rebalancing of resources between areas demonstrates the ADA's ability to react to changes in the environment. Still, a faster pace of change may be required in future years given the steady downward trend in the number of full dues members and a limited pipeline of new non-dues revenue. If any of the expense reductions proposed for 2017 are not approved, then identification of offsetting expense reductions in other areas would be helpful to avoid burdening the 2018 budget development with more "catch-up" reductions.

Changes from 2016 Budget to 2017 Budget by Account

Revenues

Total revenues in the 2017 budget are \$133,584. Highlights of various revenue categories are provided below.

Membership Dues: The Division of Member and Client Services estimates the future membership levels for each of 28 dues paying categories and then multiplies the estimated membership in each category by the applicable dues rates. The 2017 budget anticipates 178,839 members, of which 86,482 will pay full dues of \$522 per year. A continued decline in the number of full dues paying members is expected to cause total membership dues revenue to decline in 2017. The average dues rate per member is \$307 per year including discounts such as Active Life and Recent Graduate. These figures do not reflect the dues increase separately proposed by the Board of Trustees.

Advertising: This category primarily includes advertising sales in ADA publications, new initiatives in electronic media, and secondarily, banner advertising at the America's Dental Meeting. The 2017 revenue of \$6,436 is a \$ (214) or (3) % decline from 2016 budget. The decline is largely the result of diminishing revenue from vendor showcase digital advertising and a reduction in advertising revenue from the New Dentist Conference which is held at the annual meeting.

Rental Income: This revenue category primarily includes rental income from the Chicago Headquarters and Washington DC Buildings. Revenue of \$5,791 is an increase of 33 % from 2016 budget. The 2017 budget anticipates both buildings will be almost at 100% occupancy levels. A lease for five floors in the Chicago Headquarters Building was signed in the spring of 2016. The Chicago Headquarters Building had several vacant floors factored into the 2016 budget.

Publication and Product Sales: The category is anticipating a minimal decline of \$(118) or (1.7) %.

Testing Fees and Accreditation: This category continues to be the ADA's largest source of non-dues revenue. Revenues from testing and accreditation fees are expected to rise by \$1,377 or 5.4 % versus 2016 budget. 2017 budget includes volume increases and a 3% rate increase across all testing and accreditation services/products except for DAT which is projected to have an 8% testing fee increase.

Meeting and Seminar Income: Most of the \$(466) or (5) % decline is attributable to ADA America's Dental Meeting. The number of attendees, exhibits booth and sponsorship/advertising sales are estimated lower in 2017 due to the Atlanta meeting location. The volume variance is partially offset by increases in registration fees of \$15 for member dentists and proportionately for other registration categories.

Grants, Contributions, and Sponsorships: Grants, contributions, and sponsorships are projected to decrease by \$(393) or (23) %. Most of the decline is related to the elimination of JADA Live. There is a corresponding expense decrease that offsets some of the revenue decline. Also partially offsetting the decline is sponsorship revenue related to the New Dentist News.

Royalties: This category includes royalties received from the *ADA Business Resources* program, ADA Member Insurance Plans, CDT licenses, domestic and international product licenses, selling of mailing lists and JADA royalties to be paid by Elsevier. This category is projected to increase by \$1,247 or 8% in 2017. The increase is due to a \$643 increase in CDT licensing royalties, \$503 increase in royalties from ADA Member Insurance Plans and \$398 increase in royalties from *ADA Business Resources* programs. Partially offsetting these increases are declines in royalty income from JADA and discontinuation of online continuing education revenue sharing model.

Investment Income: A projection for revenue of \$1,500 for 2017 includes both interest and dividends on reserve fund assets and investment earnings on cash in the operating account. The decline of \$(950) brings the 2017 revenue forecast more in line with 2015 actual results. Investments are being managed to generate returns in line with established benchmarks for each investment category.

Other Income: This category is composed of miscellaneous revenue, including such items as overhead reimbursement from subsidiaries and the ADA Members Insurance Plans, Seal Program revenues, and Health Policy Institute performing work for external clients. The \$272 increase is attributable to fee increases in the Seal Program and the Health Policy Institute completing additional fee-based work for external clients. Partially offsetting the increase is a decline in revenue associated with reimbursement for the ADA Members Insurance Plans.

Expenses

Total operating expenses are budgeted at \$125,200, a \$(288) minimal increase or two-tenths of one percent versus the 2016 budget.

Highlights of various expense categories are provided below.

Salaries (Base Compensation): Base salary expenses are budgeted at \$43,307 which is unfavorable by \$(2,002) or (4.8) % from the 2016 budget. As shown in the table below under "ADA Employee Staffing", the number of full time equivalent employees at year end is projected at 427, a decrease of 6.6 compared to the 2016 budget. The 2017 budget includes a 3% merit pool as well as 0.8 % for market adjustments. The budget also assumes that no open positions will be filled until July 1, 2017 to account for expected open positions throughout the year.

Agency Compensation Adjustment: This category includes expense associated with severance pay and service awards. The 2017 budget in this category is expected to be flat when compared to 2016.

Temporary Help: The ADA hires temporary staff for annual session and to assist divisions when staff positions are open during the year. This category is expected to decrease by \$139 when compared to the 2016 budget.

Pension Fund: This category is to cover annual contributions to the scaled back pension plan that went into effect January 1, 2012 as well as the liability of the full employee pension plan that was offered to employees prior to 2012. The cost reflected in this category represents estimated plan contributions required by the IRS rules for current employees, based on actuarial assumptions. This category is expected to increase in 2017 by \$(220) when compared to 2016.

401K Contribution: No significant change is anticipated for 2017.

All Other Benefit Costs: Expenses in this category include group medical premiums, dental direct reimbursement, life insurance and workers compensation. The expenses in this category are expected to increase by \$(98) or (2) % from 2016, driven by increases in dental direct reimbursement costs and a minimal increase in group medical premiums. The increase is partially offset by a decline in life insurance premiums.

Payroll Taxes: This category includes expense associated with employer related taxes such as FICA, State and Federal Unemployment Insurance (SUI and FUI). A minimal increase is expected for this category in 2017.

Travel Expenses: Travel expenses are usually comprised of about three quarters volunteer travel and one quarter staff travel. Budget expenses for travel are projected to decrease by 5 % or \$370 versus the 2016 budget. Travel was reduced in most divisions to bring the budget more in line with historical actuals.

Printing, Publications and Marketing: In 2017, this category anticipates a decrease of \$279 or 3 % when compared to 2016. The decline is largely due to reductions in printing and commission expenses in ADA Publishing. Also, the 2016 budget included a one-time marketing plan for the ADA Seal program which is not included in the 2017 budget. The reductions are partially offset by new funding in the Division of Member and Client Services that is intended to focus on targeting dental students and early career dentists with intention of converting a greater percentage of this cohort to full dues paying members.

Meeting Expenses: The 2017 budget anticipates a favorable variance of \$475 or 16%, largely attributable to expenses associated with the ADA's Annual Meeting site in 2017. In particular, site distribution expense is significantly less for Atlanta in 2017 versus Denver in 2016. A formula for site distribution costs is used in determining this expenditure.

Consulting Fees and Outside Services: 2017 expenses in this area increase by \$(600) or (6) % when compared to the 2016 budget. The Division of Communications and Marketing budgeted an increase of \$ (803) to fund a redesign of ADA.org and new funding for campaigns that focus on integrated marketing for membership growth. Additionally, the Division of Information Technology shows an increase of \$(648) in outside services and consulting in 2017 to build the personalized web, social, community and content structure that will personalize the online member experience. Also cloud computing caused a significant increase in this category. The ADA is moving all applications to the cloud. Ultimately, this will result in operating cost reductions in staff, consulting, and software expense. Partially offsetting the increase is reductions in Member and Client Services totaling \$250, Conferences and Continuing Education totaling \$222, Education totaling \$127. Several other divisions had less significant declines in an effort to bring expenses in this category closer to historical actuals.

Professional Services: 2017 expenses are expected to decline by \$897 or 9 % versus 2016. The decline is partially attributable to a decline in test administration fees which were overstated in the 2016 budget. Additionally, elimination of JADA Live provides a reduction of \$325 which also has a corresponding revenue reduction in the Grants, Contributions and Sponsorship category. Also, it is anticipated that the Headquarters Building will provide savings of \$196 due to reduction in budgeted broker events and purchased ads due to the Chicago Headquarters building being 100% leased by April 1, 2017. Partially offsetting this decline is an increase in expenses totaling \$(100) in Conferences and Continuing Education for continuing education speaker fees.

Bank and Credit Card Fees: This category represents transaction fees paid to financial institutions and reimbursements to state and local societies for credit card fees related to ADA membership dues collection.

Office Expenses: The \$197 decrease versus 2016 budget in office expenses is primarily driven by an association-wide budget directive which led many divisions to reduce expenses in this category to mirror prior year actual spending.

Facility and Utility Costs: These expenses represent costs for building management and operations, maintenance, and real estate taxes for the ADA Headquarters and Washington DC buildings. The decline of \$180 is the largely the result of reducing the budget for property taxes for the Chicago Headquarters and Washington DC building. Additionally, utility costs are projected to be lower for both buildings.

Grants and Awards: The ADA distributes grants to support various organizations for specific functions. The \$666 net savings includes a reduction of \$475K in State Public Affairs Grants, bringing the budget to \$2,007. This would be a \$4 reduction from the sum of the grants paid in 2015 from both the operating budget and reserves. Between 2010 and 2014, SPA grants to states have not exceeded \$2,007. Also contributing to the reduction in Grant expense is elimination of Membership Program for Growth Grants of

1 \$275K. Partially offsetting these expense reductions is an increase related to new funding for the ADA to
2 assist with unplanned opportunities to develop capacity for individual dental societies with important needs.
3 MPG grant funds are also redeployed to two other new initiatives that target students and new dentists:
4 Student Ambassadors and New Dentist Tangibles.

5 **Endorsement Costs:** This category represents royalty payments to state dental societies that participate
6 in the *ADA Business Resources* program and to the AMA for use of medical codes in *CDT* related products.
7 The minimal change is a direct result of the additional Royalty revenue being forecasted for 2017.
8

9 **Depreciation and Amortization:** Depreciation is calculated annually based on prior year and proposed
10 current year capital acquisitions. The increase of \$(375) in 2017 is due to the ADA focusing on upgrading
11 or implementing systems enhancing ADA's member experience via a redesign of ADA.org, continuation of
12 Aptify upgrades/enhancements, and tenant build outs as a result of the five floor lease signed in 2016 with
13 occupancy scheduled for April 1, 2017.
14

15 **Other Expenses:** Other expenses include general insurance, recruiting costs, staff development, and the
16 contingency fund. The ADA budgets \$1,000 per year in the contingency fund, against which spending
17 during the year is approved by the Board of Trustees. No significant change in this category.
18

19 **ADA Foundation Grant:** The Association's annual grants to the Foundation are budgeted to increase by
20 \$(268) to \$ 2,629, including an increase of \$(768) to support operations of the Volpe Research Center
21 (VRC). The proposed 2017 grants are restricted for use to support key ADA priorities beginning with the
22 VRC. Apart from the \$768 for the VRC, a philanthropic grant of \$1,861 is designated to first fund expenses
23 related to Give Kids and Smile and International Humanitarian efforts, with any excess eligible to help cover
24 the ADA Foundation's general philanthropic overhead expenses. The philanthropic portion of the ADAF
25 grants is \$500 less than was budgeted in 2016.

Number of Employees

American Dental Association Operations

Budget Year-End Full Time Equivalent Employees

	2015	2016	2017	2017 v 2016	
				Inc / (Decr)	
				#	%
Administrative Services	16.0	17.0	17.0	-	0.0%
Human_Resources	6.8	7.0	7.4	0.4	5.7%
Legal Affairs	15.6	16.6	16.6	-	0.0%
Finance and Operations, Buildings	33.0	32.0	31.0	(1.0)	-3.1%
Information Technology	52.0	55.0	50.0	(5.0)	-9.1%
Education	63.0	65.0	69.0	4.0	6.2%
ADA Publishing	21.0	19.0	19.0	-	0.0%
Business Relations	5.0	4.0	-	(4.0)	-100.0%
Conferences and Continuing Education	21.0	21.0	22.0	1.0	4.8%
Product Development and Sales	9.0	11.0	14.0	3.0	27.3%
Communications	28.0	30.0	31.0	1.0	3.3%
Government & Public Affairs	31.0	30.0	28.0	(2.0)	-6.7%
Member and Client Services	49.0	49.0	47.0	(2.0)	-4.1%
Practice Institute	28.0	28.0	27.0	(1.0)	-3.6%
Health Policy Institute	15.0	15.0	14.0	(1.0)	-6.7%
Science	35.9	34.0	34.0	-	0.0%
Total ADA	429.3	433.6	427.0	-6.6	-1.5%

The 2017 budget reflects two positions transferring from Member & Client Services to Conferences and Continuing Education

Of the four positions budgeted in Business Relations in 2016, one position is eliminated for 2017 and three are reassigned to business activities to be reported under Product Development & Sales

Programs and Internal Functions

The tables below show the financial plans for each of 106 ADA programs and internal functions. For 52 of these programs a priority group and value ranking are shown as assigned by nearly 3,000 grass roots dentists. Below is a direct excerpt from the resulting report written by marketing research firm McKinley Advisors, Inc:

“Key Findings and Considerations

In addition to analyzing ADA activities, data were also evaluated to determine whether any important trends exist among dentists in their preferences for ADA programming. Several themes emerged from the analysis:

- ***The ADA value proposition:*** *Programs and activities were independently evaluated according to the value they provide to member and non-member dentists. However, certain general trends emerged. Broadly speaking, the core value that ADA provides exists in offering scientific and business resources that give direct, tangible support to members in their day-to-day work. This includes science and learning, networking, and business resources that directly assist the member. It also includes advocacy work that addresses key issues of concern to dentists: regulation, research, access and insurance.*
- ***Networking and learning:*** *Like many healthcare associations, the ADA provides a set of activities/benefits that support members in forming professional relationships (networking), sharing knowledge with one another, and advancing the science and understanding of dentistry. Oftentimes, these tangible benefits form the core value proposition of healthcare societies because they offer unique value that is not available elsewhere. They allow members of the profession to continue learning, play a role in advancing the profession, and connect professionals to one another which may provide critical support in their day-to-day work.*

The key to these important benefits is that they are tangible in nature and provide direct value. Dentists rate these types of knowledge and networking benefits highly among all ADA activities. They include science-oriented activities (e.g., JADA, Scientific Information), education and training (e.g., Center for Evidence-based Dentistry, ADA Library and Archives, National Continuing Education Outside of ADA Annual Meeting), and networking (e.g., Annual Meeting, State and Local Dental Society Programs).
- ***Business support:*** *In addition to networking and learning, dentists favor activities that support their business. Programs that fall into this category include those that support the administration of their business (e.g., CDT, Group Purchasing Discounts, Credential Verification Service), provide competitive information or advantage (e.g., Benchmarking Third Party Payers), or support patient service (e.g., Dental Drug Information, Product Evaluation). These benefits are both tangible and provide direct value to members.*
- ***“Good of the order” benefits:*** *An important activity for any association is to self-regulate and create standards of practice and professionalism, represent the field/profession to lawmakers, the public and other key stakeholders, and to perform other types of collective action. Although a critical part of the organization’s mission, these types of programs, oftentimes referred to as “good*

1 *of the order” benefits, create unique challenges for professional societies. They are often financial*
2 *“loss leaders” since they are expensive to administer and may be resource intensive. Moreover the*
3 *benefits of these activities are available to paying members as well as the profession as a whole;*
4 *one does not need to join the association to benefit from the programs. “*

5 Further information on grass roots dentists’ evaluations of each program are contained in the McKinley
6 member survey report that has been presented to the Budget and Finance Committee, Board of Trustees,
7 and Councils.

American Dental Association

2017 Budget Programs

Dollars in Thousands

Ref #	Program	Survey Priority		Number of Employees	Revenue	Operating Expense			Net Income Before Reserves
		Rank	Priority			Employees	Other	Total	
1	Board of Trustees	NA	NA	6.5	-	1,337	2,412	3,749	(3,749)
2	House of Delegates	NA	NA	3.0	-	487	737	1,224	(1,224)
3	Strategy Management	NA	NA	0.8	-	138	0	138	(138)
4	Operational Management	NA	NA	4.5	-	824	110	934	(934)
5	International Relations	58	Low	0.5	5	52	67	119	(114)
6	FDI World Dental Federation	57	Low	0.8	12	70	618	689	(677)
7	New Dentist Cmte Admin	NA	NA	1.0	55	150	186	336	(281)
	Total Administrative Services			17.0	72	3,058	4,131	7,189	(7,117)
8	International Business	NA	NA	0.0	-	-	-	-	-
9	Corporate Relations	NA	NA	0.0	-	-	-	-	-
10	Product/Benefit Development	NA	NA	0.0	-	-	-	-	-
	Total Business Relations			0.0	-	-	-	-	-
11	Cash Grant to ADA Foundation	32	Med-Low	0.0	-	-	2,629	2,629	(2,629)
12	Overhead Billing	NA	NA	0.0	105	-	-	-	105
13	ADABEI Royalties	54	Low	0.0	4,503	-	1,064	1,064	3,439
14	Retirees	NA	NA	0.0	-	-	-	-	-
15	Benefits Not Allocated to Divisions	NA	NA	0.0	-	200	-	200	(200)
16	Expense Offsets	NA	NA	0.0	-	132	-	132	(132)
17	Association-wide expenses	NA	NA	0.0	18	2,688	543	3,231	(3,213)
18	Depreciation	NA	NA				2,972	2,972	(2,972)
	Total Central Administration			0.0	4,626	3,020	7,207	10,227	(5,601)
19	State and local society Marketing Support	NA	NA	4.4	4	585	4	589	(585)
20	Council on Communications Admin	NA	NA	1.0	-	148	31	179	(179)
21	Public Ed. and Dental Utilization Outreach	28	Med-High	4.1	-	534	372	906	(906)
22	Advocacy and Action for Dental Health	19	Med-High	3.6	-	525	743	1,268	(1,268)
23	Mkt and Rsrch for Member Prods and Svcs	NA	NA	5.3	-	747	1,209	1,957	(1,957)
24	Digital and Video for Member Prods and Svcs	48	Low	12.8	-	1,347	894	2,241	(2,241)
25	Depreciation						1	1	(1)
	Total Communications & Marketing			31.0	4	3,886	3,254	7,141	(7,137)
26	ADA Studios	NA	NA	1.0	70	113	67	181	(111)
27	Council on ADA Sessions	NA	NA	1.7	-	223	132	356	(356)
28	ADA Mission of Mercy at Annual Meeting	52	Low	0.0	-	-	-	-	-
29	New Dentist Conference	55	Low	0.0	341	-	443	443	(102)
30	Annual Meeting	26	Med-High	11.1	8,679	1,219	5,291	6,510	2,169
31	Conference Services & Mtg Rm Mgt	NA	NA	4.3	353	551	158	709	(356)
32	National Cont Ed. Outside of ADA Meeting	30	Med-High	4.0	864	467	414	881	(17)
31	Depreciation						98	98	(98)
	Total Conf Svcs and Continuing Education			22.0	10,306	2,573	6,605	9,178	1,128
32	Contingency Programs			0.0	-	-	1,000	1,000	(1,000)

American Dental Association

2017 Budget Programs

Dollars in Thousands

Ref #	Program	Survey Priority		Number of Employees	Revenue	Operating Expense			Net Income Before Reserves
		Rank	Priority			Employees	Other	Total	
33	Credential Verification Services	31	Med-High	0.8	-	89	4	93	(93)
34	Contin Ed. Provider Recognition (CCEPR)	23	Med-High	2.6	317	342	63	405	(87)
35	CDEL-Dental Admission Testing	43	Med-Low	13.0	7,881	1,312	1,916	3,228	4,653
36	CODA	34	Med-Low	15.8	3,899	1,736	1,509	3,244	655
37	National Board Dental Examinations	24	Med-High	22.3	12,992	2,320	4,449	6,768	6,224
38	Testing Services for Outside Clients	56	Low	4.0	2,189	411	644	1,056	1,133
39	ADA Library and Archives	21	Med-High	5.7	2	570	139	709	(707)
40	Dental Education and Licensure	7	High	4.9	-	651	117	768	(768)
	Total Education			69.0	27,281	7,430	8,840	16,271	11,010
41	Budgeting and Forecasting	NA	NA	3.7	-	648	22	670	(670)
42	Financial Rept, Compliance, Treas	NA	NA	5.4	-	731	11	741	(741)
43	Transaction Accounting	NA	NA	11.3	-	1,108	17	1,124	(1,124)
44	Governance & Volunteer Support	NA	NA	1.7	1,500	314	49	363	1,137
45	Purchasing/Mail/Shipping	NA	NA	5.4	-	505	81	587	(587)
46	Printing/Duplicating	NA	NA	3.2	-	302	-	302	(302)
47	Headquarters Building	NA	NA	0.4	3,919	84	5,141	5,225	(1,307)
48	Washington Building	NA	NA	0.1	1,775	21	1,011	1,032	743
49	Depreciation	NA	NA				1,518	1,518	(1,518)
	Total Finance, Operations, and Buildings			31.0	7,194	3,712	7,850	11,562	(4,369)
50	Advocacy for Science, Education, Appropriations	25	Med-High	2.8	-	487	145	632	(632)
51	Advocacy for Dental Practice, Federal Dental Ser	9	High	4.8	-	744	330	1,074	(1,074)
52	Advocacy for Access, Dental Coverage Issues	12	High	2.7	-	425	302	727	(727)
53	Washington Leadership Conference	44	Med-Low	1.3	-	177	367	544	(544)
54	Lobbyist Conference	27	Med-High	0.2	50	24	50	75	(25)
55	State Public Affairs (SPA) Program	33	Med-Low	6.2	-	901	2,931	3,831	(3,831)
56	ADPAC Administration	8	High	3.5	-	444	211	655	(655)
57	Fluoridation	15	Med-High	1.8	-	240	199	439	(439)
58	Interprofessional Relations	49	Low	0.0	-	-	94	94	(94)
59	Access, Community Oral Health Infrastructure an	39	Med-Low	1.8	-	319	252	571	(571)
60	Council on Access Prevention and Interprofessor	NA	NA	2.9	-	409	235	644	(644)
61	Council on Government Affairs	NA	NA	0.2	-	26	70	96	(96)
	Total Government Affairs			28.0	50	4,197	5,186	9,383	(9,333)
62	Services to CODA	36	Med-Low	2.5	-	303	1	304	(304)
63	Policy Research	22	Med-High	9.5	5	1,349	859	2,208	(2,203)
64	Services to ADA Divisions	NA	NA	1.1	-	159	-	159	(159)
65	Services to External Clients	51	Low	1.0	290	143	-	143	147
	Total Health Policy Institute			14.0	295	1,954	859	2,814	(2,519)
66	Benefits - HRIS	NA	NA	1.6	-	217	5	222	(222)
67	Employee Relations	NA	NA	1.7	-	315	56	371	(371)
68	Staffing	NA	NA	1.7	-	240	278	517	(517)
69	Employee Development	NA	NA	1.2	-	247	320	568	(568)
70	Talent Management, Pay and Organization Devel	NA	NA	1.2	-	204	126	330	(330)
	Total Human Resources			7.4	-	1,223	785	2,008	(2,008)

American Dental Association

2017 Budget Programs

Dollars in Thousands

Ref #	Program	Survey Priority		Number of Employees	Revenue	Operating Expense			Net Income Before Reserves
		Rank	Priority			Employees	Other	Total	
71	Finance & Enterprise IT Support	NA	NA	8.7	-	1,415	1,148	2,563	(2,563)
72	Websites for National	NA	NA	4.2	-	611	294	905	(905)
73	Infrastructure for States & Locals	NA	NA	2.0	-	301	50	351	(351)
74	SharePoint & Rptg for States & Locals	NA	NA	1.4	-	226	0	227	(227)
75	Aptify for States & Locals	NA	NA	6.4	-	830	449	1,279	(1,279)
76	Websites for States & Locals	NA	NA	1.7	-	307	231	538	(538)
77	Aptify for National	NA	NA	7.8	-	1,107	511	1,618	(1,618)
78	Infrastructure for National	NA	NA	13.1	-	1,704	1,092	2,796	(2,796)
79	SharePoint & Reporting for National	NA	NA	4.7	-	687	283	970	(970)
80	Depreciation						2,318	2,318	(2,318)
	Total Information Technology			50.0	-	7,189	6,377	13,566	(13,566)
81	Governance	NA	NA	3.8	5	713	646	1,359	(1,354)
82	Contracts	NA	NA	5.7	-	887	4	891	(891)
83	Litigation Management and Support	NA	NA	1.0	-	189	90	279	(279)
84	Ongoing Legal Advice/Counsel	NA	NA	4.0	38	791	204	995	(957)
85	Review of Potential Risk Issues	NA	NA	2.2	-	406	67	473	(473)
	Total Legal Affairs			16.6	43	2,986	1,011	3,997	(3,954)
86	Outreach to ADA State and Local Societies	NA	NA	6.4	-	963	537	1,500	(1,500)
87	Member Recruit & Retention Mkt and Res	NA	NA	5.2	-	615	326	942	(942)
88	Dental School Outreach	NA	NA	0.5	-	61	261	323	(323)
89	Council on Membership Admin	NA	NA	2.2	-	273	75	348	(348)
90	CMIRP Admin	NA	NA	1.8	-	210	55	265	(265)
91	Leadership Team Services	NA	NA	2.8	-	435	152	587	(587)
92	Members Ins. & Retirement Programs	13	High	0.7	8,508	133	34	167	8,341
93	Diversity and Inclusion	NA	NA	1.4	-	181	25	206	(206)
94	Success Dental Student Program	53	Low	1.5	150	107	203	311	(161)
95	Membership Operations	NA	NA	12.0	54,896	1,505	563	2,068	52,828
96	Member Service Center	11	High	12.5	-	1,172	7	1,178	(1,178)
	Total Member & Client Services			47.0	63,554	5,655	2,240	7,895	55,659
97	Practice Management Guidelines (PMG)	47	Low	0.0	-	-	-	-	-
98	Council on Dental Practice Admin	NA	NA	1.2	-	198	81	279	(279)
99	Council on Dental Benefits Admin	NA	NA	0.8	-	153	83	236	(236)
100	Center for Professional Success (CPS)	42	Med-Low	4.3	28	564	214	778	(750)
101	Dental Practice Support (DPS)	37	Med-Low	4.4	48	694	81	776	(728)
102	Third Party Payer Advocacy	40	Med-Low	2.8	-	401	20	421	(421)
103	Dental Informatics (DI)	38	Med-Low	2.3	-	397	71	468	(468)
104	Quality Assessment and Improvement (QAI)	41	Med-Low	3.8	-	553	21	575	(575)
105	CDT Codes (CDT)	4	High	2.8	-	406	39	446	(446)
106	ANSI and ADA Standards	35	Med-Low	4.4	60	577	497	1,074	(1,014)
107	Depreciation						-	-	-
	Total Practice Institute			27.0	135	3,943	1,109	5,052	(4,917)
108	Product Development & Sales			14.4	10,084	1,814	3,356	5,169	4,915

1

American Dental Association

2017 Budget Programs

Dollars in Thousands

Ref #	Program	Survey Priority		Number of Employees	Revenue	Operating Expense			Net Income Before Reserves
		Rank	Priority			Employees	Other	Total	
109	JADA	2	High	3.4	2,257	579	1,588	2,168	89
110	ADA News	16	Med-High	8.6	4,380	1,014	3,081	4,095	285
111	Digital Products	45	Low	6.7	2,034	817	311	1,128	905
	Total ADA Publishing			18.6	8,671	2,411	4,980	7,391	1,279
112	Council on Scientific Affairs - Admin	NA	NA	3.0	-	396	64	460	(460)
113	Scientific Information	6	High	5.8	36	751	126	877	(841)
114	Research and Standards	29	Med-High	7.4	-	861	215	1,076	(1,076)
115	ADA Seal of Acceptance Program	10	High	4.7	1,064	515	92	607	457
116	Center for Evidence-Based Dentistry	17	Med-High	6.6	170	729	379	1,109	(939)
117	Product Evaluation	18	Med-High	6.7	-	813	333	1,145	(1,145)
118	Depreciation						82	82	(82)
	Total Science Institute			34.0	1,270	4,065	1,291	5,356	(4,086)
	Total Pretax Income Before Reserves			427.0	133,584	59,117	66,082	125,200	8,384
119	Income Taxes								(1,650)
120	Transfer of Royalty to Reserves								(7,000)
	Net Operating Surplus / (Deficit) after transfers			427.0	133,584	59,117	66,082	125,200	(266)

Changes from 2016 Budget to 2017 Budget by Activity

The following pages identify the changes from the 2016 Budget to the 2017 budget. For most changes, the rationale for the Budget and Finance Committee's decision is provided. Although these are not presented as formal meeting notes of the Budget and Finance Committee's budget review meeting, most of the comments capture the key points of the Committee's discussion.

During the initial phases of the budget creation process, many ADA Division Vice Presidents requested larger expense budgets than are reflected in this current recommendation. The Budget & Finance Committee and Management balanced the budget by rejecting some of the proposed expense increases and identifying targeted expense reductions and investments itemized below.

With current revenue and expense trends, the ADA may need to seek additional cost reductions next year for the 2018 budget. Approval of the expense reductions proposed below for 2017 will avoid creation of an even wider gap to close in 2018.

Starting Point: 2016 Budget (Deficit)**\$ (1,234)**

	Revenue Adjustment Inc/(Dec)	Expense Adjustment Dec/(Inc)	Net Adjustment	Rationale
2017 Budget Adjustments				
Central Administration				
Increase Grant to ADA Foundation to support VRC	-	(268)	(268)	*SEE NOTE 1
Administrative Services				
Distinguished Service Award Funding Request	-	(5)	(5)	Covers cost of video for DSS award
BOT Stipend Increase		(108)	(108)	In line with staff merit increase of 3%
FDI World Dental Federation Membership Dues Increase		(19)	(19)	Adjustment needed due to exchange rates
Eliminate Council Chair/Vice Chair/Board Strategic Meeting		47	47	Elimination of the Council/Chair Board meeting based on limited strategic value-could be treated as a special request if it is later determined there's a need for planning reasons.
Fund an additional 6 FDI Delegates		(65)	(65)	Continued presence at FDI 2017 convention may strengthen bid for San Francisco location which could be profitable for the ADA.
Decrease in Base Salary/Taxes/Benefit Costs		48	48	
Salary/Taxes/Benefits reduction from impact of moving open/new positions to 7/1/16 start dates		38	38	
Legal Affairs				
Reduce Outside Legal Fees to recent actual levels	-	100	100	Could reduce outside legal fees by \$100k and return to the board for contingent fund requests, but then there are no FTE opportunities given ongoing work
Increase in Base Salary/Taxes/Benefit Costs		(177)	(177)	
Communications & Marketing				
Reduce Digital and Video Support for Member Products and Services	-	200	200	This can be decreased to reduce \$200k of non staff costs by repurposing a position to support campaigns internally. This includes everything: producers, production costs, etc. Another option might be to postpone one of the five campaigns for a year. Each campaign needs about \$500k/year to run effectively. This reduction will reduce paid support.
Eliminate Ad Council: Film and Slide Distribution	-	350	350	This can be eliminated as campaigns have a life cycle and this could be near its end. If continued, there may only be limited incremental improvement in the public health impact.
Reduce Outside Printing	-	12	12	Gain efficiencies and use more digital media
Reduce Travel	-	25	25	Be more efficient with travel.

	Revenue Adjustment	Expense Adjustment	Net Adjustment	Rationale
<u>2017 Budget Adjustments</u>	<u>Inc/(Dec)</u>	<u>Dec/(Inc)</u>	<u>Adjustment</u>	
Personalization Strategy Development	-	(290)	(290)	New funding request - There is a possibility to reduce one FTE to reduce people costs.
Integrated Marketing and Research for Member Growth	-	(840)	(840)	Non-Staff costs - Support ADH and the paid promotion, search engine optimization.
Digital Communications for Member Growth	-	(550)	(550)	For member growth. Look to gain efficiencies and continue to look for duplication of efforts across the ADA. Before hiring any more writers, bring all content writers together, assess capability and capacity and then have a new strategy for deployment of content and marketing writers throughout the ADA divisions.
Increase in Base Salary/Taxes/Benefit Costs	-	(44)	(44)	
Salary/Taxes/Benefits reduction from impact of moving open/new positions to 7/1/16 start dates		180	180	
Member & Client Services				
Reduction in Membership Dues Revenue	(278)	-	(278)	Continued decline in Full Dues paying members
Reduce Leadership Team Services	-	317	317	Initial budget proposal was this reduction, but as shown in line below the Board reinstated a portion.
Add 1 FTE Back to Leadership Team Services Program		(240)	(240)	Reversal of much of the above item; resource needed to coordinate initiatives with State and Local societies
Eliminate MPG Grants	-	275	275	*SEE NOTE 2
Spot Grants for Capacity Building	-	(100)	(100)	New initiative that might help in member growth.
Student Dental Brand Ambassador	-	(100)	(100)	New initiative that might help in member growth.
"Tangibles" Concept for Early Career Dentists	-	(150)	(150)	New initiative that might help in member growth.
Increase in Base Salary/Taxes/Benefit Costs		(24)	(24)	
Salary/Taxes/Benefits reduction from impact of moving open/new positions to 7/1/16 start dates		143	143	

	Revenue Adjustment	Expense Adjustment	Net	
2017 Budget Adjustments	Inc/(Dec)	Dec/(Inc)	Adjustment	Rationale
Science Institute				
Caries and Periodontal Disease Task Forces	-	(30)	(30)	
Product Evaluation: PPR Bimonthly Publication	-	(70)	(70)	\$70k funding makes this a quarterly publication
Increase Seal Program Revenue Based on New Pricing	300	-	300	New pricing on Seal products
Increase in Base Salary/Taxes/Benefit Costs	-	(506)	(506)	
Salary/Taxes/Benefits reduction from impact of moving open/new positions to 7/1/16 start dates		457	457	
Conferences & Continuing Education				
Location and attendance of Annual Meeting	(195)	713	518	Attendance/exhibitor participation forecasted lower in ATL. Expenses also reduced.
Increase Net Revenue throughout division	(37)	196	159	Net impact of various expense reductions b/t budget Rd I and II - included in DCCE budget.
Eliminate coordinator position	-	75	75	Eliminated 1 FTE within division. Kept portion of this FTE expenses to pay Aramark who will be adding 1 position to ADA account covering majority of former in-house responsibilities.
Increase in Base Salary/Taxes/Benefit Costs		(418)	(418)	Includes 2 FTE positions moved from Membership into DCCE effective Q1 2016
Salary/Taxes/Benefits reduction from impact of moving open/new positions to 7/1/16 start dates		186	186	
Education				
Increase in net revenue in Admission and NB testing	869	559	1,428	Increase in Administrations and expenses more in line with actual spending
Increase DAT fee to \$470 (8% increase; \$40)	537	-	537	
Eliminate 1 LAAB meeting	-	11	11	Library board only needs to meet once a year
1 New FTE - Customer Service Coordinator	-	(95)	(95)	Credentialing will eventually be a non dues revenue source but it will take 3-5 years to achieve profit margins.
Three New FTE's for Testing Services	-	(367)	(367)	These positions are predicted to be busy immediately. Test construction is a rare skill set and these positions may be difficult to fill. Demonstrated strong trend in revenue growth.
Increase in Base Salary/Taxes/Benefit Costs	-	(764)	(764)	
Salary/Taxes/Benefits reduction from impact of moving open/new positions to 7/1/16 start dates		646	646	

2017 Budget Adjustments	Revenue Adjustment Inc/(Dec)	Expense Adjustment Dec/(Inc)	Net Adjustment	Rationale
Government Affairs				
Reduction - State Public Affairs (SPA) Program	-	465	465	*SEE NOTE 3
Interprofessional Relations	-	150	150	*SEE NOTE 4
Enhancement for 2017 Washington Leadership Conference	-	(109)	(109)	ADA pays a flat fee for members to attend. This money is for expansion to include 550 new dentists and asda students.
Increase Revenue for Lobbyist Conference	28	-	28	Don't eliminate the conference, but charge a reg fee that covers cost and eliminate \$28k per year.
Increase in Base Salary/Taxes/Benefit Costs	-	(221)	(221)	
Health Policy Institute				
Policy Research - Expense Reduction	-	185	185	Eliminating one staff position and reducing planned research in the area of dentist career choices.
Increase Revenue - Services to External Clients	95	-	95	Perform more revenue generating tasks and reduce internal health policy research
Increase in Base Salary/Taxes/Benefit Costs	-	(327)	(327)	
Salary/Taxes/Benefits reduction from impact of moving open/new positions to 7/1/16 start dates		83	83	
Practice Institute				
Practice Management Guidelines (PMG) - Eliminate non-sta	-	384	384	*SEE NOTE 5
Quality Improvement Coordinator - New FTE	-	(101)	(101)	This head count will be taken from PMG and repurposed. This work needs to be scaled up-quality measures for dentistry.
Various Additional Practice Institute Reductions	-	48	48	
Increase in Base Salary/Taxes/Benefit Costs	-	(168)	(168)	
Publishing				
Reduction in Advertising revenue and printing & publication expenses	(858)	460	(398)	Division believes 2017 budget should be more in line with actual performance
Corporate Affiliate Project	120	(40)	80	
Reduce expenses division-wide	-	105	105	
Membership Survey	-	(40)		Needs to be completed on an annual basis
Increase in Base Salary/Taxes/Benefit Costs	-	(6)	(40)	

2017 Budget Adjustments	Revenue Adjustment Inc/(Dec)	Expense Adjustment Dec/(Inc)	Net Adjustment	Rationale
Business Relations				
International Business reduction in non-staff costs	-	90	90	*SEE NOTE 6
Product Development & Sales				
Reduction in Practice Mgmt, HIPAA and Personalized Product Sales	(339)	143	(196)	
Increase in Net Revenue - Database Licensing, Patient Educ & CDT	817	(315)	502	
Increase in Base Salary/Taxes/Benefit Costs	-	(263)	(263)	
Salary/Taxes/Benefits reduction from impact of moving open/new positions to 7/1/16 start dates		200	200	
Information Technology				*SEE NOTE 7
Increase in Outside Services Expense	-	(495)	(495)	Increase in Consulting expense: this includes Consulting and Outside Services. Consulting is increased in 2017 to build the personalized web, social, community and content structure that will personalize the online member experience. Outside Services is cloud computing. We are moving all applications to the cloud. Ultimately, this will result in operating cost reductions in staff, consulting, and software expense.
Process Flow Documentation	-	10	10	impact-delayed until 2018
Brightwork - ADA project portfolio management project	-	13	13	impact-delayed until 2018
CTO Consulting Budget	-	196	196	Would need to ask for Contingent funding from BOT for ANY new projects that arise during the year
BCP Training	-	17	17	Can put off for a year
Hyperion Support	-	32	32	Moving to Adaptive planning for budgeting on March 1
TSC Support	-	20	20	Could cause a minor service delay
PeopleSoft Support	-	50	50	NetSuite system will go live on January 1

2017 Budget Adjustments	Revenue	Expense	Net	Rationale
	Adjustment	Adjustment	Adjustment	
	Inc/(Dec)	Dec/(Inc)		
Sitecore Support	-	10	10	
ADA Connect	-	30	30	
WebTrends/Expion Replacements	-	20	20	
Content Marketing Solutions	-	85	85	
SAS Licenses Reduction	-	10	10	
Miscellaneous Software Licenses	-	22	22	
Eliminate Open Position Sr. App Developer (DESS E08)	-	124	124	
Eliminate Open Position Sr. App Developer (DESS E08)	-	124	124	
Eliminate Open Position - Tech Product Support Specialist (-	103	103	
Eliminate Position - Telecom Manager (DTAI E09)	-	136	136	
Consulting to support eliminated position	-	(40)	(40)	This is to support telco as we move to outsource it.
Aptify Continuing Education Enhancements - Phase II	-	(19)	(19)	Phase II Aptify Enhancements
Aptify DTS Accounting Functionality Updates	-	(15)	(15)	Phase II Aptify Enhancements
Aptify eCatalog Enhancements	-	(13)	(13)	Phase II Aptify Enhancements
Aptify Meetings Upgrades - Phase II	-	(25)	(25)	Phase II Aptify Enhancements
AR Lockbox Import Process	-	(15)	(15)	We have done this with some states already but need to continue to upgrade tech systems.
ADA.org Redesign	-	(191)	(191)	This is rethinking a new look and field and plugging into everything into a single design. We need to keep the larger amount so this is a reduction on what will be spent on the ADA .org redesign
Aptify Customer Relationship Management (CRM) Analyst	-	(72)	(72)	This will also support states and locals. This needs to be scoped out and sized to fit 4 months. This is the reduced amount
Project Management Support	-	(240)	(240)	PM Support is needed due to the major ADA.org project that will require one FTE Project Manager. This is a temp to support other projects and will only be needed for 2017.
Additional FTE reduction	-	60	60	Position performs data entry for division
Increase in Base Salary/Taxes/Benefit Costs		(752)	(752)	
Salary/Taxes/Benefits reduction from impact of moving open/new positions to 7/1/16 start dates		187	187	

Roll-Forward - 2016 Budget to 2017 Budget

	Revenue Adjustment	Expense Adjustment	Net Adjustment	Rationale
2017 Budget Adjustments	Inc/(Dec)	Dec/(Inc)	Adjustment	
Finance, Operations & Buildings				
Rental Income increase of \$1.4m, investment income decline of \$1m	378	-	378	Rental Income based on projected new tenant lease agreements, investment income fluctuation
Eliminate in-house print shop & 1 mailroom staff	-	87	87	Eliminating printing could reduce one FTE
Washington Building Additional Operating Expenses	-	(45)	(45)	Need these dollars for standard operating expenses of bldg
Increase in Base Salary/Taxes/Benefit Costs		(161)	(161)	
Human Resources				
Reduce Outsourced Training expense	-	78	78	Development person was added due to long term consultant being used. In source development
Market Study for Executive Director	-	(10)	(10)	
Phishing Security Training	-	(10)	(10)	
Increase in Base Salary/Taxes/Benefit Costs		(93)	(93)	
Association-Wide Changes Below:				
Increase in Insurance Royalty	500		500	
Miscellaneous changes throughout ADA	(31)	423	392	
Total 2017 Operating Budget Adjustments	1,906	(288)	1,618	
Non-Operating Adjustments				
Income Tax Expense	-	(150)	(150)	
Add Back of Depreciation	-	375	375	
Operating Capital Expenditures	-	-	2,088	
Transfer to Capital Reserve	-	-	(2,463)	
Transfer to Insurance Royalty Reserve	(500)	-	(500)	
2017 Budget Surplus/(Deficit) after Board of Trustee Meeting			(266)	

Note 1

Budget & Finance Committee recommended total 2017 ADAF grants of \$2,629, a \$268K increase over 2016 budget, with an increase of \$768 for Volpe Research Center and decrease of \$500 for Philanthropic/Administration. In response to questions from the ADA Board, the ADA Foundation Board has hired a consultant to assess and make recommendations regarding the sustainability of the organization, the efficiency of operations, and related matters.

This results in two 2017 ADA Grants to the ADA Foundation:

1. \$1,861K Grant for Philanthropic Activities, restricted in two parts:
 - a) Full funding of the 2017 expenses of the Give Kids a Smile and International Humanitarian Programs
 - b) Any excess of the \$1,861 over the 2017 costs of Give Kids a Smile and International Humanitarian may be used to fund other philanthropic (non-research) activities or philanthropic administration expenses.
2. \$768K designated to fund 2017 activities in the Volpe Research Center (100 % of the amount requested by the Foundation)

Note 2

- No demonstrated effect on recruitment and retention.
- Large effort to administer—potential distraction for both council and staff.
- Program was authorized as a temporary pilot to test innovative new ideas that could be shared across states.
- Morphed into a subsidy in which states began to budget for grants to cover ongoing spending.
- Same programs funded repeatedly—not innovation.

Note 3

2015 Actual:	\$1,832K operating + \$179K reserves = \$2,011K
2016 Budget Proposed by Board:	2,007
2016 Budget After House of Delegates:	2,482
2017 Budget:	2,007

- Addition of \$475K by 2016 House of Delegates is not needed in 2017, nor spent previously.
- Budget should cover the expected need rather than the worst case scenario---if unexpected issues arise in 2017 then the Board could authorize reserve funds.

Note 4

- Create a cross-functional committee to manage this critical work.
- Multiple ADA divisions drive interprofessional interfaces that are more valuable than a dedicated IR department.
- Due to the changing environment, the Committee believes that interprofessional relations can be better executed through a cross functional initiative involving ADA Science and Dental Practice resources.

Note 5

- Five guidelines will be completed in 2016. Distribution of these five through the Center for Professional Success will continue during 2017.
- Dentists ranked this program “Low-Priority” and #47 out of 58 programs, supporting the need for a pause to assess outcomes of the first five guidelines before producing more guidelines.

Note 6

- Ranked by dentists as the very bottom rated program, # 58 out of 58 programs.
- Budget & Finance Committee reviewed detailed expenses and revenue from international sources and recommends elimination of all travel to international dental meetings (except FDI) and special international reception events.
- Effectiveness of these activities on international revenue is unclear to the Budget & Finance Committee.

Note 7

- Major 2017 investment in redesign of ADA.org to be more interactive and personalized
- Continued new investments in Aptify System
- Reprioritization and improved efficiency in internal enterprise systems and internal infrastructure

1 **Capital Expenditures and Reserve Funds**

The ADA has two types of capital expenditures, each with its own procedures for reporting and approvals: Reserve Capital and Operating Capital. In order to ensure that funding is available to cover major capital replacement projects as well as "Operating Capital" projects which are included in annual operating budgets, the ADA defines each category as follows:

- 2 1. **Operating Capital** spending to add, upgrade, or replace more common and short-lived fixed
3 assets. This category should include all items replaced within 5 years. A good example of this
4 would be the ongoing annual replacement of computer equipment which is done on a continuing
5 annual basis with 1/3 of all PC equipment turned over each year such that every computer at the
6 ADA is retired and replaced every 3 years. Operating Capital Spending is included as a line item
7 with detail support in the annual operating budget in Board Report 2.
8
- 9 2. **Reserve Capital** spending is a separate category of larger and much less frequent building repairs,
10 replacements, and renovations to ADA buildings. Such renovations will include the cost of tenant
11 improvements (TI) and related one-time costs to secure long term leases. Because this type of
12 major capital spending comes from a dedicated capital replacement reserve account, each actual
13 project must be reviewed and approved by the Finance Committee and Board. Costs of tenant
14 leasehold improvements must be justified as part of a complete capital authorization request (CAR)
15 in a Board report with appropriate economic analysis.

16 **Capital Replacement Reserve Fund (Established in 2013):** This reserve fund was created by the 2012
17 House of Delegates to eliminate the need for special membership dues assessments to fund large asset
18 replacements. In the long run, funding will be determined by the projected needs, but during the first few
19 years the fund contributions are equal to depreciation less operating capital expenditures. In other words,
20 in each year the excess of depreciation over operating capital is contributed to the capital reserve fund, as
21 shown in the table below.

22 **Royalty Reserve Fund (Established in 2013):** House Resolution 84H-2013 and Board action created a
23 designated reserve funded by royalty revenue from the ADA Member Insurance Plans. Although these
24 funds were segregated from annual ADA operating budgets, House Resolution 84H-2013 also provided that
25 reserve funds would be available to build member value, long term dues and financial stabilization.

1	American Dental Association		
2	Budget Depreciation and Capital Expenditure Summary		
	\$ 000		
		2016 Budget	2017 Budget
3			
4	Operating Capital and Contribution to Replacement Fund		
5			
6			
7	Depreciation/Amortization	\$6,613	\$6,988
	Operating Capital Expenditures		
	Science Institute		(241)
	Division of Conferences and Continuing Education	(355)	(35)
	Finance & Operations, Buildings	(1,178)	(270)
	Information Technology	(2,962)	(1,861)
	Total	(4,495)	(2,407)
	Net: Contribution to Replacement Fund	(2,118)	(4,581)
	Capital Replacement Fund		
	Contributions (from above)	(2,118)	(4,581)
	Replacement Fund Capital Expenditures		
	Finance and Operations, Buildings	(4,362)	(5,968)
	Replacement Fund Net Contributions Less Expenditures	\$ (2,244)	\$ (1,387)
	Memo: Total Capital Expenditures	\$ (8,857)	\$ (8,375)

1	List of 2017 Capital Expenditures by Division					
	Thousands of Dollars					
	Division Name: Conferences and Continuing Education					
		Q1	Q2	Q3	Q4	2017
	Food Service Equipment - Cafeteria			15		
	Audio Visual Equipment			20		
	Total Division	0	0	35	0	35
	Division Name: Science Institute					
		Q1	Q2	Q3	Q4	2017
	Non-contact Profilometer		40			
	Canon 5D Mark iii Camera and accessories	6				
	Inductively Coupled Plasma Optical Emission Spectrophotometer			75		
	Interferometer and accessories	120				
	Total Division	126	40	75	0	241
	Division Name: Information Technology					
		Q1	Q2	Q3	Q4	2017
	Desktop Replacements (80)				96	
	Computer Monitors (150)				75	
	Network Printer Replacements				45	
	Network Servers				250	
	Network Upgrades				95	
	BOT Laptop Replacements (15)		29			
	Laptop Replacements (140)				266	
	ARCServe Backup Software Licenses				10	
	AV Upgrades - DC Office				120	
	Telephone System Upgrade - Chicago				50	
	ADA.org Redesign			554		
	Aptify CE Enhancements			56		
	Aptify DTS Accounting Functionality Updates			45		
	Aptify eCatalog Enhancements			50		
	Aptify Meeting Upgrades			75		
	AR Lockbox Import Process			45		
	Total Division	-	29	825	1,007	1,861
	Division Name: Finance & Operations					
		Q1	Q2	Q3	Q4	2017
	Headquarters Building - Operating					
	Elevator Room AC Units		30			30
	Videotec	17				17
	Bldg Air Compressor Piping			38		38
	Boiler HW Pump Controls-BAS		16			16
	Chilled Water Variable Flow Controls		18			18
	DC Building - Operating					
	Fire Safety		4			4
	HVAC		34			34
	Plumbing		13			13
	Central Services					
	Furniture Replacement		100			100
	Total Division	17	215	38	-	270

List of 2017 Capital Expenditures by Division					
Thousands of Dollars					
	<u>Q1</u>	<u>Q2</u>	<u>Q3</u>	<u>Q4</u>	<u>2017</u>
Headquarters Building - From Capital Replacement Fund					
Replace Stairwell Fixtures with LEDs				48	48
Lobby Renovation	50				50
Lobby Retail Base Bldg Work	50				50
Common Corridor & Restrooms	250				250
Whitebox 8th Floor	175				175
Create Fitness Center	550				550
Retail E & W TI		130			130
Retail E & W LC	86				86
ASDA TI	66				66
Spec Tenant B TI			220		220
Spec Tenant B LC		46			46
Spec Tenant C TI		110			110
Spec Tenant C LC	23				23
Spec Tenant D TI		48			48
Spec Tenant D LC		10			10
Spec Tenant E TI		140			140
Spec Tenant E LC	31				31
ADABEI TI	110				110
Spec Make Offices TI	3,473				3,473
Washington DC Bldg - From Capital Replacement Fund					
Architect, Construction and Engineering Fees		71			71
Tenant Improvements		194			194
Leasing Fees		87			87
Total Division	4,864	836	220	48	5,968
	<u>Q1</u>	<u>Q2</u>	<u>Q3</u>	<u>Q4</u>	<u>2017</u>
Total ADA Operating Capital	143	284	973	1,007	2,407
Total ADA Capital Replacement Fund	4,864	836	220	48	5,968
Grand Total - 2017 Capital Requests	5,007	1,120	1,193	1,055	8,375

Recap of 2015 Results: Variances from 2015 Budget**American Dental Association Operations**

Summary of 2015 Results versus Budget

\$ 000

	2015 Budget	2015 Actual	Variance	
			Fav / (Unfav)	
			\$	%
Membership Dues	57,858	55,627	(2,231)	-3.9%
Advertising	6,926	6,386	(540)	-7.8%
Rental Income	4,685	3,676	(1,009)	-21.5%
Publication & Product Sales	6,840	6,220	(621)	-9.1%
Testing Fees & Accreditation	24,852	23,554	(1,298)	-5.2%
Meeting & Seminar Income	10,811	8,422	(2,389)	-22.1%
Other	24,106	23,291	(815)	-3.4%
Total	136,077	127,174	(8,903)	-6.5%
Total Salaries and Temporary Help	42,741	42,952	(211)	-0.5%
Total Fringe Benefits	11,895	10,524	1,371	11.5%
Total Payroll Taxes	2,829	2,942	(113)	-4.0%
Total Travel Expenses	7,566	6,930	636	8.4%
Printing, Publication & Marketing	9,691	7,968	1,723	17.8%
Consulting and Outside Services	11,339	9,781	1,558	13.7%
Professional Services	10,065	8,526	1,539	15.3%
Office Expenses	5,797	5,150	647	11.2%
Facility & Utility Costs	6,273	5,642	631	10.1%
Depreciation/Amortization	6,424	6,398	26	0.4%
ADA Foundation Grant	2,067	2,320	(253)	-12.2%
Other	10,284	8,955	1,328	12.9%
Total	126,971	118,089	8,882	7.0%
Income Taxes	1,300	1,639	339	26.1%
Net Income Before Reserves	7,806	7,446	(359)	-4.6%
Insurance Royalty and Other Items	(7,200)	(7,141)	59	-0.8%
Operating Surplus / (Deficit)	606	305	(300)	-49.6%

2015 operating surplus was close to budget but with offsetting variances in revenue and expenses. In order to improve accuracy, beginning with the 2016 budget initial budget proposals were analyzed in two pieces: expenditures in line with prior actual trends, and proposed expenditures in excess of the prior year. This appears to have resulted in more accurate budgets in 2016 and 2017.

Revenues

The Treasurer's forecast letter to the House of Delegates dated October 20, 2015 anticipated 2015 revenue of \$127.0 M. The actual result was within 0.1 % of that forecast. As discussed in the forecast letter, when the 2015 membership dues budget was set in 2014, there was optimism that new initiatives could bend the curve and turn the unfavorable membership trends. These initiatives included an increase in national direct mail campaigns and promotional discounts, more outreach managers supporting states, Information Technology for states, a new "Member Service University" provided to the states, cash grants to states, and other initiatives. These broad "across the board" national recruitment initiatives were not effective in achieving the 2015 budget for membership dues revenue.

Rental income reflects slower than expected leasing of the vacant space in the Chicago Headquarters building. Tenant leases to fill up empty space were not secured until 2016. Most other revenue shortfalls reflect aging product lines that have limited appeal to younger dentists or are under pressure from newer competition. Within advertising, the Mouthhealthy.org website failed to generate significant revenue and is now viewed as a service provided to state associations rather than a source of non-dues revenue. Also, ADA "Vendor Showcase" email advertising has lost ground to competitors that have better capabilities to target specific niches with relevant content.

The \$(2,389) shortfall in Meeting and Seminar Income is primarily due to lower than budgeted attendance and vendor participation at the ADA Meeting in Washington DC.

Expenses

As anticipated in the Treasurer's forecast letter to the House of Delegates, expenses were significantly below budget. The variance shown for employee benefits is largely due to favorable rates and actual experience for employee medical and life insurance. The assumed costs are lower in the 2017 budget. Printing, Publication, and Marketing costs were also favorable to budget due to: lower advertising commissions on lower advertising sales, reduced marketing initiatives for MouthHealthy.org, and the transfer of Give Kids a Smile costs to the ADA Foundation. Most of the variance in Consulting and Outside Services is due to product development work not completed in 2015 for both the new integrated National Dental Board Examination and Member Insurance plans. The largest variance that was unanticipated in the forecast provided to the House of Delegates in Professional Services costs, due to an accounting adjustment to Testing Administration costs.

Headquarters Building Valuation

The House adopted Resolution 69H-2002 (*Trans.*2002:372), directing that the estimated market value of the ADA headquarters building be included in Board Report 2. In June of 2016, real estate transaction professionals in Chicago estimated a gross sale value (before transaction costs) of \$75.5 million. This is a jump of \$28.7 million or 61% from last year's estimate, and reflects the value of major new tenant leases recently signed. The increase demonstrates the value of the approximately \$8.4 million in expenditures for leasehold improvements and transaction costs which will be paid from the capital replacement reserve in late 2016 and early 2017.

1 **APPENDICIES:**

2

3 Summaries by Division: Revenue, Expense, and Net Revenue/Expense

American Dental Association Operations

Revenue Summary by Division

\$ 000

	2014	2015	2016	2017	2017 v 2015		2017 v 2016B	
	Actual	Actual	Budget	Budget	Fav / (Unfav)		Fav / (Unfav)	
					\$	%	\$	%
Contingency General	-	31	-	-	(31)	-100.0%	-	NA
Administrative Services	13	54	12	72	18	34.2%	60	500.0%
Human_Resources	-	-	-	-	-	NA	-	NA
Legal Affairs	51	33	48	43	10	29.4%	(5)	-9.7%
Finance and Operations, Buildings	6,103	5,612	6,816	7,194	1,582	28.2%	378	5.5%
Central Administration	61,006	4,525	4,239	4,626	100	2.2%	386	9.1%
Information Technology	-	3	-	-	(3)	-100.0%	-	NA
Education	22,112	23,961	25,875	27,281	3,320	13.9%	1,406	5.4%
ADA Publishing	9,088	8,573	9,404	8,671	98	1.1%	(734)	-7.8%
Business Relations	523	1	-	-	(1)	-100.0%	-	NA
Conferences and Continuing Education	9,436	9,425	10,478	10,306	882	9.4%	(172)	-1.6%
Product Development and Sales	9,610	9,166	9,605	10,084	918	10.0%	479	5.0%
Communications	228	2	4	4	2	114.3%	-	0.0%
Government & Public Affairs	115	160	50	50	(110)	-68.7%	0	0.6%
Member and Client Services	8,945	64,152	63,805	63,554	(598)	-0.9%	(251)	-0.4%
Practice Institute	454	355	246	135	(219)	-61.8%	(110)	-44.8%
Health Policy Institute	114	242	206	295	53	22.1%	89	43.2%
Science	756	881	890	1,270	389	44.2%	380	42.7%
Total ADA	128,553	127,174	131,678	133,584	6,410	5.0%	1,906	1.4%

American Dental Association Operations

Expense Summary by Division

\$ 000

	2014 Actual	2015 Actual	2016 Budget	2017 Budget	2017 v 2015		2017 v 2016B	
					Fav / (Unfav)		Fav / (Unfav)	
					\$	%	\$	%
Contingency General	466	759	1,000	1,000	(241)	-31.7%	-	0.0%
Administrative Services	6,967	7,187	7,211	7,189	(2)	0.0%	22	0.3%
Human_Resources	2,196	1,916	2,112	2,008	(92)	-4.8%	104	4.9%
Legal Affairs	3,794	3,887	3,899	3,997	(110)	-2.8%	(98)	-2.5%
Finance and Operations, Buildings	9,837	10,427	11,250	11,562	(1,135)	-10.9%	(312)	-2.8%
Central Administration	2,294	8,685	8,966	10,227	(1,542)	-17.8%	(1,261)	-14.1%
Information Technology	11,645	13,841	12,879	13,566	275	2.0%	(687)	-5.3%
Education	14,926	14,329	16,284	16,271	(1,942)	-13.6%	13	0.1%
ADA Publishing	9,170	7,790	8,095	7,537	253	3.2%	558	6.9%
Business Relations	1,402	805	826	-	805	100.0%	826	100.0%
Conferences and Continuing Education	8,071	8,760	9,914	9,178	(418)	-4.8%	736	7.4%
Product Development and Sales	4,418	4,057	4,417	5,024	(967)	-23.8%	(607)	-13.7%
Communications	5,675	5,672	6,451	7,141	(1,469)	-25.9%	(690)	-10.7%
Government & Public Affairs	8,898	8,656	9,581	9,383	(727)	-8.4%	198	2.1%
Member and Client Services	8,686	8,672	8,415	7,895	777	9.0%	520	6.2%
Practice Institute	4,929	5,404	5,479	5,052	352	6.5%	426	7.8%
Health Policy Institute	2,763	2,828	2,778	2,814	14	0.5%	(36)	-1.3%
Science	5,069	4,414	5,357	5,356	(942)	-21.3%	1	0.0%
Total ADA	111,207	118,089	124,912	125,200	(7,111)	-6.0%	(288)	-0.2%

American Dental Association Operations

Net Income

\$ 000

	2014 Actual	2015 Actual	2016 Budget	2017 Budget	2017 v 2015		2017 v 2016B	
					Fav / (Unfav)		Fav / (Unfav)	
					\$	%	\$	%
Contingency General	(466)	(728)	(1,000)	(1,000)	(272)	37.3%	-	0.0%
Administrative Services	(6,954)	(7,133)	(7,199)	(7,117)	16	-0.2%	82	-1.1%
Human_Resources	(2,196)	(1,916)	(2,112)	(2,008)	(92)	4.8%	104	-4.9%
Legal Affairs	(3,743)	(3,854)	(3,851)	(3,954)	(100)	2.6%	(103)	2.7%
Finance and Operations, Buildings	(3,733)	(4,815)	(4,434)	(4,369)	446	-9.3%	65	-1.5%
Central Administration	58,712	(4,159)	(4,727)	(5,601)	(1,442)	34.7%	(875)	18.5%
Information Technology	(11,645)	(13,838)	(12,879)	(13,566)	272	-2.0%	(687)	5.3%
Education	7,185	9,632	9,591	11,010	1,378	14.3%	1,419	14.8%
ADA Publishing	(82)	783	1,309	1,134	350	44.7%	(175)	-13.4%
Business Relations	(879)	(805)	(826)	-	805	-100.0%	826	-100.0%
Conferences and Continuing Education	1,365	665	564	1,128	464	69.8%	564	99.9%
Product Development and Sales	5,191	5,110	5,188	5,060	(49)	-1.0%	(128)	-2.5%
Communications	(5,447)	(5,670)	(6,447)	(7,137)	(1,466)	25.9%	(690)	10.7%
Government & Public Affairs	(8,783)	(8,496)	(9,531)	(9,333)	(837)	9.8%	198	-2.1%
Member and Client Services	260	55,480	55,390	55,659	178	0.3%	268	0.5%
Practice Institute	(4,476)	(5,050)	(5,233)	(4,917)	133	-2.6%	316	-6.0%
Health Policy Institute	(2,649)	(2,586)	(2,572)	(2,519)	67	-2.6%	53	-2.1%
Science	(4,313)	(3,534)	(4,467)	(4,086)	(553)	15.6%	380	-8.5%
Total ADA	17,346	9,085	6,766	8,384	(701)	-7.7%	1,618	23.9%
Income Taxes	1,435	1,639	1,500	1,650	(11)	-0.7%	(150)	-10.0%
Net Income Before Reserves	15,911	7,446	5,266	6,734	(712)	-9.6%	1,468	27.9%
Add Back Depreciation	6,192	6,398	6,613	6,988				
Operating Capital Expenditures	(3,528)	(2,609)	(4,495)	(2,407)				
Transfers to Capital Reserve	(3,013)	(4,462)	(2,118)	(4,581)				
Transfers to Ins Royalty Reserve	(6,229)	(6,468)	(6,500)	(7,000)				
Non-Operating Items	(6,578)	(7,141)	(6,500)	(7,000)				
Operating Surplus / (Deficit)	9,334	305	(1,234)	(266)				

Resolutions

(See Resolution 9; Worksheet:2048)
(See Resolution 10; Worksheet:2049)

Resolution No. 9 NewReport: Board Report 2 Date Submitted: July 2016Submitted By: Board of TrusteesReference Committee: A (Budget, Business and Administrative Matters)Total Net Financial Implication: \$133,584 (Revenue) Net Dues Impact:
\$126,850 (Ongoing Expense)

Amount One-time Amount On-going FTE

ADA Strategic Plan Objective: Supports All Strategic Plan Objectives

How does this resolution increase member value: See Background

APPROVAL OF 2017 BUDGET

Background: (See Report 2 of the Board of Trustees to the House of Delegates: 2017 Budget, Worksheet:2002). The Board of Trustees is recommending a 2017 operating budget of \$133,584 in revenues and \$126,850 in expenses and income taxes, generating a surplus before transfers to the insurance royalty reserve of \$6,734. After transferring \$7,000 in royalty revenue to the insurance royalty reserve the operating budget is a net deficit of \$(266). The royalty reserve is dedicated to member value, long term dues and financial stabilization as directed by the House of Delegates Resolution 84H-2013 and Board action.

Resolution

9. Resolved, that the 2017 Annual Budget of revenues and expenses, including net capital requirements be approved.

BOARD RECOMMENDATION: Vote Yes.**Vote: Resolution 9**

ASAI	Yes	COLE	Yes	GEHANI	Yes	ROBERTS	Yes
BITTER	Yes	CROWLEY	Yes	JEFFERS	Yes	ROBINSON	Yes
BLACK	Yes	FAIR	Yes	KLEMMEDSON	Yes	STEVENS	Yes
BUCKENHEIMER	Yes	FISCH	Yes	KWASNY	Yes	ZENK	Yes
COHLMIA	Yes	GAMBA	Absent	MARRON-TARRAZZI	Yes	ZUST	No

Res. 9 (Bd. Rpt. 2)

Resolution No. 10 NewReport: Board Report 2 Date Submitted: July 2016Submitted By: Board of TrusteesReference Committee: A (Budget, Business and Administrative Matters)Total Net Financial Implication: \$1,053,000 Net Dues Impact: \$10Amount One-time Amount On-going \$1,053,000 FTE 0

ADA Strategic Plan Objective: Supports All Strategic Plan Objectives

How does this resolution increase member value: See Background

ESTABLISHMENT OF DUES EFFECITVE JANUARY 1, 2017

Background: The Board of Trustees at its July 2016 meeting approved a preliminary budget with net income before reserves of \$6,734 based on the current full dues rate of five hundred and twenty-two dollars \$(522). After planned transfer of \$7,000 in Member Insurance royalties into a designated reserve fund, the preliminary budget is at a net operating deficit of \$(266). A dues increase of \$10 is being sought. Notification of the proposed dues level will be circulated electronically to all constituent dental societies and announced in an official Association publication. The following resolution is submitted by the Board of Trustees.

Resolution

10. Resolved, that the dues of ADA active members shall be **\$532.00**, effective January 1, 2017.

BOARD RECOMMENDATION: Vote Yes.**Vote: Resolution 10**

ASAI	Yes	COLE	Yes	GEHANI	No	ROBERTS	Yes
BITTER	Yes	CROWLEY	No	JEFFERS	Yes	ROBINSON	Yes
BLACK	Yes	FAIR	Yes	KLEMMEDSON	Yes	STEVENS	Yes
BUCKENHEIMER	Yes	FISCH	Yes	KWASNY	Yes	ZENK	Yes
COHLMIA	Yes	GAMBA	Absent	MARRON-TARRAZZI	No	ZUST	No

Resolution No. None NewReport: Board Report 7 Date Submitted: September 2016Submitted By: Board of TrusteesReference Committee: A (Budget, Business and Administrative Matters)Total Net Financial Implication: None Net Dues Impact: Amount One-time Amount On-going FTE 0

ADA Strategic Plan Objective: Finance-Obj. 4: Unrestricted liquid reserves targeted at no less than 50%.

How does this resolution increase member value: See Background

1 **REPORT 7 OF THE BOARD OF TRUSTEES TO THE HOUSE OF DELEGATES: INFORMATION**
 2 **TECHNOLOGY INITIATIVES, EXPENDITURES AND ESTIMATED COSTS, AND ANTICIPATED**
 3 **FUTURE PROJECTS**
 4

5 **Background:** This report to the House of Delegates on the ADA's Information Technology initiatives,
 6 expenditures and future projects is submitted as required by Resolution 30H-2003 (*Trans.*2003:334),
 7 which urged the Board to provide an annual report summarizing technology initiatives, expenditures,
 8 estimated costs, anticipated projects and their sources of funding. This report is informational only; there
 9 are no resolutions.

10 **Projects and Expenditures:** As of this report, the following projects are completed and others are
 11 currently in the working stages with a completion goal by the end of the year.

- 12 • *Document Management (ADA Knowledge Center).* In 2014, the ADA began an effort to replace
 13 its antiquated document management system with a Microsoft (MS) SharePoint solution. This
 14 project was completed in March 2015, with all ADA divisions along with ADABEI and ADAF
 15 converted to the new solution, which was branded ADA Knowledge Center. In 2016 and 2017,
 16 work continues on assisting ADA divisions with identifying and implementing solutions using ADA
 17 Knowledge Center to meet their business needs.
- 18 • *Data Warehouse.* In 2015, Information Builders, a new front-end software tool was implemented
 19 and Business Objects, the existing back-end software tool was upgraded to the latest version.
 20 These new and upgraded product sets provide advanced analytics capabilities to ADA staff to
 21 analyze market trends and make more proactive decisions. Any requests in 2016 and 2017 for
 22 new data marts or enhancements to existing data marts will be completed using existing IT staff.
- 23 • *Websites.* In 2015, a project began to implement a new search software called Coveo to improve
 24 search functionality for all ADA websites and also integrates with Sitecore, the website content
 25 management software. This new tool implementation along with a Sitecore software upgrade
 26 were completed in 2016. A project is currently underway to move the MouthHealthy.org and
 27 MouthHealthy for Kids.org websites to a responsive web design so that visitors can easily view
 28 these websites from any device, whether it be a phone, tablet or a full-sized computer. This
 29 redesign also helps future-proof the sites and brings them up to the same code base as all other
 30 ADA websites. A new Dental Practice map will be featured on ADA.org in 2016. This new
 31 interactive map will allow dentists to explore dental practice locations across the United States
 32 using state demographic data to help dentists to decide where to practice. In 2017, a major
 33 website redesign is planned, which will include personalization development and usage; new and

enhanced mapping; single sign-on implementation and an installation of a social media platform to be piloted by the ADA as well as states and local societies using Aptify.

As part of the Power of 3 initiative, the ADA developed branded website templates to deploy to the states and local societies who were also converting from the Tripartite System (TS) to Aptify. The branded templates offer the states and locals a similar "look and feel" web presence, which gives visitors a similar web experience at the local, state and national level. 32 states and locals were rolled out in 2015 with another 52 states and locals scheduled in 2016. Website template enhancements that were identified by state and local societies will be implemented in 2016, which includes Aptify integration. This integration will allow member data entered into a web form to be captured into Aptify. In 2017, ongoing support, minor upgrades and enhancements are planned.

- *Center for Professional Success (CPS)*. In 2016, the CPS website will be moved to a responsive web design for optimal viewing across devices. In addition, a benchmarking/survey tool will be implemented that will allow members to assess their practice's key performance indicators with other dentists. In 2017, website support will continue and any enhancements will be done by staff.
- *Mobility*. The Oral Pathologist and Chairside mobile apps were updated in 2015 to provide new, revised and updated content. The CDT mobile app was updated in 2015 and 2016 to include current codes and update the operating system platform. The Aptify State Branded Mobile for Member app was released in 2015 and updated in 2016. It is currently in a pilot phase with the ADA and Washington State. This new free member benefit allows ADA members to access their information stored in Aptify from their smart phones and/or tablets and includes such functionality as updating their profile; accessing newsfeeds; connecting with members; and managing meeting and CE information. In 2016, the app will be updated to include new features and functionality such as photo uploads, integration to Facebook and alert management for posting and retrieving information. In 2017, existing mobile apps will be updated as needed.
- *ADA Connect*. System support and updates for the MS SharePoint environment, which is the platform for ADA Connect continued in 2015. A MS SharePoint 2013 upgrade is scheduled to begin in 2016 and be completed in 2017. This upgrade will use a design to build a new ADA Connect that improves the look and feel of the user experience and enhances the interaction with documents. The upgrade will integrate ADA Connect and ADA Knowledge Center to ensure each maintains a secure environment while allowing the proper level of collaboration as appropriate.
- *Finance/HR/Payroll*. In 2015, projects were completed to convert the PeopleSoft financial integrations to the ADA's new bank, JP Morgan Chase and to integrate the ADA's new direct reimbursement program, SIMPLE with PeopleSoft. A vendor was selected to work with ADA staff to select a replacement for Oracle PeopleSoft Financials and HR/Payroll systems and Oracle Hyperion for budget management. NetSuite ERP was chosen as the new financial system; UltiPro as the new HR/Payroll system and NetSuite Adaptive Planning as the new budget management system. System implementations are underway. HR/Payroll is scheduled to go-live in Q4 2016, with Finance and Budget to go live in early 2017. In addition to these systems, a third-party system was purchased to support grant management and budgetary control for the ADA Foundation. This system is also scheduled to go-live in early 2017.
- *Hyperion Budgeting*. In 2015, an upgrade was completed to bring the system to the latest version and to stay in compliance with our software licensing and maintenance agreement. In 2016, minor system updates were completed to prepare the system for the 2017 budget process. Data migration work will occur later this year as part of the new budget system implementation scheduled for early 2017.

- 1 • *Tripartite System.* The Tripartite System (TS) is scheduled to be shut down in April 2017. At this
2 time, all current TS users will have been converted to Aptify and the 2016 dues billing process will
3 have been completed.
- 4 • *Infrastructure, Hardware and Software Licenses.* The expenditures reflected in 2015, 2016 and
5 2017 are primarily for hardware and software licenses to maintain the Association's network
6 infrastructure as well as provide end-user equipment such as desktops, laptops and printers. In
7 addition, funding is budgeted annually for a manufacturer-certified on-site technician. This
8 technician is available on-site to fix hardware under warranty instead of depending on "depot
9 warranty service." This on-site service minimizes downtime for users. In 2015, upgrades were
10 completed to the Boardroom's audio-visual equipment as well as the voting and microphone
11 queuing systems. Additional 22nd Floor AV upgrades were completed in the Executive
12 Conference Room, Video Conference Room, Board Reception Room and the Executive Dining
13 Room. A network upgrade was also completed for the Washington DC office. Audio-visual
14 upgrades are scheduled for the Lobby and 2nd Floor in 2016 and the Washington DC office in
15 2017. PCI compliance and network security will continue to be monitored with security
16 improvements implemented as needed in 2016 and 2017.
- 17 • *Aptify.* Aptify rollouts to the states continued in 2015 and 2016. As of this report, 47 states,
18 Washington DC and Puerto Rico are on Aptify. In addition to the 2015 deployments, the Aptify
19 Grants Management module was configured and deployed to the ADA Foundation as well as
20 several system enhancements were implemented including ACH payments; TS Photo Load
21 application conversion; online Signing Day application and security enhancements. Aptify also
22 provided additional support to recently converted states and local societies to help them get more
23 comfortable with the new system and to assist with billing dues for the first time using Aptify. This
24 support will be handled by ADA IT staff once the Aptify deployments are completed. In addition
25 to the remaining Aptify deployments, several Aptify projects are scheduled to be completed in
26 2016. An eCatalog solution for the states and local societies will be implemented to sell products
27 and services and to solicit donations using the existing product setup functionality within Aptify.
28 This initiative allows states and local societies to collect online voluntary dues (PAC, Foundation,
29 etc.) and to sell products to generate non-dues revenue. A broadcast email solution for the states
30 and local societies will be implemented to allow them to create and send bulk email messages
31 and to easily create and send newsletters. The existing CODA Accreditation database, CODA
32 Consulting Training website and the CERP Online Provider Application are scheduled to be
33 replaced with an Aptify solution. The 2017 Aptify projects include ADA eCatalog enhancements;
34 additional upgrades to the Meetings module and a Lockbox import process for the Accounts
35 Receivable (AR) module.
- 36 • *Aptify/Learning Management System (LMS).* A new Continuing Education (CE) module was
37 deployed to the states converting to Aptify in 2015 and will be deployed to the remaining states
38 converting in 2016. In 2016, an LMS is being developed that integrates with the Education
39 module and eCommerce functionality to manage CE activities. Phase II of this project, which will
40 include more functionality and enhancements is scheduled for completion in 2017.
- 41 • *Aptify/Testing Services (DTS).* In 2015, system enhancements and fixes were implemented
42 using existing IT staff. In 2016, several system features and functionality improvements are
43 planned so that DTS staff can process transactions more efficiently resulting in better user
44 experience for dentists and students. In 2017, accounting processes will be updated to get
45 accounting data from Aptify into the new finance system, which will eliminate manual work for
46 DTS staff.

47 The table below outlines actual expenditures in the core areas in 2015; projected spending in 2016 and
48 planned spending in 2017. Also disclosed is spending related to infrastructure hardware and major
49 projects.
50

1

	2015	2016	2017
IT Core Area	Actual Spending	Projected Spending	Planned Spending
ADA Knowledge Center	193,664	12,500	12,500
Data Warehouse	108,664	0	0
Websites (National)	166,775	145,100	736,252
New Website Search Tool Implementation (Contingency Fund)	52,100	0	0
Websites (States & Locals)	585,841	495,771	120,000
Ctr. for Professional Success (CPS)	0	56,250	7,500
Mobile Applications	107,374	50,880	10,000
ADA Connect	4,185	262,500	12,500
Finance/HR/Payroll	208,177	342,672	0
Hyperion Budgeting System	61,280	63,000	0
Hyperion Budgeting System (Contingency Fund)	0	27,000	0
Tripartite System	0	0	0
Infrastructure, Hardware & Software Licenses	1,118,502	1,133,673	1,154,000
Aptify (National)	828,758	546,866	337,500
Aptify (States & Locals)	68,379	288,300	107,500
Total Project Spending	3,503,699	3,424,512	2,497,752
Balance of IT Operating Budget	10,337,301	9,434,488	11,068,248
Total IT Spending	13,841,000	12,879,000	13,566,000

2

3 The tables below summarize the previous information based on the source of funding. The IT division
4 continues to maintain and upgrade its current core areas while also providing ongoing support and
5 completing various IT-related projects for ADA divisions.

	Operating Budget	Capital Budget	Contingency Fund	Total
2015 Actual Spending				
ADA Knowledge Center (1)	92,892	100,772	0	193,664
Data Warehouse (2)	44,941	63,723	0	108,664
Websites National (3)	0	166,775	52,100	218,875
Websites States & Locals (3)	215,742	370,099		585,841
Ctr. for Professional Success (4)	0	0	0	0
Mobile Applications (5)	40,915	66,459	0	107,374
ADA Connect (6)	4,185	0	0	4,185
Finance/HR/Payroll (7)	115,000	93,177	0	208,177
Hyperion Budgeting System (8)	28,440	32,840	0	61,280
Tripartite System	0	0	0	0
Infrastructure, Hardware & Software Licenses (9)	128,454	990,048	0	1,118,502
Aptify National (10)	743,110	85,648	0	828,758
Aptify States & Locals (10)	68,379	0	0	68,379
Total Project Spending	1,482,058	1,969,541	52,100	3,503,699
Balance of IT Operating Budget	10,337,301	0	0	10,337,301
Total IT Spending	\$11,819,359	\$1,969,541	\$52,100	\$13,841,000

6

2015 Consulting Projects	Operating Budget	Capital Budget	Total Actual Spending
ADA Knowledge Center Implementation	88,707	100,772	189,479
ADA Knowledge Center support	4,185	0	4,185
ADA Knowledge Center Totals (1)	92,892	100,772	193,664
New Front-End Reporting Software	32,000	16,200	48,200
Back-End Reporting Software Upgrade	12,941	47,523	60,464
Data Warehouse (DW) Totals (2)	44,941	63,723	108,664
SiteCore Content Management Software Upgrade	0	84,000	84,000
Coveo Search Software Implementation	0	75,275	75,275
MouthHealthy Homepage Redesign	0	7,500	7,500
Sitefinity Content Management Software Licenses for Branded Website Templates	0	98,099	98,099
Branded Website Templates Design, Development & Support for States & Locals	215,742	272,000	487,742
Websites (National & States/Locals) Totals (3)	215,742	536,874	752,616
CPS Totals (4)	0	0	0
Chairside Updates	19,950	0	19,950
Oral Pathologist Updates	3,300	0	3,300
CDT Code Check Updates	1,050	0	1,050
ADA Member Mobile Portal	16,615	66,459	83,074
Mobile Application Totals (5)	40,915	66,459	107,374
MS SharePoint support	4,185	0	4,185
ADA Connect Totals (6)	4,185	0	4,185
PeopleSoft Integration to New Bank	0	77,736	77,736
PeopleSoft Integration to SIMPLE DR	0	15,441	15,441
New Finance/HR/Payroll System Selection	115,000	0	115,000
Finance/HR/Payroll Totals (7)	115,000	93,177	208,177
Hyperion Budget System Upgrade	28,440	32,840	61,280
Hyperion Totals (8)	28,440	32,840	61,280
Tripartite System (TS) Totals	0	0	0
Warranty Technician	69,692	0	69,692
DC Network Upgrade	7,200	0	7,200
PCI Compliance/Network Security	4,925	0	4,925
Operating Software	46,637	0	46,637
Capital Hardware	0	369,868	369,868
Capital Software	0	0	0
Network Infrastructure	0	178,689	178,689
AV Upgrades – 22 nd Floor	0	441,491	441,491
Infrastructure Totals (9)	128,454	990,048	1,118,502

Aptify Support (National)	701,380	0	701,380
Aptify System Enhancements (National)	16,730	48,344	65,074
Aptify Grants Module for ADAF	25,000	37,304	62,304
Aptify Support (States & Locals)	68,379	0	68,379
Aptify Totals (10)	811,489	85,648	897,137
2015 Grand Totals	1,482,058	1,969,541	3,451,599

1

IT Core Area

2016 Projected Spending	Operating Budget	Capital Budget	Contingency Fund	Total
ADA Knowledge Center (1)	12,500	0	0	12,500
Data Warehouse (2)	0	0	0	0
Websites National (3)	38,500	106,600	0	145,100
Websites States & Locals (3)	230,389	215,382	50,000	495,771
Ctr. for Professional Success (4)	20,000	36,250	0	56,250
Mobile Applications (5)	10,880	40,000	0	50,880
ADA Connect (6)	37,500	225,000	0	262,500
Finance/HR/Payroll (7)	90,831	251,841	0	342,672
Tripartite System	0	0	0	0
Hyperion Budget System(8)	63,000	0	27,000	90,000
Infrastructure, Hardware & Software Licenses (9)	140,000	993,673	0	1,133,673
Aptify National (10)	124,500	442,366	0	566,866
Aptify States & Locals (10)	140,000	148,300		288,300
Total Project Spending	908,100	2,459,412	77,000	3,444,512
Balance of IT Operating Budget	9,434,488	0	0	9,434,488
Total IT Spending	\$10,342,588	\$2,459,412	\$77,000	\$12,879,000

2

2016 Consulting Projects	Operating Budget	Capital Budget	Total Projected Spending
ADA Knowledge Center support	12,500	0	12,500
ADA Knowledge Center Totals (1)	12,500	0	12,500
Data Warehouse (DW) Totals (2)	0	0	0
SiteCore Content Management support	2,100	0	2,100
MouthHealthy & MouthHealthy Kids Responsive Design	19,500	37,500	57,000
Dental Practice Map Implementation	0	28,000	28,000
Coveo Search Tool Implementation	16,900	41,100	58,000
Sitefinity Content Management Software Licenses for Branded Website Templates	0	98,324	98,324
Branded Website Templates Enhancements & Support for States & Locals	230,389	117,058	347,447
Websites Totals (3)	268,889	321,982	590,871
CPS Responsive Design	20,000	36,250	56,250
CPS Totals (4)	20,000	36,250	56,250

CDT Mobile App Updates	10,880	0	10,880
Member Mobile Portal	0	40,000	40,000
Mobile Application Totals (5)	10,880	40,000	50,880
MS SharePoint support	12,500	0	12,500
MS SharePoint 2013 upgrade	25,000	225,000	250,000
ADA Connect Totals (6)	37,500	225,000	262,500
NetSuite ERP Implementation	56,231	151,469	207,700
NetSuite Adaptive Planning/Budget Implementation	13,900	33,950	47,850
UltiPro HR Implementation	10,700	66,422	77,122
ADAF Grants & Budget Implementation	10,000	0	10,000
Finance/HR/Payroll Totals (7)	90,831	251,841	342,672
Tripartite System (TS) Totals	0	0	0
Hyperion Budget System Support	63,000	0	63,000
Hyperion Totals (8)	63,000	0	63,000
Warranty Technician	75,000	0	75,000
Network Security	15,000	0	15,000
Operating Software	50,000	0	50,000
Capital Hardware	0	500,000	500,000
Capital Software	0	48,673	48,673
Network Infrastructure	0	345,000	345,000
AV Upgrades – Lobby & 2 nd Floor	0	50,000	50,000
Chicago Telephone System Upgrades	0	50,000	50,000
Infrastructure Totals (9)	140,000	993,673	1,133,673
Aptify Support (National)	62,000	0	62,000
Aptify 554 Upgrade (National)	33,000	99,000	132,000
Aptify for CODA/CERP (National)	29,500	245,500	275,000
Aptify LMS (National)	0	22,866	22,866
Aptify eCatalog Updates (National)	0	35,000	35,000
Aptify DTS Updates (National)	0	40,000	40,000
Aptify Support (States & Locals)	140,000	0	140,000
Aptify eCatalog (States & Locals)	0	70,520	70,520
Broadcast Email (States & Locals)	0	77,780	77,780
Aptify Totals (10)	264,500	590,666	855,166
2016 Grand Totals	908,100	2,459,412	3,367,512

1

IT Core Area

2017 Planned Spending	Operating Budget	Capital Budget	Total
ADA Knowledge Center (1)	12,500	0	12,500
Data Warehouse (2)	0	0	0
Websites National (3)	182,252	554,000	736,252
Websites States & Locals (3)	120,000	0	120,000
Ctr. for Professional Success (4)	7,500	0	7,500
Mobile Applications (5)	10,000	0	10,000
ADA Connect (6)	12,500	0	12,500
Finance/HR/Payroll (7)	0	0	0
Tripartite System	0	0	0
Hyperion Budgeting (8)	0	0	0
Infrastructure, Hardware & Software Licenses (9)	118,000	1,036,000	1,154,000
Aptify National (10)	140,625	196,875	337,500
Aptify States & Locals (10)	83,125	24,375	107,500
Total Project Spending	686,502	1,811,250	2,497,752
Balance of IT Operating Budget	11,068,248	0	11,068,248
Total IT Spending	<u>\$11,745,750</u>	<u>\$1,811,250</u>	<u>\$13,566,000</u>

2

2017 Planned Consulting Projects	Operating Budget	Capital Budget	Total Planned Spending
ADA Knowledge Center Support	12,500	0	12,500
ADA Knowledge Center Totals (1)	12,500	0	12,500
Data Warehouse Totals (2)	0	0	0
SiteCore Content Management support	10,000	0	10,000
ADA.org Redesign/Personalization	172,252	554,000	726,252
Branded Website Template Support for States & Locals	120,000	0	120,000
Website Totals (3)	302,252	554,000	856,252
Survey/Benchmarking Tool Hosting and Support	7,500	0	7,500
CPS Totals (4)	7,500	0	7,500
Ongoing Mobile Application support	10,000	0	10,000
Mobile Application Totals (5)	10,000	0	10,000
MS SharePoint support	12,500	0	12,500
ADA Connect Totals (6)	12,500	0	12,500
Finance/HR/Payroll	0	0	0
PeopleSoft Totals (7)	0	0	0
Tripartite System (TS) Totals	0	0	0
Hyperion Budget System Support	0	0	0
Hyperion Budget Totals (8)	0	0	0

Warranty Technician	75,000	0	75,000
Network Security	15,000	0	15,000
Operating Software	28,000	0	50,000
Capital Hardware	0	511,000	511,000
Capital Software	0	10,000	10,000
Network Infrastructure	0	345,000	345,000
AV Upgrades – DC Office		120,000	120,000
Chicago Telephone System Upgrades	0	50,000	50,000
Infrastructure Totals (9)	118,000	1,036,000	1,154,000
Aptify Support (National)	75,000	0	75,000
Aptify AR Lockbox Process (National)	15,000	45,000	60,000
Aptify DTS Accounting Updates (National)	15,000	45,000	60,000
Aptify CE Updates (National)	16,875	50,625	67,500
Aptify CE Updates (States & Locals)	1,875	5,625	7,500
Aptify Meetings Phase 2 (National)	18,750	56,250	75,000
Aptify Meeting Phase 2 (States & Locals)	6,250	18,750	25,000
Aptify Support (States & Locals)	75,000	0	75,000
Aptify Totals (10)	223,750	221,250	445,000
2017 Grand Totals	686,502	1,811,250	2,497,752

Resolutions

This report is informational and no resolutions are presented.

BOARD RECOMMENDATION: Vote Yes to Transmit.

BOARD VOTE: UNANIMOUS. (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO BOARD DISCUSSION)

Resolution No. None NewReport: Board Report 9 Date Submitted: September 2016Submitted By: Board of TrusteesReference Committee: A (Budget, Business and Administrative Matters)Total Net Financial Implication: None Net Dues Impact: Amount One-time Amount On-going FTE 0

ADA Strategic Plan Objective: Membership-Obj. 1: Leaders and Advocates in Oral Health

How does this resolution increase member value: See Background

REPORT 9 OF THE BOARD OF TRUSTEES TO THE HOUSE OF DELEGATES: ADA PENSION PLANS**Background:** This report is in response to House of Delegates Resolution 77H-2011 (*Trans.*2011:444).

Resolution 77H-2011 reads as follows:

77H-2011. Resolved, that the Board of Trustees provide to the House of Delegates an annual executive summary on the status of the Pension Plan as reflected in the annual ADA audit reports and the annual actuarial certification of the pension plan funding status.

The ADA reviewed its employee benefits as part of a larger project to assess total compensation in 2011 and made significant changes to retiree benefits effective January 1, 2012 that reduced both future costs and risks while still providing a market competitive total compensation package.

To summarize, that decision was based on the following facts which still apply to the plan:

- The new terms of the pension plan reduce future costs and risks by more than 60% compared to the old plan terms.
- Supplemental pension funding is not optional and represents payment of prior service costs under the old pension plan. This funding is the majority of the ADA's annual budget cost and is required even if the plan is terminated.
- If the pension plan were terminated completely, the ADA would not have access to plan assets to reduce costs in future periods.
- A "hard freeze" plan termination would come at a high price because conservative accounting rules lock in the value of the liability based on an assumed liquidation of pension benefits as of the termination date using current, historic low interest rates. This liability can only be reduced by the future payment of those plan's liabilities.
- The long term economic costs of the plan are ultimately tied to the payout of future benefits over many years, in fact, decades into the future. ADA contributions that go into the plan do not come out except to pay plan benefits. Because pension benefits, since 1993, are only paid as a monthly annuity to retirees, cash flows are predictable and plan assets are invested to balance long term returns, risks, and costs in relation to the maturity of the long term pension liabilities.

Resolution 77H-2011 asks for reporting on the ADA Pension Plan using two sources of information that provide two perspectives of plan status based on two different actuarial calculations of the future pension benefit liability:

- a. the accrual basis liability included in the ADA's 12/31/15 balance sheet (based on ASC 715 accounting rules), and
- b. the "cash basis" liability, percent funded status and funding requirements included in the ADA's 1/1/16 Adjusted Funding Target Attainment Percentage ["AFTAP"] Range Certification Report (based on ERISA calculation rules).

Although these two liability calculation methods differ, in general terms the net Pension liability represents the amount of projected total pension funds needed to cover "100% funding" of future benefits less the value of actual funds invested in pension plan assets. In each case, this "100% funded" liability is an amount calculated by our actuary based on a formula that uses certain assumptions including interest rates and mortality tables determined by either government or accounting rules. When interest rates go down or longevity estimates increase, the amount needed to reach 100% funded status goes up.

The pension liability, under both methods, accrual basis and cash basis, is recalculated by our actuary as of the end of every plan year, December 31.

Accrual Basis Pension Liability (included in the ADA's 12/31/15 audited balance sheet): The following roll-forward analysis of the ADA's 12/31/15 balance sheet liability shows all the changes in the net accrual basis liability since the beginning of the year compared to prior periods.

There are four major types of changes that affect the ADA's net pension liability:

1. The ADA's contribution of cash to the plan assets which reduces the liability includes two parts:
 - a. The funding of "normal service" costs for current employees of the ADA who earn benefits during the plan year; and
 - b. The funding of supplemental payments to help get the plan to 100% funded status which represent "catch up" funding of benefits earned in prior periods as defined by government funding rules initially introduced by the Pension Protection Act ("PPA") of 2006; and
2. The increase in the net plan liability due to the accrual of the "normal service" benefit costs plus interest on the pension liability; and
3. The decrease in the net pension liability due to the increase in the value of the plans investment assets; and
4. The impact of an increase or decrease in the net pension liability due to the decrease or increase in the "spot rate" of interest used to calculate the actuarial present value of those future retirement benefits at December 31 each year.

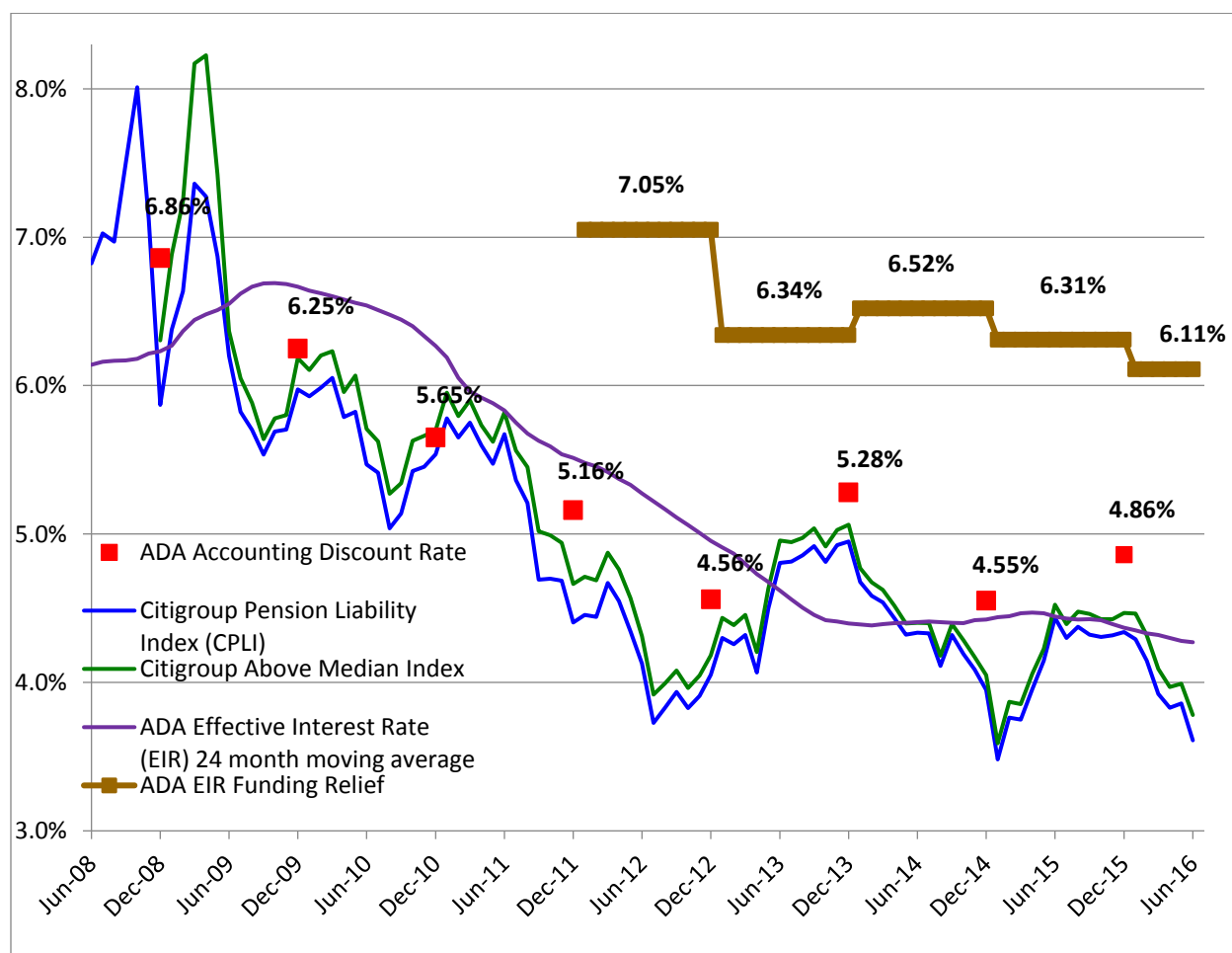
In addition to these changes to the pension liability, the ADA also made the "one time" change to future employee benefits effective January 1, 2012 that significantly reduced the ADA's accrual basis pension liability as well as its ongoing pension expense. This one time change reduced the liability by \$8.9 million at 12/31/2011 and reduces "normal service costs" annually in 2012 and future years by over \$3 million compared to 2011.

Finally, studies of mortality experience for participants in pension plans have been published by the Society of Actuaries in recent years. These studies have indicated that pension plan participants are

The following historical roll-forward analysis chart shows a five year history of the pension plan. The results for fiscal year 2011 shows normal service costs under the old plan while years 2012 through 2015 present the actual results after plan changes. Beyond normal service costs and interest on the pension liability (i.e., Expected Obligation Increase), the biggest change to the accrual basis Net Pension Liability is the non-cash impact of the discount rate on the year-end valuation. For year-end 2012, discount rates dropped from 5.16% to 4.56%, which was offset by favorable investment performance. For year-end 2013, discount rates increased from 4.56% to 5.28% and the Plan experienced favorable investment performance. For year-end 2014, the liability increased due to a decrease in discount rates from 5.28% to 4.55%, updated mortality assumptions, and a one-time adjustment to reflect the impact of a change in IRS regulations. These increases were partially offset by favorable investment performance. For year-end 2015, the liability decreased due to an increase in discount rates from 4.55% to 4.86%, but was offset by unfavorable investment performance and updated mortality assumptions. So far in 2016, interest rates have been decreasing while asset performance has improved. The impact of increasing “spot” interest rates has a big impact on the year-end valuations of future benefit liabilities but these are non-cash adjustments. For further reference, the rates used for accounting purposes, and approved by our auditors, are shown at the bottom of the chart for each year.

ADA Consolidated						
Net Pension Liability Analysis - Historical						
Millions of Dollars; Increase/(Decrease) in Liability						
	Fiscal Year Ending					
	2011	2012	2013	2014	2015	Notes
Beginning Balance, December 31 of prior year	48.8	51.1	56.8	29.0	50.4	Net Liability, based on discount rate in effect at start of year less plan assets
Contributions (Cash):						Actual cash cost to ADA in each plan year:
<i>Normal Service Cost Funding- current employees</i>	(5.2)	(1.7)	(1.8)	(2.0)	(2.1)	Based on Old Plan formula in 2011; New Plan formula for 2012 to 2015
<i>Supplemental/Catch-up Funding of Prior Service</i>	(7.6)	(4.6)	(4.4)	(5.1)	(3.0)	Required contributions of prior service costs on path to 100% status
Expected Obligation Increase	13.4	10.0	10.0	10.5	11.1	Service Cost (benefit accrual) and Interest Cost (interest on prior obligation)
Net Investment (Gains)/Losses	(2.0)	(16.7)	(15.5)	(13.0)	3.1	Actual plan investment results based on market values at each year end
Actuarial (Gain)/Loss	2.1	4.5	0.4	0.6	1.5	Impact of updated participant population, salaries and mortality assumptions
Reduction in Benefits	(8.9)	-	-	-	-	2011 reflects impact of change in Plan formula
Annual FAS 158 Actuarial Valuation Adjustment						
Discount Rate	10.0	14.1	(16.4)	18.2	(7.9)	Estimated non-cash impact of changing discount rate per accounting rules
Mortality Assumption	N/A	N/A	N/A	9.0	1.1	Estimated non-cash impact of updating mortality assumption per actuarial studies
Impact due to adjustment for application of IRS Regs	-	-	-	3.1	-	
Supplemental Benefit Trust	0.5	0.1	(0.1)	0.1	(0.1)	Net Change in supplemental plan liability as reported
Ending Balance, December 31	51.1	56.8	29.0	50.4	54.1	Net Liability, based on discount rate in effect at end of year less plan assets
Discount Rate						
Beginning of Year	5.65%	5.16%	4.56%	5.28%	4.55%	
End of Year	5.16%	4.56%	5.28%	4.55%	4.86%	

Low interest rates, more than any other factor, result in increases to the year-end valuations of Retirement Benefit Obligations. The next graph shows the general downward trend of the rates used to calculate these long term liabilities. Rates increased during 2015 but have been decreasing in 2016.



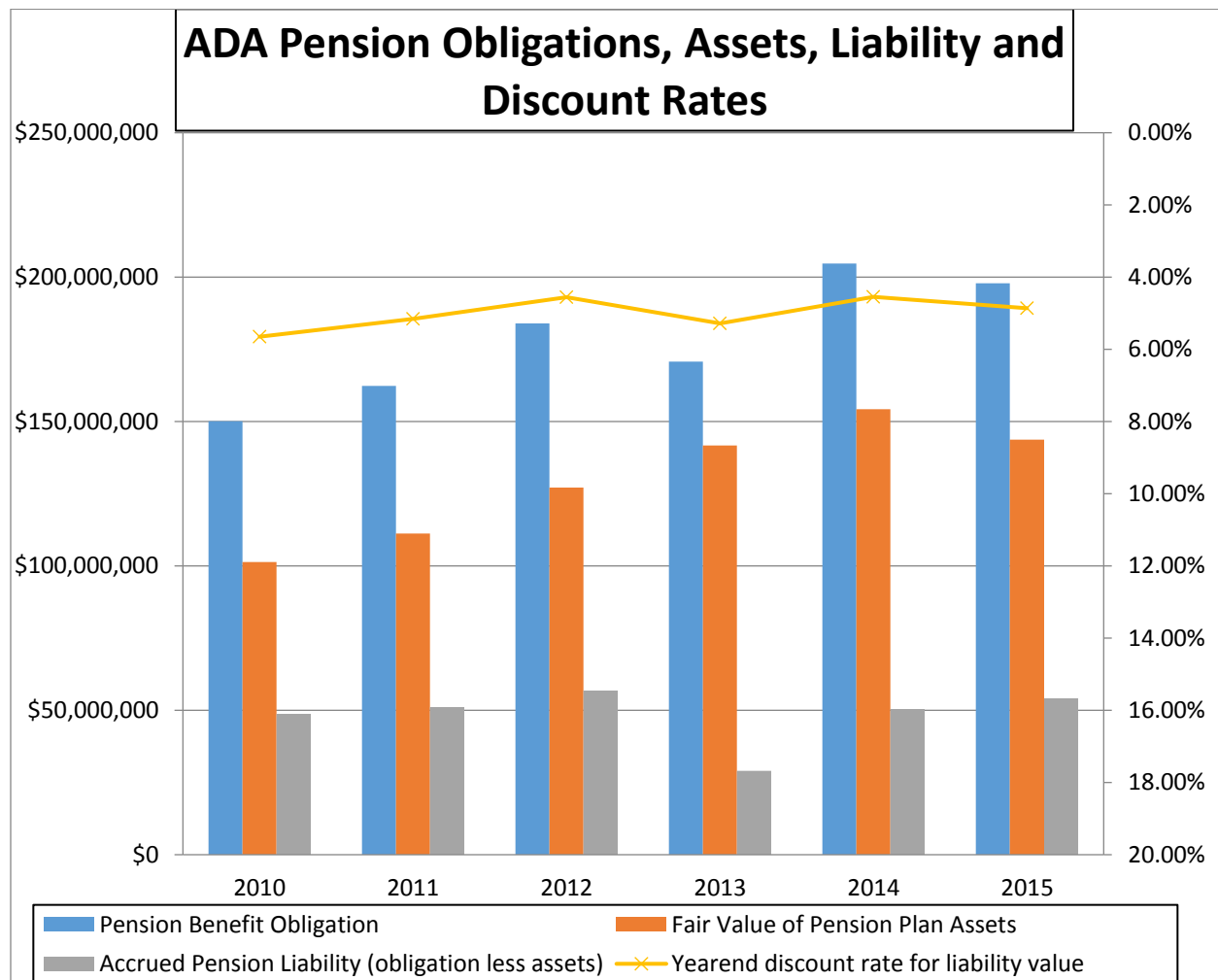
1

2 The “ADA Accounting Discount Rate” shown in this graph reflects the rates used for the year-end
 3 financial statements. The “ADA Effective Interest Rate (EIR)” is a 24 month moving average of rates
 4 published by the IRS which would typically apply to funding requirements. However, the “MAP-21 Rates”,
 5 further modified by “HATFA”, reflect higher rates based on a 25 year average to provide pension relief
 6 which reduced the Plan’s funding requirements for 2012, 2013, 2014, 2015 and 2016.

7 The Citigroup Indexes are also included as an indicator of current interest rate trends. These rates were
 8 trending upward in 2015 resulting in a lower accounting rate at 12/31/15 than at 12/31/14. However, so
 9 far during 2016, these rates have been decreasing again.

10 The inverse relationship between interest rates and the valuation of the year-end pension liability can also
 11 be seen in the following multi-year graph that includes:

- 12 a) the gross pension obligation,
- 13 b) the pension plan asset balance,
- 14 c) the net ADA pension liability balance, and
- 15 d) the year-end discount rate used to value the pension liability.



The line graph of the year-end discount rate is shown at the top of the chart with a separate vertical axis on the right side with “zero” at the top of the chart and higher rates extending downward. In this format, the chart shows the correlation between the changes in the discount rate and the liability balance. It should also be noted that this graph also shows the benefits of a consistent funding policy and investment results through the steady increase in plan assets.

Each year, the ADA’s investment advisors review the pension benefit obligation in relation to the pension plan asset strategy to update investments. As part of this review, these advisors estimate the non-cash impact of interest rates on the “net” accrued pension liability. The latest estimates indicate that a 1% change in the year-end spot rates will result in an impact of \$26.9M on the liability with an offsetting impact on the plan assets estimated at \$8.0M which combine to a total “net impact” of \$18.9M. Because U.S. interest rates have remained at historical low values based on a Fed funds rate just above zero between 0.25%-0.50%, this means that there is considerable potential for favorable valuation adjustments if and when interest rates rise in the future.

It is important to note that although the use of year end “spot rates” determines the value of the liabilities for accounting purposes at year end, and while lower rates can also drive higher contribution rates to plan assets, it is the actual cash payout of the retirement benefits that will only happen over many decades that represents the true economic cost of the plan. Cash contributed to the plan to fund future benefits stays in the plan until those benefits are paid. And the actual payout of the 12/31/15 pension plan liability through monthly benefits to retirees will only happen over the next 30 to 40 years with the final payments

1 expected into the next century. The following graph shows these expected annual payments to plan
2 participants from plan assets:



3
4
5 This graph effectively shows that the maturity of the ADA's pension liability is made up of predictable
6 annuities unlike many other plans that allow lump sum benefit payouts.

7 **Pension Relief:** Because so many actuaries for large pension plans questioned the use of "spot rates" to
8 value pension liabilities and lobbied legislators to use a longer 25 year average interest rate to calculate
9 the requirements for cash contributions to pension plans, "pension relief" was passed under MAP-21 in
10 2012 to reduce the short-term funding burden on pension plan sponsors caused by the current, low
11 interest rate environment. This "pension relief" was further modified and extended by HATFA in 2014 and
12 the Bipartisan Budget Act (BBA) of 2015.

13 **Cash Basis Pension Liability (included in the annual actuarial certification of the pension plan**
14 **funding status):** The other pension liability recalculated by our actuary each year is the Cash Basis
15 Pension Liability which is published in the ADA's annual Adjusted Funding Target Attainment Percentage
16 ["AFTAP"] Certification Report (based on ERISA calculation rules). This report is significant because it
17 includes the annual funded status of the plan. In addition, as this "cash basis" liability fluctuates, the
18 amount of annual cash contributions required from the next year's Operating Budget will also fluctuate.

19 The following chart shows the Cash Basis Pension Liability based on the AFTAP certification report:

American Dental Association									
Employees' Retirement Trust									
Adjusted Funding Target Attainment Percentage ("AFTAP") Funding Status									
as of January 1, 2016 (valuation date)									
(\$000s)	Year End 2012		Year End 2013		Year End 2014 ¹		Year End 2015		
	amount	%	amount	%	amount	%	amount	%	
AFTAP Net Effective Interest Rate	6.35%		6.52%		6.31%		6.11%		
Cash Basis Target Liability (= 100% status)	\$ 146,710	100.0%	\$ 147,812	100.0%	\$ 156,344	100.0%	\$ 163,231	100.0%	
Less: Plan Assets	(127,125)	86.7%	(148,591)	100.5%	(159,182)	101.8%	(143,349)	87.8%	
Net AFTAP Report Unfunded Plan Liability	\$ 19,585	13.3%	\$ (779)	-0.5%	\$ (2,838)	-1.8%	\$ 19,882	12.2%	
¹ Revised from prior report to reflect final 2015 actuarial valuation basis.									

The data in this chart also shows, in a simple format, how the year end valuation of investments also contributes to the funded status of the plan.

Conclusions: Although the use of “spot” rates of interest, in effect at the end of each year, determine the GAAP accounting basis of the liabilities and, although the annual cash basis valuation can drive higher contributions to the plan’s assets, the final cost of the plan is ultimately tied to the payment of these benefits to plan participants.

Because the ADA stopped lump sum payments for benefits earned after 1993, the pension plan operates as a simple annuity plan which greatly reduces transactions other than normal portfolio management and the payment of monthly benefits to participants. This results in very predictable cash flows.

Once the ADA contributes cash into the plan, it stays in plan investments to generate long term returns until benefits are paid out. Under this plan structure, the ADA’s actuaries and investment advisors have explained that temporary investment valuation and interest rate volatility have minimal impact on the long term economics of the pension plan.

Board changes to retirement benefit plans helped reduce total pension liabilities by over \$7 million at 12/31/11 (all plan changes actually account for \$21.8 million of direct reduction which was partially offset by the impact of interest and investment).

In addition, the significant cut in pension plan benefits reduced “normal” pension costs, for 1 year of service, from \$5.2 million in 2011 to \$1.7 million in 2012 to \$1.8 million in 2013 to \$2.0 in 2014 and to \$2.1 in 2015.

Although the historic low “point in time” interest rates at year end (in conjunction with mortality improvements) have resulted in higher pension liability valuations, expected long term higher interest rates will turn this liability into an asset in the future. Pension relief intended to reduce the funding burdens on pension plan sponsors caused by the current, low interest rate environment was signed into law in 2012 as part of the MAP-21 Act and further modified by both HATFA in 2014 and BBA in 2015. While these laws will provide some relief from the low interest rate environment, prolonged decreasing rates and investment performance in 2015 and 2016 could result in higher contribution requirements in future years.

Over the long term, the plan will provide the ADA with a valuable benefit to attract and retain employees critical to its mission based on an asset that will eventually pay for itself once 100% funded status is reached.

1 Without any continuing pension plan in place, there would be a long term risk of an overfunded pension
2 plan, with the ADA being unable to utilize any portion of the resulting overfunded asset balance.

3 With a continuing pension plan, any overfunding that may occur due to fluctuating interest rates can be
4 used to help minimize annual plan contributions going forward.

5 On a related topic, the Board's action in 2011 to reduce retiree health benefits resulted in an immediate
6 \$10 million improvement in the ADA's financial position at December 31, 2011. That reduction also
7 eliminated the ADA's exposure to escalating health care costs by capping the future maximum annual
8 cost per retiree.

9 **Resolutions**

10 This report is informational and no resolutions are presented.

11 **BOARD RECOMMENDATION: Vote Yes to Transmit.**

BOARD VOTE: UNANIMOUS. (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO BOARD DISCUSSION)

Resolution No. 93 NewReport: N/A Date Submitted: October 2016Submitted By: Second Trustee DistrictReference Committee: A (Budget, Business and Administrative Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Organizational Capacity-Obj. 6: Role and responsibility of each element of the tripartite clearly defined and agreed upon

How does this resolution increase member value: See Background

1 BUSINESS OF THE HOUSE OF DELEGATES

2 The following resolution was adopted by the Second Trustee District and transmitted on October 20,
3 2016, by Dr. Mark J. Feldman, executive director, New York State Dental Association.

4 **Background:** The Second Trustee District appreciates the report of the Task Force to Evaluate the
5 Business of the House of Delegates and clearly supports reforms to help do our business most efficiently.
6 That said we also accept that we are a political organization and our leadership is selected with elections
7 that take place at our annual meeting. We have concerns about the statement in the report that starts on
8 line 27 of page 5008 that concludes that the Executive Director and the Treasurer should give their
9 remarks to the House of Delegates on Friday instead of Monday. This now would place those remarks
10 prior to the elections for officers held at the House. If the Treasurer were a candidate for higher office this
11 would appear to give them an opportunity to address the House prior to the election not given to any
12 other candidate for that office. In addition although never intended, the remarks of the Associations
13 Executive Director often suggests visions for the future of the organization that might inadvertently
14 support one candidates platform over another. This should be avoided and the simple way to accomplish
15 this is to give those presentations after the election process is concluded:

16 Resolution

17 **93. Resolved,** that the Speaker of the House of Delegates is urged to set the presentations to the
18 House of Delegates of the Association's Executive Director and Treasurer after the election process
19 is fully concluded.

20 Res. 93

21

Resolution No. 94 NewReport: N/A Date Submitted: October 2016Submitted By: Twelfth Trustee DistrictReference Committee: A (Budget, Business and Administrative Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Organizational Capacity-Obj. 6: Role and responsibility of each element of the tripartite clearly defined and agreed upon

How does this resolution increase member value: See Background

- 1 **ADD A FOURTH HOUSE OF DELEGATES MEETING**
- 2 The following resolution was adopted by the Twelfth Trustee District and transmitted on October 21,
- 3 2016, by Dr. Douglas Auld, Caucus Chair.
- 4 **Background:** This year the House of Delegates tried a new format to shorten the House of Delegates
- 5 meeting by removing the fourth meeting of the House of Delegates. There seems to be many unforeseen
- 6 consequences, especially in scheduling many events. Consequently we respectfully submit the following
- 7 resolution.
- 8 **Resolution**
- 9 **94. Resolved,** that the meeting schedule of the House of Delegates be modified to add a fourth
- 10 meeting; and be if further
- 11 **Resolved,** that Resolution 98H-2015 be rescinded.
- 12 Res. 94

Dental Benefits, Practice and Related Matters

Resolution No. 11 NewReport: N/A Date Submitted: July 2016Submitted By: Council on Dental PracticeReference Committee: B (Dental Benefits, Practice and Related Matters)Total Net Financial Implication: None Net Dues Impact: Amount One-time Amount On-going FTE 0

ADA Strategic Plan Objective: Membership-Obj. 1: Leaders and Advocates in Oral Health

How does this resolution increase member value: See Background

1 RESCISSION OF POLICY, IDENTIFICATION THROUGH PROSTHETIC DEVICES

2 **Background:** The Council reviewed ADA policy, Identification Through Prosthetic Devices (Appendix 1),
3 and found the policy to be outdated and concurred that Uniform Procedure for Permanent Marking of
4 Dental Prostheses (Appendix 2), adequately describes the essential elements necessary to identify dental
5 prosthetics.

6 Therefore the Council recommends rescission of the following policy.

7 Resolution

8
9 **11. Resolved,** that the ADA policy, "Identification Through Prosthetic Devices" (*Trans*:1978:181)
10 be rescinded.

11 **BOARD RECOMMENDATION: Vote Yes.**

12 **BOARD VOTE: UNANIMOUS* (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO**
13 **BOARD DISCUSSION)**

14 ***Dr. Gamba was not in attendance.**

APPENDIX 1

POLICY TO BE RESCINDED

Identification Through Prosthetic Devices

1 In response to a directive of the 1977 House of Delegates, Resolution 114-1977 (*Trans.*1977:913), the
2 Council on Federal Dental Services has explored the possible methods of forensic identification of
3 removable dental prosthetic devices which could be established on a national basis. The Council's study
4 of this issue included a review of the principal scientific literature, existing domestic and international
5 procedures for dental prosthetic identification and the recently enacted Minnesota state statute on
6 mandatory owner identification marking for removable dental prostheses. In addition, the Council
7 solicited, and gratefully acknowledges, the advice of the military dental services, the Armed Forces
8 Institute of Pathology and the Veterans Administration. Assistance was also provided by the Council on
9 Prosthetic Services and Dental Laboratory Relations and the Council on Scientific Affairs and Devices.

10 **114-1977. Resolved,** that the American Dental Association study the possible methods of identifying
11 the victim through the identification of his removable prosthetic devices and that the Association
12 establish such standards on a national basis.

13 On the basis of the information reviewed and recommendations considered, the Council has concluded
14 that a system of dental prostheses identification should, if it is to be of value on a national scale, meet the
15 following criteria: (1) standardized identification markings should be utilized which are universally
16 recognized, legible and permanent; (2) the procedure for applying the identification markings should be
17 clinically safe, economically practical and cosmetically acceptable.

18 It is the opinion of the Council that a patient's social security number, typed on onionskin, linen, nylon, foil
19 or similar materials, and inserted into the denture before final closure best satisfies the above-mentioned
20 criteria.

21 The Council believes that numerical digits are superior to letter markings, such as a patient's name,
22 because of the reduced possibility of error and duplication. A suggestion was made that the license
23 number of the patient's dentist, prefaced by the state abbreviation (e.g., MD1234) provides a smaller
24 numerical pool from which to trace a victim's identity and lessens the opportunity for transposition that
25 could occur in reading a nine-digit social security number. While there may be certain advantages in this
26 type of marking, the Council does not recommend its implementation because of the dependence upon
27 dental records for identification which, as a result of death, retirement or other factors, may not be
28 available. Other forms of numerical markings were also considered but were rejected in favor of the
29 uniformly recognized social security number. The Council notes that this marking has been used for
30 dental prostheses identification by the military since 1970. When space considerations do not permit the
31 application of the complete social security number, the Council suggests using the terminal digits, e.g.,
32 6793. It is the Council's understanding that through cross reference and other procedures, a high
33 probability still exists for identification when the entire number cannot be used.

34 The Council recommends that the identification marking be typed or otherwise inscribed on onionskin or
35 similar materials because of the low cost, ease of application and adaptability to varying clinical demands.
36 Alternative substances were considered, such as shim stock metal, stainless steel and other alloys,
37 because of their greater durability and resistance to incineration and chemicals. However, the Council
38 concluded that the cost of materials and stamping equipment could pose a barrier to acceptance. The
39 procedure of inserting the recommended materials, with identification markings, into the partial or

1 complete denture is a generally popular method which has been proven clinically safe, technically
2 practical and cosmetically acceptable to the public.

3 The Council believes that a social and legal justification exists for establishing a national, standardized
4 system of dental prostheses identification. This need is reflected in the fact that the dentures of victims
5 involved in civil disasters and other accidents are very often the only surviving remains which can be
6 identified. In addition, there are individuals who, because of psychiatric disorders, geriatric problems or
7 amnesia, may not otherwise be readily identifiable except through their dental appliances.

8 It is the opinion of the Council that such a national system, described earlier, should be implemented by
9 the individual state, not the federal government. To ensure that the methods and procedures are uniform,
10 the Council recommends that the American Dental Association adopt guidelines which can serve as a
11 model for states which choose to enact such statutes.

12 The Council recognizes that the identification procedures discussed are of value only in those instances
13 where victims have dental prosthetic devices and where it is clinically feasible to identify such devices.
14 Obviously, a large segment of the population would not benefit from this national system. For that reason
15 the Council believes that consideration should also be given to the establishment of guidelines which
16 encourage procedures for uniform and accurate record keeping for all dental patients. While the ability to
17 identify fatality victims through their clinical records would not be as precise as through prostheses
18 identification, the Council nevertheless is of the opinion that a standardized record system or other
19 identifying marking would be of substantial assistance.

APPENDIX 2

Uniform Procedure for Permanent Marking of Dental Prostheses

Resolved, that the American Dental Association support the use of uniform methods of marking dental prostheses for identification purposes, and be it further

Resolved, that a system of dental prosthetic identification should meet the following criteria:

1. Patient specific identification, used with patient consent, should be incorporated into the dental prosthesis.
2. The identification should be legible and permanent.
3. The procedure for applying the identification markings should be clinically safe, economically practical and cosmetically acceptable.

Resolution No. 12 NewReport: N/A Date Submitted: July 2016Submitted By: Council on Dental Benefit ProgramsReference Committee: B (Dental Benefits, Practice and Related Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Membership-Obj. 1: Leaders and Advocates in Oral Health

How does this resolution increase member value: Not Applicable

PROPOSED NEW POLICY ON COMPREHENSIVE ADA POLICY STATEMENT ON INAPPROPRIATE OR INTRUSIVE PROVISIONS AND PRACTICES BY THIRD PARTY PAYERS

Background: In 2015, the House of Delegates adopted Resolution 79H-2015 directing the ADA to draft a specific policy proposal opposing dental provider contracts that permit the practice of disallowing claims by third-party payers. The Council on Dental Benefit Programs reviewed existing ADA policy that address related contractual clauses. Subsequently, the Council recommends that five policies be rescinded and replaced with a single comprehensive policy as presented below. The proposed new comprehensive policy includes updated language opposing dental provider contracts that permit the practice of disallowing claims by third-party payers and also includes updated language to reflect current practices.

Proposed Resolution

12. Resolved, that the "Comprehensive ADA Policy Statement on Inappropriate or Intrusive Provisions and Practices by Third Party Payers" be adopted as follows:

The American Dental Association opposes interference in the treatment decisions made between doctor and patient. Plans which contain inappropriate and intrusive provisions substitute business decisions for those made through a patient-doctor dialogue. Such provisions and practices deny patients their purchased benefits and robs them of their rights as informed consumers of healthcare.

Plans which contain provisions, such as those listed below, should disclose them to the plan purchasers and to patients. Dentists should be made aware of these practices when offered a contract.

The ADA is of the opinion that a list of practices by third-party payers that are inappropriate or intrusive and interfere with the doctor-patient relationship includes but is not limited to the following:

Bad Faith Practices: Not treating a beneficiary of a dental benefit plan fairly and in good faith; or a practice which impairs the right of a beneficiary to either receive the appropriate benefit of a dental benefits plan, or to receive the benefit in a timely manner.

Some examples of potential bad faith practices include, but are not limited to:

1. failure to properly investigate the information in a submitted claim
2. unreasonably and purposely delaying or withholding payment of a claim
3. withholding funds from bulk benefit payments for services rendered to unrelated patients as a means of settling disputes over prior claims experienced with the dentist either from an alleged past overpayment by the plan or retroactive ineligibility of benefits for a patient

Inappropriate Fee Discounting Practices: Requiring a dentist, who does not have a participating provider agreement, to accept discounted fees or be bound by the terms and conditions set forth in the participating provider contracts signed by other dentists.

Some examples of inappropriate fee discounting practices include, but are not limited to:

1. issuing reimbursement checks which, upon signing, result in the dentist accepting the amount as payment in full
2. using claim forms which, upon signing, require the dentist to accept the terms of the plan's contract
3. issuing documentation that states the submittal of a claim by a dentist means that he or she accepts all terms and conditions set forth in the participating provider contract
4. sending communications to patients of nonparticipating dentists which state the patient is not responsible for any amount above the maximum plan benefit

Lowering Patient Benefits and Claims Payment Abuse: Intentionally lowering the benefit to the beneficiary and/or lowering the allowable amount to the dentist negating the code for the actual services performed by the dentist. These practices, coupled with contractual clauses that require the dentist to accept the plan payment as payment in full, compound the problem.

Some examples of claims payment abuse include, but are not limited to:

1. **Downcoding:** using a procedure code different from the one submitted in order to determine a benefit in an amount less than that which would be allowed for the submitted code
2. **Bundling of Procedures:** the systematic combining of procedures resulting in a reduced benefit for the patient/beneficiary
3. **Limiting Benefits for Non-Covered Services:** mandating a discounted fee for procedures for which the plan pays no benefit
4. **Least Expensive Alternative Treatment Clauses:** contractual language that allows a plan to only pay for the least expensive treatment if there is more than one way to treat a condition
5. **Most Favored Nation Clauses:** contractual language that requires a dentist to give the beneficiaries of a dental plan the same lower fee that the dentist may have charged another patient

Disallowed Clauses: Contractual language that prohibits a dentist from charging a patient for a covered procedure not paid for by the benefit plan.

Some examples of disallowed procedures include, but are not limited to:

1. direct and indirect pulp caps when provided in conjunction with the final restoration or sedative filling for the same tooth
2. frequency limitations such as sealants, which are repaired or replaced by the same dentist within two years of initial placement

Using Non-Dentist Personnel for Adjudication of Benefit: A practice where a non-dentist determines the medical necessity for benefit adjudication. Any determination of medical necessity for the purposes of benefit adjudication should only be made by a dentist licensed in the state in which the procedures are being performed.

Restricting Dialogue between Dentists and Patients or Public Agencies: Contractual language that restricts dentists from fulfilling their legal and ethical duties to appropriately discuss with patients, other health care providers, public officials or public agencies, any matter relating to treatment of patients, treatment options, payment policies, grievance procedures, appeal processes, and financial incentives between any health plan and the dentist.

Automatic Assignment of Participating Dentist Agreements: Contractual language which allows PPO leasing companies and third-party payers to obligate the dentist to participate in any other third party payer or managed care network without written consent from the dentist. This is typically accomplished by selling or providing the discount rate information to any other third-party payers and/or other managed care networks.

and be it further

Resolved, that the following ADA policies be rescinded:

- Fraudulent and Abusive Practices in Dental Benefits Plans and Claims (*Trans.*1998:701; 2001:428; 2010:551; 2011:455)
- Opposition to Contractual Language Restricting Dialogue Between Providers and Patients, Public Officials or Public Agencies (*Trans.*1996:691)
- Prohibition of Contract Provisions Permitting the Automatic Assignment of Participating Dentist Agreements Among Entities Engaged in the Business of Insurance (*Trans.*1995:648)
- Least Expensive Alternative Treatment Clauses (*Trans.*1991:634)
- Health Plans Cannot Refuse to Contract With, or Compensate Qualified Providers Who Discuss Health Plan Requirements With Patients (*Trans.*1996:682)

BOARD RECOMMENDATION: Vote Yes.

BOARD VOTE: UNANIMOUS* (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO BOARD DISCUSSION)

***Dr. Gamba was not in attendance.**

WORKSHEET ADDENDUM

POLICIES TO BE RESCINDED

Fraudulent and Abusive Practices in Dental Benefits Plans and Claims (*Trans.*1998:701; 2001:428; 2010:551; 2011:455)

Resolved, that the following definitions related to potentially fraudulent and abusive practices committed by third-party payers administering dental benefits be adopted.

Claims Payment Fraud: The intentional manipulation or alteration of facts or procedure codes submitted by a treating dentist resulting in a lower payment to the beneficiary and/or treating dentist than would have been paid if the manipulation had not occurred.

Bad Faith Insurance Practices: The failure to deal with a beneficiary of a dental benefit plan fairly and in good faith; or an activity which impairs the right of the beneficiary to receive the appropriate benefit of a dental benefits plan or to receive them in a timely manner.

Some examples of potential bad faith insurance practices include, but are not limited to: evaluating claims based on standards which are significantly at variance with the standards of the community; failure to properly investigate a claim for care; and unreasonably and purposely delaying and/or withholding payment of a claim.

Inappropriate Fee Discounting Practices: Intentionally engaging in practices which would force a dentist, who does not have a participating provider agreement, to accept discounted fees or be bound by the terms and conditions set forth in the participating provider contract.

Some examples of inappropriate fee discounting practices include, but are not limited to: issuing reimbursement checks which, upon signing, result in the dentist accepting the amount as payment in full; using claim forms which, upon signing, require the dentist to accept the terms of the plan's contract; issuing insurance cards which state that the submittal of a claim by a dentist means that he or she accepts all terms and conditions set forth in the participating provider contract; and sending communications to patients of nonparticipating dentists which state that he or she is not responsible for any amount above the maximum plan benefit as established by the plan.

Downcoding: A practice of third-party payers in which the benefit code has been changed to a less complex and/or lower cost procedure than was reported except where delineated in contract agreements.

Bundling of Procedures: The systematic combining of distinct dental procedures by third-party payers that results in a reduced benefit for the patient/beneficiary.

and be it further

Resolved, that the following definitions related to potentially fraudulent and abusive practices by a dentist who is submitting claims to a third-party carrier be adopted.

Claims Reporting Fraud: The intentional misrepresentation of material facts concerning treatment provided and/or charges made, in that this misrepresentation would cause a higher payment.

Overcoding: Reporting a more complex and/or higher cost procedure than was actually performed.

Unbundling of Procedures: The separating of a dental procedure into component parts with each part having a charge so that the cumulative charge of the components is greater than the total charge to patients who are not beneficiaries of a dental benefit plan for the same procedure.

Opposition to Contractual Language Restricting Dialogue Between Providers and Patients, Public Officials or Public Agencies (*Trans.*1996:691)

Resolved, that the Association opposes the use of contractual language that restricts providers from fulfilling their legal and ethical duties to appropriately discuss with patients, other health care providers, public officials or public agencies, any matter relating to treatment of patients, treatment options, payment policies, grievance procedures, appeal processes, and financial incentives between any health plan and the provider, and be it further

Resolved, that the appropriate agencies of the Association seek federal legislation and encourage constituent societies to seek state legislation implementing the intent of this policy.

Prohibition of Contract Provisions Permitting the Automatic Assignment of Participating Dentist Agreements Among Entities Engaged in the Business of Insurance
(*Trans.*1995:648)

Resolved, that the appropriate Association agencies initiate legislative and/or regulatory actions to prohibit PPO brokers and third-party payers in contractual relationships with dentists from selling and/or using the discount rate information about those dentists to any other third-party payers and/or extended managed care networks, and be it further

Resolved, that the Association encourage state dental societies to initiate legislative and/or regulatory action to prohibit these practices on a state level.

Least Expensive Alternative Treatment Clauses (*Trans.*1991:634)

Resolved, that the use of a clause in a dental plan which restricts benefits to those for the least expensive alternative treatment as defined by the third-party payer can be misleading to the plan purchaser and the dental patient, and be it further

Resolved, that plans which contain this clause should make the limitations of this clause understood to the plan purchaser and the dental patient, and be it further

Resolved, that to best educate the public as to the application of this clause when it is applied to limit benefit coverage, the plan should inform the plan purchaser of that application and should provide the patient and treating dentist with the name and qualifications of the individual making the determination, along with the basis for determination that another treatment is in the best interests of the patient and appropriate for the patient's condition, and be it further

Resolved, that the ADA Council on Dental Benefit Programs be directed to inform consumer groups of the potential problems involved in accepting a contract that will pay only for the least expensive alternative treatment as determined by the third-party payer.

1 **Health Plans Cannot Refuse to Contract with, or Compensate Qualified Providers Who**
2 **Discuss Health Plan Requirements With Patients** (*Trans.*1996:682)

3 **Resolved**, that the appropriate agencies of the American Dental Association seek federal
4 legislation and encourage constituent societies to seek state legislation requiring that health
5 plans not refuse to contract with or otherwise compensate for covered services, of otherwise
6 qualified providers or nonparticipating providers, solely because the providers have, in good
7 faith, communicated with their current or prospective patients regarding the provisions, terms
8 or requirements of health plan products as they relate to the needs of the providers' patients.

Resolution No. 12S-1 SubstituteReport: N/A Date Submitted: September 2016Submitted By: Ninth Trustee DistrictReference Committee: B (Dental Benefits, Practice and Related Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Membership-Obj. 1: Leaders and Advocates in Oral Health

How does this resolution increase member value: Not Applicable

**SUBSTITUTE FOR RESOLUTION 12: PROPOSED NEW POLICY ON COMPREHENSIVE ADA
POLICY STATEMENT ON INAPPROPRIATE OR INTRUSIVE PROVISIONS AND PRACTICES BY
THIRD PARTY PAYERS**

The following substitute for Resolution 12 (Worksheet:3004) was adopted by the Ninth Trustee District and submitted on September 25, 2016, by delegation chairs, Dr. Ned Murphy and Dr. Michele Tulak-Gorecki.

Background: The Ninth District is proposing an amendment in line 15 below. It believes that the words "treatment decisions" should replace the word "those" to make the sentence clearer.

Proposed Resolution

12S-1. Resolved, that the "Comprehensive ADA Policy Statement on Inappropriate or Intrusive Provisions and Practices by Third Party Payers" be adopted as follows (deletions stricken; additions underscored):

The American Dental Association opposes interference in the treatment decisions made between doctor and patient. Plans which contain inappropriate and intrusive provisions substitute business decisions for ~~these~~ treatment decisions made through a patient-doctor dialogue. Such provisions and practices deny patients their purchased benefits and robs them of their rights as informed consumers of healthcare.

Plans which contain provisions, such as those listed below, should disclose them to the plan purchasers and to patients. Dentists should be made aware of these practices when offered a contract.

The ADA is of the opinion that a list of practices by third-party payers that are inappropriate or intrusive and interfere with the doctor-patient relationship includes but is not limited to the following:

Bad Faith Practices: Not treating a beneficiary of a dental benefit plan fairly and in good faith; or a practice which impairs the right of a beneficiary to either receive the appropriate benefit of a dental benefits plan, or to receive the benefit in a timely manner.

1 Some examples of potential bad faith practices include, but are not limited to:

- 2 1. failure to properly investigate the information in a submitted claim
- 3 2. unreasonably and purposely delaying or withholding payment of a claim
- 4 3. withholding funds from bulk benefit payments for services rendered to unrelated patients as a
- 5 means of settling disputes over prior claims experienced with the dentist either from an
- 6 alleged past overpayment by the plan or retroactive ineligibility of benefits for a patient

7 **Inappropriate Fee Discounting Practices:** Requiring a dentist, who does not have a participating
8 provider agreement, to accept discounted fees or be bound by the terms and conditions set forth in
9 the participating provider contracts signed by other dentists.

10 Some examples of inappropriate fee discounting practices include, but are not limited to:

- 11 1. issuing reimbursement checks which, upon signing, result in the dentist accepting the amount
- 12 as payment in full
- 13 2. using claim forms which, upon signing, require the dentist to accept the terms of the plan's
- 14 contract
- 15 3. issuing documentation that states the submittal of a claim by a dentist means that he or she
- 16 accepts all terms and conditions set forth in the participating provider contract
- 17 4. sending communications to patients of nonparticipating dentists which state the patient is not
- 18 responsible for any amount above the maximum plan benefit

19 **Lowering Patient Benefits and Claims Payment Abuse:** Intentionally lowering the benefit to
20 the beneficiary and/or lowering the allowable amount to the dentist negating the code for the
21 actual services performed by the dentist. These practices, coupled with contractual clauses that
22 require the dentist to accept the plan payment as payment in full, compound the problem.

23 Some examples of claims payment abuse include, but are not limited to:

- 24 1. **Downcoding:** using a procedure code different from the one submitted in order to determine
- 25 a benefit in an amount less than that which would be allowed for the submitted code
- 26 2. **Bundling of Procedures:** the systematic combining of procedures resulting in a reduced
- 27 benefit for the patient/beneficiary
- 28 3. **Limiting Benefits for Non-Covered Services:** mandating a discounted fee for procedures
- 29 for which the plan pays no benefit
- 30 4. **Least Expensive Alternative Treatment Clauses:** contractual language that allows a plan
- 31 to only pay for the least expensive treatment if there is more than one way to treat a condition
- 32 5. **Most Favored Nation Clauses:** contractual language that requires a dentist to give the
- 33 beneficiaries of a dental plan the same lower fee that the dentist may have charged another
- 34 patient

35 **Disallowed Clauses:** Contractual language that prohibits a dentist from charging a patient for a
36 covered procedure not paid for by the benefit plan.

37 Some examples of disallowed procedures include, but are not limited to:

- 38 1. direct and indirect pulp caps when provided in conjunction with the final restoration or
- 39 sedative filling for the same tooth
- 40 2. frequency limitations such as sealants, which are repaired or replaced by the same dentist
- 41 within two years of initial placement

42 **Using Non-Dentist Personnel for Adjudication of Benefit:** A practice where a non-dentist
43 determines the medical necessity for benefit adjudication. Any determination of medical necessity
44 for the purposes of benefit adjudication should only be made by a dentist licensed in the state in
45 which the procedures are being performed.

Restricting Dialogue between Dentists and Patients or Public Agencies: Contractual language that restricts dentists from fulfilling their legal and ethical duties to appropriately discuss with patients, other health care providers, public officials or public agencies, any matter relating to treatment of patients, treatment options, payment policies, grievance procedures, appeal processes, and financial incentives between any health plan and the dentist.

Automatic Assignment of Participating Dentist Agreements: Contractual language which allows PPO leasing companies and third-party payers to obligate the dentist to participate in any other third party payer or managed care network without written consent from the dentist. This is typically accomplished by selling or providing the discount rate information to any other third-party payers and/or other managed care networks.

and be it further

Resolved, that the following ADA policies be rescinded:

- Fraudulent and Abusive Practices in Dental Benefits Plans and Claims (*Trans.*1998:701; 2001:428; 2010:551; 2011:455)
- Opposition to Contractual Language Restricting Dialogue Between Providers and Patients, Public Officials or Public Agencies (*Trans.*1996:691)
- Prohibition of Contract Provisions Permitting the Automatic Assignment of Participating Dentist Agreements Among Entities Engaged in the Business of Insurance (*Trans.*1995:648)
- Least Expensive Alternative Treatment Clauses (*Trans.*1991:634)
- Health Plans Cannot Refuse to Contract With, or Compensate Qualified Providers Who Discuss Health Plan Requirements With Patients (*Trans.*1996:682)

BOARD RECOMMENDATION: Received too late for Board consideration.

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Overcoding: Reporting a more complex and/or higher cost procedure than was actually performed.

Unbundling of Procedures: The separating of a dental procedure into component parts with each part having a charge so that the cumulative charge of the components is greater than the total charge to patients who are not beneficiaries of a dental benefit plan for the same procedure.

Opposition to Contractual Language Restricting Dialogue Between Providers and Patients, Public Officials or Public Agencies (*Trans.*1996:691)

Resolved, that the Association opposes the use of contractual language that restricts providers from fulfilling their legal and ethical duties to appropriately discuss with patients, other health care providers, public officials or public agencies, any matter relating to treatment of patients, treatment options, payment policies, grievance procedures, appeal processes, and financial incentives between any health plan and the provider, and be it further

Resolved, that the appropriate agencies of the Association seek federal legislation and encourage constituent societies to seek state legislation implementing the intent of this policy.

Prohibition of Contract Provisions Permitting the Automatic Assignment of Participating Dentist Agreements Among Entities Engaged in the Business of Insurance
(*Trans.*1995:648)

Resolved, that the appropriate Association agencies initiate legislative and/or regulatory actions to prohibit PPO brokers and third-party payers in contractual relationships with dentists from selling and/or using the discount rate information about those dentists to any other third-party payers and/or extended managed care networks, and be it further

Resolved, that the Association encourage state dental societies to initiate legislative and/or regulatory action to prohibit these practices on a state level.

Least Expensive Alternative Treatment Clauses (*Trans.*1991:634)

Resolved, that the use of a clause in a dental plan which restricts benefits to those for the least expensive alternative treatment as defined by the third-party payer can be misleading to the plan purchaser and the dental patient, and be it further

Resolved, that plans which contain this clause should make the limitations of this clause understood to the plan purchaser and the dental patient, and be it further

Resolved, that to best educate the public as to the application of this clause when it is applied to limit benefit coverage, the plan should inform the plan purchaser of that application and should provide the patient and treating dentist with the name and qualifications of the individual making the determination, along with the basis for determination that another treatment is in the best interests of the patient and appropriate for the patient's condition, and be it further

Resolved, that the ADA Council on Dental Benefit Programs be directed to inform consumer groups of the potential problems involved in accepting a contract that will pay only for the least expensive alternative treatment as determined by the third-party payer.

1 **Health Plans Cannot Refuse to Contract with, or Compensate Qualified Providers Who**
2 **Discuss Health Plan Requirements With Patients** (*Trans.*1996:682)

3 **Resolved**, that the appropriate agencies of the American Dental Association seek federal
4 legislation and encourage constituent societies to seek state legislation requiring that health
5 plans not refuse to contract with or otherwise compensate for covered services, of otherwise
6 qualified providers or nonparticipating providers, solely because the providers have, in good
7 faith, communicated with their current or prospective patients regarding the provisions, terms
8 or requirements of health plan products as they relate to the needs of the providers' patients.

Resolution No. 62 NewReport: N/A Date Submitted: September 2016Submitted By: Council on Dental Benefit ProgramsReference Committee: B (Dental Benefits, Practice and Related Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Membership-Obj. 1: Leaders and Advocates in Oral Health

How does this resolution increase member value: See Background

REVISION OF POLICY ON REPORTING OF DENTAL PROCEDURES TO THIRD PARTIES

Background: This resolution is submitted by the Council on Dental Benefit Programs as a result of its scheduled review of ADA policies to ensure their continuing relevance. The resolution was adopted during the April 14-15, 2016 CDBP meeting.

The proposed policy revisions promote recognition that the Code on Dental Procedures and Nomenclature (CDT Code) is the single named national standard code set for transmitting information about dental procedures between dentists and third-party payers. These proposed revisions will reinforce the CDT Code's relevance and required use in HIPAA standard electronic transactions used by dentists, third-party payers and other covered entities in the dental community that exchange information electronically. Additionally, the policy revisions will clarify the policy's intent and scope by eliminating the second and third resolving clauses, and by retaining their key concepts in the revised first and final resolving clauses.

Proposed Resolution

62. Resolved, that the ADA policy, Reporting of Dental Procedures to Third Parties (*Trans.*1991:637; 2009:418; 2013:303) be amended as follows: (additions are underscored; deletions are ~~stricken~~)

Resolved, that the ADA's ~~acknowledges the specification of the~~ Code on Dental Procedures and Nomenclature (CDT Code), as the named national standard code set for transmitting information about dental procedures between dentists and third-party payers, ~~must be used on CDT Code as the sole taxonomy for reporting dental services on HIPAA standard electronic transactions that include dental claims and payments, as well as on the ADA Dental Claim Form, and be it further~~

Resolved, that ~~when reporting dental treatment under dental plans, the method used by dentists for submitting claims to third-party payers and for filing fees must be the American Dental Association's Code on Dental Procedures and Nomenclature (CDT Code), and be it further~~

Resolved, that third-party payers and their agents who process dental claims should not require the reporting of dental treatment or filing fees by any other coding taxonomies, and be it further

Resolved, that when a CDT Code entry includes "...by report" in its nomenclature, or when an unusual procedure, or a procedure one that is accompanied by unusual circumstances, is documented with an "unspecified...procedure, by report" CDT Code ~~reported with a procedure code that includes "by report" in its nomenclature, that procedure code and its accompanying~~

1 narrative description should be accepted by the third-party payer to assist in benefit determination.
2

3 **BOARD RECOMMENDATION: Vote Yes**

4 **BOARD VOTE: UNANIMOUS. (BOARD OF TRUSTEES CONSENT CALENDAR—NO BOARD**
5 **DISCUSSION)**

Resolution No. 63 NewReport: N/A Date Submitted: September 2016Submitted By: Council on Dental Benefit ProgramsReference Committee: B (Dental Benefits, Practice and Related Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Membership-Obj. 1: Leaders and Advocates in Oral Health

How does this resolution increase member value: See Background

1 REVISION OF POLICY, GUIDELINES ON THE USE OF IMAGES IN DENTAL BENEFIT PROGRAMS

2 Background: This resolution is submitted by the Council on Dental Benefit Programs as a result of its
3 scheduled review of ADA policies to ensure their continuing relevance. The resolution was adopted
4 during the April 14-15, 2016 CDBP meeting.

5 The proposed policy revisions focus attention on, and clearly parse, provisions of the current policy by
6 those that pertain to a dentist and those that pertain to a third-party payer, thereby making these
7 guidelines a more ready and understandable reference for its intended audiences. These proposed policy
8 revisions also establish a link with the joint ADA and Food and Drug Administration (FDA) publication
9 concerning radiographic imaging (currently posted online at [https://www.ada.org/en/member-center/oral-](https://www.ada.org/en/member-center/oral-health-topics/x-rays)
10 [health-topics/x-rays](https://www.ada.org/en/member-center/oral-health-topics/x-rays), thereby eliminating redundancies, and the need to amend ADA policy when the
11 referenced publication is revised.

12 Proposed Resolution

13 63. Resolved, that the ADA policy, Guidelines on the Use of Images in Dental Benefit Programs
14 (*Trans.*1995:617; 2007:419) be amended as follows: (additions are underscored; deletions are
15 ~~stricken~~)

16 Guidelines on ~~the~~ Capture and Use of Diagnostic Images by Dentists, and by Third-Party
17 ~~Payers or Administrators of in~~ Dental Benefit Programs (*Trans.*1995:617; 2007:419)

18 Resolved, that the following guidelines pertain to dentists:

19 1. Dentists should refer to the joint ADA/FDA publication titled *DENTAL RADIOGRAPHIC*
20 EXAMINATIONS: RECOMMENDATIONS FOR PATIENT SELECTION AND LIMITING
21 RADIATION EXPOSURE, or its successors, for assistance in determining clinical necessity
22 for such diagnostic imaging.

23 2. If a third party requests an image which was not generated as part of the dentist's clinical
24 treatment, dentists should consider the clinical necessity of the image in connection with the
25 request.

26 3. When a dentist determines that it is appropriate to comply with a third-party payer's
27 request for images, submit a duplicate set and retain the originals.

28 4. Postoperative images should be required only as part of dental treatment.

- 1 5. Images must be correctly identified and be of diagnostic quality.
- 2 6. Images are an integral part of the dentist's clinical records and are considered the
- 3 dentist's property, consistent with state law.
- 4 7. The confidentiality of images and all other patient record content must be maintained in
- 5 accordance with applicable HIPAA and state privacy and security regulations.
- 6 8. Additional costs incurred by the dentist in copying images and clinical records for claims
- 7 determination that are not reimbursed by the third-party payer may be billed to the patient.
- 8 and be it further

9 **Resolved**, that the following ~~Guidelines on the Use of Images in Dental Benefit Programs be~~
10 ~~adopted as policy of the Association:~~

11 **Guidelines on the Use of Images in Dental Benefit Programs**

12 ~~The American Dental Association's recommendations on selection criteria for images states~~
13 ~~that diagnostic imaging should be used only after clinical evaluation, review of the patient's~~
14 ~~history, and consideration of the dental and general health needs of the patient. The type,~~
15 ~~frequency and extent of diagnostic images necessary for each individual patient will be~~
16 ~~provided in accordance with the dentist's professional judgment. Federal and state laws~~
17 ~~regarding patient privacy are subject to change and may supersede these guidelines.~~

18 ~~The Association believes that the following guidelines pertain to third-party payers and dental~~
19 ~~benefit plan administrators should be applied in the use of images in dental care plans:~~

20 1. Payers and administrators should refer to the joint ADA/FDA publication titled *DENTAL*
21 *RADIOGRAPHIC EXAMINATIONS: RECOMMENDATIONS FOR PATIENT SELECTION*
22 *AND LIMITING RADIATION EXPOSURE*, or its successors, for assistance in determining
23 their necessity for such diagnostic imaging. Images should be generated only for clinical
24 reasons as determined by the patient's dentist. Clinical images may be used as part of a
25 system for determining those benefits to which the patient is entitled under the terms of a
26 contract. Third-party payers should not request that images be generated solely for
27 administrative purposes. If a third party requests an image which was not generated as part
28 of the dentist's clinical treatment, dentists should consider the clinical necessity of the image
29 in connection with the request.

30 2. ~~When a dentist determines that it is appropriate to comply with a third-party payer's~~
31 ~~request for images, it is recommended that a duplicate set be submitted and the originals~~
32 ~~retained by the dentist. All images, including duplicates, except those submitted in digital or~~
33 ~~other electronic form, and whether or not it has been requested, should be returned to the~~
34 ~~dentist.~~

35 3. ~~There are many instances in which a determination of care cannot be made solely on the~~
36 ~~basis of images and it is improper for third-party payers to deny authorization for payment~~
37 ~~or make determinations about treatment based solely on images.~~

38 4. ~~Third-party payers should not use images to infringe upon the professional judgment of~~
39 ~~the treating dentist or to interfere in any way with the dentist-patient relationship. All questions~~
40 ~~of interpretation of images must be reviewed by a dentist consultant.~~

41 5. ~~Clinical images should only be requested when they will be reviewed by a dentist to make~~
42 ~~a determination regarding the patient's entitlement to benefits. Dentists reviewing images for~~
43 ~~this purpose should be licensed in the U.S., preferably within the jurisdiction of the dentist~~
44 ~~providing the images in accordance with applicable state law.~~

45 6. ~~Patients should be exposed to radiation only when clinically necessary, as determined by~~
46 ~~the treating dentist. Postoperative images should be required only as part of dental treatment.~~

~~7. It is important that images be correctly identified and be of diagnostic quality.~~

~~8. Third-party payers, except those in digital or other electronic form, should must protect the confidentiality of all records, including images, which are submitted to them by dental offices in accordance with applicable HIPAA and state privacy and security regulations.~~

8. All images submitted to third-party payers should be returned to the treating dentist within 15 working days. Images received in an electronic form should be permanently deleted within 30 days of the completion of claims adjudication.

~~9. Images held by parties other than the treating dentist should not be transmitted to any agency or entity without written consent of the dentist or patient.~~

~~40.~~ Where a claim or predetermination request indicates that images are provided, the third-party payer should immediately notify the submitting dentist's office if the images are missing.

10. ~~44.~~ A patient's predetermination request or claim should not be prejudiced by the third-party payer's loss or misplacement of images.

11. ~~42.~~ Images are an integral part of the dentist's clinical records and, as such, should be considered the property of the dentist where consistent with state law. Because ~~As~~ it is necessary for a dentist to maintain accurate and complete records, third-party payers should accept copies of images in lieu of originals.

12. ~~43.~~ Any additional costs incurred by the dentist in copying images and clinical records for claims determination should be reimbursed by the third-party payer, ~~or the patient~~

BOARD RECOMMENDATION: Vote Yes.

BOARD VOTE: UNANIMOUS. (BOARD OF TRUSTEES CONSENT CALENDAR—NO BOARD DISCUSSION)

Resolution No. 64 New

Report: N/A Date Submitted: September 2016

Submitted By: Council on Dental Practice

Reference Committee: B (Dental Benefits, Practice and Related Matters)

Total Net Financial Implication: None Net Dues Impact: _____

Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Membership-Obj. 1: Leaders and Advocates in Oral Health

How does this resolution increase member value: See Background

1 OPIOID PRESCRIBING AND ABUSE PREVENTION

2 **Background:** The misuse and abuse of opioid pain medications has become a serious public health
3 problem. In 2014, over 47,000 people died from drug overdoses, and 40% of those involved opioid
4 analgesics.¹ Nearly two million Americans reported abusing or being dependent on prescription pain
5 relievers.²

6
7 The ADA has been actively engaged on this issue for more than a decade. Policy on opioid prescribing
8 was adopted by the House of Delegates in 2005. The current policy is:

9 **Statement on the Use of Opioids in the Treatment of Dental Pain** 10 **(Trans.2005:328)**

11 **Resolved,** that the following ADA Statement on the Use of Opioids in the Treatment
12 of Dental Pain be adopted.

13 **Statement on the Use of Opioids in the Treatment of Dental Pain**

- 14 1. The ADA encourages continuing education about the appropriate use of
15 opioid pain medications in order to promote both responsible prescribing
16 practices and limit instances of abuse and diversion.
- 17 2. Dentists who prescribe opioids for treatment of dental pain are
18 encouraged to be mindful of and have respect for their inherent abuse
19 potential.
- 20 3. Dentists who prescribe opioids for treatment of dental pain are also
21 encouraged to periodically review their compliance with Drug Enforcement
22 Administration recommendations and regulations.

¹ Centers for Disease Control and Prevention, National Center for Health Statistics. Fact Sheet: NCHS Data on Drug Poisoning Deaths: March 2016.

² Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality. (2015). Behavioral health trends in the United States: Results from the 2014 National Survey on Drug Use and Health (HHS Publication No. SMA 15-4927, NSDUH Series H-50): 23.

4. Dentists are encouraged to recognize their responsibility for ensuring that prescription pain medications are available to the patients who need them, for preventing these drugs from becoming a source of harm or abuse and for understanding the special issues in pain management for patients who are already opiate dependent.
5. Dentists who are practicing in good faith and who use professional judgment regarding the prescription of opioids for the treatment of pain should not be held responsible for the willful and deceptive behavior of patients who successfully obtain opioids for non-dental purposes.
6. Appropriate education in addictive disease and pain management should be provided as part of the core curriculum at all dental schools.

The *Journal of the American Dental Association* featured a cover story on dentistry's role in preventing prescription opioid abuse in 2011.³ Each year since 2011, four webinars on opioids have been available to ADA members and are archived at the Substance Abuse and Mental Health Services Providers' Clinical Support System [website](#). In 2011, the ADA began working with the White House Office of National Drug Control Policy (ONDCP) to explore areas where dentistry and government could work together to address the opioid issue. Additional activities to raise professional awareness about widespread opioid abuse and provide resources to help prevent it include the publishing of the ADA *Practical Guide to Substance Use Disorder and Safe Prescribing*, promotion of proper counseling and treatment considerations of patients with or in recovery from a substance use disorder using the ADA's 2005 Statement on Provision of Dental Treatment for Patients with Substance Use Disorders, participation in a number of campaigns and initiatives including the AMA Task Force to Reduce Opioid Abuse, the Partnership for Drug-Free Kids' Medicine Abuse Project, the Drug Enforcement Administration's National Prescription Drug Take-Back Initiative, the Substance Abuse and Mental Health Services Administration's National Recovery Month, the Surgeon General Turn the Tide Campaign, and White House Partnership to Address Prescription Drug Abuse.

Notwithstanding these significant efforts, dentistry's role in the widespread misuse and abuse of opioid pain medications has been questioned by select government officials and the press. In June, NBC News aired a story suggesting that opioid addiction "starts at the dentist for many Americans."⁴ Sen. Richard Durbin (D-Ill.) dispatched letters accusing four leading practitioner groups, including the ADA, for "[failing] to take responsibility for its role in contributing to the opioid and heroin epidemic." The ADA has challenged Senator Durbin's assertion cited in his letter and press release; to date no response from his office has been received.

Federal agencies, including the Centers for Disease Control and Prevention, National Institute on Drug Abuse, Food and Drug Administration, the Office on National Drug Control Policy, the states of Pennsylvania and Minnesota, and healthcare organizations such as the American Medical Association, the American Society of Anesthesiologists, and the American Academy of Pain Medicine are currently responding to the opioid drug abuse crisis occurring in the U.S. by establishing recommendations, guidelines, or policies that may improve and better define practitioner's prescribing of opioid pain relievers.

These reported activities highlight the urgent need for a proactive ADA position. Therefore, the Council recommends adoption of the following resolution:

³ Richard C. Denisco, et al., Prevention of prescription opioid abuse: The role of the dentists. *Journal of the American Dental Association* 142, no. 7 (2011): 800-810.

⁴ Kate Snow and Parminder Deo, The Deadly Triangle: Dentists, Drugs and Dependence, NBC News, June 21, 2016.

Proposed ADA Statement on the Use of Opioids in the Treatment of Dental Pain

- and be it further

BOARD VOTE: UNANIMOUS. (BOARD OF TRUSTEES CONSENT CALENDAR—NO BOARD DISCUSSION)

Resolution No. 85 NewReport: N/A Date Submitted: September 2016Submitted By: Fourteenth Trustee DistrictReference Committee: B (Dental Benefits, Practice and Related Matters)Total Net Financial Implication: None Net Dues Impact: Amount One-time Amount On-going FTE 0

ADA Strategic Plan Objective: Membership-Obj. 1: Leaders and Advocates in Oral Health

How does this resolution increase member value: See Background

THIRD PARTY PAYMENT CHOICES

The following resolution was adopted by the Fourteenth Trustee District and transmitted on September 13, 2016, by Dr. A.J. Smith, chair, Resolutions Committee.

Background: In recent years many third party payers have changed the method of payment to dentists, often without their consent. Traditionally, third party payers sent paper checks along with an Explanation of Benefits (EOB). Alternate methods of payment being utilized now include electronic funds transfer (EFT) deposits and credit card payments. It can create additional burdens and expenses for dentists. These burdens and expenses include:

- Matching electronic payments to EOBs
- Ensuring accurate electronic deposits are made
- Reconciling EFT deposits to practice software and accounting software
- In regards to credit card payments, fees are assessed by payment processing companies, often 3% or more of the total amount when a card is not present to swipe. Sometimes these credit card companies are owned by the dental benefits company itself.

Resolution

85. Resolved, that the Council on Dental Benefit Programs develop policy to encourage third party payers to allow dentists to make a choice about the method of timely claims payment, considering challenges such as:

- Matching electronic payments to EOBs
- Ensuring accurate electronic deposits
- Reconciling EFT deposits to practice software and accounting software
- Processing credit card payments, where fees are assessed by payment processing companies, often at 3% or more of the total amount when a card is not present to swipe
- Insurance company owned credit card companies withholding processing fees

and be it further

Resolved, that the ADA educate members on the costs and ramifications of various methods of claims payment, and be it further

Resolved, that the ADA develop model legislation that requires third party payers to allow dentists the timely choice in the available methods of payment.

- 1 **BOARD RECOMMENDATION: Vote Yes.**
- 2 **BOARD VOTE: UNANIMOUS.**

Resolution No. 87 NewReport: N/A Date Submitted: October 2016Submitted By: Sixth Trustee DistrictReference Committee: B (Dental Benefits, Practice and Related Matters)Total Net Financial Implication: \$40,000 Net Dues Impact: \$0.38Amount One-time Amount On-going FTE 0

ADA Strategic Plan Objective: Membership-Obj. 1: Leaders and Advocates in Oral Health

How does this resolution increase member value: See Background

1 REVIEW OF RECOMMENDATIONS FOR CONE BEAM COMPUTED TOMOGRAPHY INSPECTIONS

2 The following resolution was submitted by the Sixth Trustee District and transmitted on October 4, 2016,
3 by Ms. Vicki Wilbers, executive director, Missouri Dental Association.

4 **Background:** The state of Missouri instituted a new inspection protocol for radiation equipment in 2014.
5 The protocol outlines that dental offices with intra-oral and panoramic machines are classified as Class D
6 facilities, requiring inspection by a Qualified Expert (QE) every 6 years. Inspection costs incurred are
7 approximately \$350 - \$450 per tube head. Additionally, the protocol states that if an office has a Cone
8 Beam Computed Tomography (CBCT) machine, then that facility is classified as a Class A facility, placing
9 them in the same category as a hospital with medical CT and radiation therapy machines, with inspection
10 by a qualified expert every year at a cost of well over \$1,200. When inquired about the reason for this
11 annual inspection requirement, the state of Missouri cited ADA Council on Scientific Affairs 2012
12 recommendation as its primary justification.

13 In 2012, the ADA Council on Scientific Affairs in an article in *JADA* (August 2012) outlined various
14 principles for safe use of dental and maxillofacial cone beam computer tomography.

15 One of these principles states the following:

16 Facilities using CBCT systems should consult a health physicist (or other qualified expert) to perform
17 equipment performance and compliance evaluations initially at installation and then follow a schedule
18 in compliance with local, state and federal requirements. The Council recommends that a
19 performance evaluation be completed at least annually. The evaluations should include patient dose
20 estimation to assist the facility with patient dose management.

21 Concerns were stated by many members questioning the need for an annual inspection in improving
22 patient safety, the additional costs involved without any benefit and the lack of available QE to perform
23 the said inspections. The state of Missouri now requires dental offices to hire, at their expense, radiation
24 inspectors from a nation-wide list of QE's. Only a limited number of QE's are approved to inspect a CBCT.
25 As such these QE's are difficult to come by and it is often costly for our members, especially if they need
26 to be brought in from out of state.

27 CBCT first generation machines that have been used daily for well over a decade are still safe and
28 operating correctly. Manufacturers continue to improve their machines considerably. Many dental
29 manufacturers offer "upgradable" panoramic machines. With a CBCT upgrade it simply involves a new
30 sensor and software while utilizing the same x-ray tube head, meaning no change in radiation emission
31 capabilities. In terms of patient safety, dental x-rays provide a very limited amount of uSv (units of
32 radiation). The sources of radiation exposure from dental x-rays through a CBCT range from 34-68 uSv

verses hospital procedures such as a Mammogram that ranges from 1500-3000uSv and a Medical CT-scan of chest or abdominal spine at 8000 uSv. Additionally, the FDA indicates that CBCT have none-to-minimal risk in a dental office setting.

As estimated by Steve Hale, Ph.D., DABR, Radiation physicist, when imaging the head, "CBCT systems dose measurements range from 2% to 10% compared to medical imaging CT systems." He also noted that in all of the CBCT systems that his company has inspected in the previous year, which included many first generation units that are over 10 years old, not a single one failed due to any radiation safety tests.

So these annual inspections of CBCT's are not increasing patient safety but only add to the expense and difficulty of getting these inspections done for our members that own CBCT. As the use of CBCT is rapidly increasing, this problem would only affect more of our members in time.

Resolution

87. Resolved, that the Council of Scientific Affairs and other appropriate ADA agencies review the recommendations for Cone Beam Computed Tomography inspections and recommend an inspection protocol, to include an inspection interval that would apply alike to Cone Beam Computed Tomography and panoramic radiographic machines.

BOARD RECOMMENDATION: Received after the September Board of Trustees meeting.

Resolution No. 91 New

Report: N/A Date Submitted: October 2017

Submitted By: Eleventh Trustee District

Reference Committee: B (Dental Benefits, Practice and Related Matters)

Total Net Financial Implication: \$70,000 Net Dues Impact: \$0.66

Amount One-time	Amount On-going	FTE	0
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ADA Strategic Plan Objective: Membership-Obj. 2: Market share will equal 70%

How does this resolution increase member value: Assists member dentists to manage risk by improving quality of documentation? See Background

DEVELOPMENT OF SAMPLE CLINICAL CHART ENTRIES TO INCREASE QUALITY IN DOCUMENTATION

The following resolution was adopted by the Eleventh Trustee District and transmitted on October 17, 2016, by Dr. Laura Williams, chair, Eleventh District Caucus.

Background: Descriptive, supportive, and accurate documentation of procedures and care within dental charts is essential in protecting dentists in the event of litigation or an audit. Inadequate documentation of diagnosis, clinical findings, and procedures performed can result in legal cases which are difficult to defend, and in the case of a Medicaid audit, large recovery payments by the dentist to the state Medicaid program. In the case of Medicaid audits, it is currently Medicaid payers and contracted auditors who establish the parameters and best practices for the dental profession on satisfactory and complete documentation. Medicaid auditors with no dental background often complete critiques and evaluation of dentist's chart entries during an audit. At times, this results in inaccurate, and even unjust, assessment of the quality of a dentist's documentation. Exasperating the issue, some dentists have not received adequate instruction on documentation that reduces risk-exposure and increases Medicaid compliance.

A major benefit to the profession, and to ADA members, would be the development of sample clinical chart entries for use by dentists to increase and support quality documentation in dental records. A clinical chart entry for a Medicaid insured patient must always include a justification and supporting documentation of why the intervention was “medically necessary”. This is a puzzling and unfamiliar term for dentists, but correlates to the diagnosis or clinical rationale, and includes a description of the clinical findings and how they were determined (i.e. radiograph, visual, tactile). Examples of sample chart entries that support medical necessity include the following:

Child Fluoride Varnish Application

Assessment: Reviewed medical history – no changes. Child at high risk for dental caries according the American Academy of Pediatric Dentistry Caries Risk Assessment (CRA) Tool. Completed CRA Tool and scanned into chart. Child presents with factors such as heavy plaque, acute gingivitis, past history of full mouth rehabilitation under general anesthesia, socio-economical and demographic risk factors.

Treatment: Explained risks, benefits, and alternatives to caregiver. Consent acquired and scanned into chart. Dried teeth with gauze, applied 5% sodium fluoride varnish with bend-a-brush, child rinsed

1 mouth with water. Instructed caregiver no sticky or hot foods, and no brushing until tomorrow
2 morning. No complications with treatment.

3 Adult Limited Exam and Restorative Treatment Planning

4 Patient presents for limited exam. Reviewed medical history – no changes.

5 **Subjective:** Chief complaint: "I feel a rough spot on the top of my tooth. (#18)" – no pain.

6 **Objective:** Caries cavitated and into dentin in central pit of #18 detected visibly and additionally
7 detected with explorer. One bitewing radiograph prescribed by dentist and taken. Caries is not visible
8 on radiograph, only visually detectable and by explorer.

9 **Assessment:** #18 occlusal surface caries, *pit and fissure origin, advanced extent, active* (based on
10 ADA Caries Classification System)

11 **Plan:** #18 occlusal composite treatment planned

12 The development of sample clinical chart entries such as these by the American Dental Association,
13 instead of outside third parties, promotes the unbiased and accurate assessment of dentist
14 documentation as it is the profession articulating the best practices in documentation instead of outside
15 organizations with little to no knowledge on such topics.

16 Accordingly, the Eleventh District submits the following resolution for consideration by the 2016 ADA
17 House of Delegates:

18 **Resolution**

19 **91. Resolved,** that the appropriate ADA agencies develop a resource guide which contains
20 sample chart entries for the 30 most common procedure codes and additional guidance on best
21 practices which relates to documentation which supports Medicaid Compliance for use by dentist
22 members, and be it further

23 **Resolved,** that this benefit be maintained within the Members Only section of ADA.org, and be it
24 further

25 **Resolved,** that this resource be shared with auditing units of state Medicaid programs so as to
26 inform auditors of the best practices of clinical documentation.

Dental Education, Science and Related Matters

Resolution No. 13 NewReport: N/A Date Submitted: July 2016Submitted By: Council on Scientific AffairsReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Membership-Obj. 1: Leaders and Advocates in Oral Health

How does this resolution increase member value: See Background

COUNCIL ON SCIENTIFIC AFFAIRS: RESCISSION OF ADA POLICY ON DENTAL PRODUCT LABELING

Background: In accordance with House Resolution 170H-2012, reaffirming existing ADA Policy the Council on Scientific Affairs reviews Association policies on a broad range of scientific issues every five years, and proposes policy revisions or other recommendations as appropriate.

Review of ADA Policy on Dental Product Labeling: The Council recommends rescission of the ADA policy on Dental Product Labeling (*Trans.* 1974:704; 1999:975), which reads as follows:

93H-1999. Resolved, that the ADA Seal of Acceptance Program requires that, where indicated, manufacturers label ADA-Accepted products with the dates of manufacture, expiration dates and appropriate information on the possible effects of temperature and humidity.

The Council recommends that this ADA policy statement be rescinded because it is out-of-date. At present, the ADA Seal of Acceptance Program no longer requires that Accepted products present information on dates of manufacture, expiration dates or information on possible effects of temperature and humidity. The Seal of Acceptance Program's current requirements for Accepted product labeling, package inserts and advertising are presented online in Section VI at: <http://www.ada.org/en/science-research/ada-seal-of-acceptance/how-to-earn-the-ada-seal/general-criteria-for-acceptance> These requirements are specific only to the Seal of Acceptance Program for over-the-counter oral health products, and for this reason, they are neither applicable nor appropriate to be maintained as an Association-wide policy statement.

Regulatory agencies and some dental standards indicate appropriate labeling requirements for specific products. The U.S. Food and Drug Administration (FDA) is involved with issuing over-the-counter dental product labeling requirements (e.g., the FDA's current requirements for anti-caries drug products are available at: <http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/cfrsearch.cfm?fr=355.50>).

As additional background, the Dental Product Labeling policy adopted in 1999 applied primarily to professional dental products, specifically for "dental materials, devices and therapeutic agents," as noted in the original resolution adopted in 1974. These three product types are professional product categories, and the ADA Seal Program for professional products was terminated in 2007. At present, the Council presents information or evaluations of dental materials, devices or therapeutics agents, when appropriate, through the *ADA Professional Product Review* newsletter.

The following resolution is presented for House consideration.

1 **Resolution:**

2 **13. Resolved**, that the ADA policy Dental Product Labeling (*Trans.*1974:704; 1999:975) be
3 rescinded.

4

5 **BOARD RECOMMENDATION: Vote Yes.**

6 **BOARD VOTE: UNANIMOUS* (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO**
7 **BOARD DISCUSSION)**

8 ***Dr. Gamba was not in attendance.**

Resolution No. 14 NewReport: N/A Date Submitted: July 2016Submitted By: Council on Scientific AffairsReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: Amount One-time Amount On-going FTE 0

ADA Strategic Plan Objective: Membership-Obj. 1: Leaders and Advocates in Oral Health

How does this resolution increase member value: See Background

**COUNCIL ON SCIENTIFIC AFFAIRS: RESCISSION OF THE POLICY, WORLD MEDICAL
ASSOCIATION DECLARATION OF HELSINKI--ETHICAL PRINCIPLES FOR MEDICAL RESEARCH
INVOLVING HUMAN SUBJECTS—2004**

Background: In accordance with House Resolution 170H-2012, reaffirming existing ADA Policy, the Council reviews Association policies on a broad range of scientific issues every five years, and proposes policy revisions or other recommendations as appropriate.

Review of ADA Policy on the World Medical Association Declaration of Helsinki--Ethical Principles for Medical Research Involving Human Subjects—2004: The Council recommends rescission of the ADA policy on the World Medical Association (WMA) Declaration of Helsinki--Ethical Principles for Medical Research Involving Human Subjects—2004 (*Trans.* 2006:316), which is presented in Appendix 1. The rationales for rescinding this policy include:

- The 2006 ADA policy simply re-states a policy statement that has been developed and amended several times by another organization (the World Medical Association, or WMA). While the WMA is an international organization that works in partnership with the World Health Organization and in collaboration with numerous national medical associations/agencies (<http://www.wma.net/en/60about/index.html>), the ADA does not currently participate in WMA deliberations or policy-formation processes, nor does the ADA vote on any WMA-coordinated revisions of the Declaration of Helsinki.
- The 2006 ADA policy does not include any approved position, pronouncement or “stance” from the Association toward the WMA’s Declaration of Helsinki (e.g., the ADA supports/endorsees); it simply presents the WMA policy statement verbatim in the language adopted by WMA. Given this, a rationale could be presented that this ADA policy does not present any ADA position or any expression of Association policy.
- The Declaration of Helsinki is a “living,” current document, and it has since been revised twice by the WMA (in 2008 and 2013). Therefore, the current ADA policy (adopted in 2006) on the Declaration of Helsinki endorses an obsolete version of the statement. Accordingly, the 2006 ADA policy is outdated and no longer current. The WMA website also notes that older versions of the Declaration of Helsinki “should only be cited for historical purposes.”

In addition, this is an area that is well controlled by other processes. Clinical research studies, including research conducted by the ADA, are overseen by independent institutional review boards (IRBs), which are charged with ensuring protection for human subjects in clinical research. The ADA’s IRB procedures make direct reference to “45 CFR 46,” which stands for Title 45, Section 46 of the Code of Federal

Regulations, which addresses the protection of human subjects in research: <http://www.hhs.gov/ohrp/regulations-and-policy/regulations/45-cfr-46/>. As noted on the [Department of Health and Human Services website](#), the aforementioned section of the Code of Federal Regulations is “heavily influenced” by the 1979 Belmont Report, which presents ethical principles and guidelines for the protection of human subjects of research.

The Council’s recommendation to rescind this ADA policy also recognizes that other ADA programs should be able to independently consider other codes of ethical principles if they are considered more appropriate or suitable to their respective areas. Because the WMA Declaration of Helsinki highlights ethical principles for the conduct and publication of medical research, the Council forwarded its recommendation to rescind this policy statement to the Council on Ethics, Bylaws and Judicial Affairs (CEBJA) for further consideration. CEBJA expressed support for CSA’s proposal to rescind the 2006 ADA policy.

Conclusion: The Council on Scientific Affairs (CSA) considers the WMA Declaration of Helsinki to be a useful and well-recognized international statement addressing research ethics and the protection of human subjects. However, the Council recommends that the 2006 ADA policy pertaining to the Declaration of Helsinki should be rescinded because the Association’s policy: (a) directly expresses the policy and position of a medical health association (i.e., WMA) whose deliberations the ADA has not participated in; and (b) the ADA policy does not reflect an ADA-wide position other than restating the policy of the WMA’s Declaration of Helsinki.

In closing, the Council believes that all institutions and individuals conducting clinical research with human subjects should implement an ongoing process to assure that all investigators and relevant staff are appropriately educated in the ethical principles and relevant government regulations related to human subjects research. Ethical principles and guidelines for the protection of human subjects in research are contained in documents such as the WMA Declaration and the Belmont Report. While the CSA agrees overall with the principles and guidelines contained in the WMA Declaration, the CSA does not feel that the WMA declarations should be included in ADA *Current Policies*.

The following resolution is presented for House consideration.

Resolution

14. Resolved, that the ADA policy, World Medical Association Declaration of Helsinki--Ethical Principles for Medical Research Involving Human Subjects—2004 (*Trans.* 2006:316), be rescinded.

BOARD RECOMMENDATION: Vote Yes.

BOARD VOTE: UNANIMOUS* (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO BOARD DISCUSSION)

***Dr. Gamba was not in attendance.**

APPENDIX 1

World Medical Association Declaration of Helsinki--Ethical Principles for Medical Research Involving Human Subjects

Adopted by the 18th WMA General Assembly, Helsinki, Finland, June 1964, and amended by the 29th WMA General Assembly, Tokyo, Japan, October 1975; 35th WMA General Assembly, Venice, Italy, October 1983; 41st WMA General Assembly, Hong Kong, September 1989; 48th WMA General Assembly, Somerset West, Republic of South Africa, October 1996; and the 52nd WMA General Assembly, Edinburgh, Scotland, October 2000.

Note of Clarification on Paragraph 29 added by the WMA General Assembly, Washington 2002
Note of Clarification on Paragraph 30 added by the WMA General Assembly, Tokyo 2004

A. INTRODUCTION

1. The World Medical Association has developed the Declaration of Helsinki as a statement of ethical principles to provide guidance to physicians and other participants in medical research involving human subjects. Medical research involving human subjects includes research on identifiable human material or identifiable data.
2. It is the duty of the physician to promote and safeguard the health of the people. The physician's knowledge and conscience are dedicated to the fulfillment of this duty.
3. The Declaration of Geneva of the World Medical Association binds the physician with the words, "The health of my patient will be my first consideration," and the International Code of Medical Ethics declares that, "A physician shall act only in the patient's interest when providing medical care which might have the effect of weakening the physical and mental condition of the patient."
4. Medical progress is based on research which ultimately must rest in part on experimentation involving human subjects.
5. In medical research on human subjects, considerations related to the well-being of the human subject should take precedence over the interests of science and society.
6. The primary purpose of medical research involving human subjects is to improve prophylactic, diagnostic and therapeutic procedures and the understanding of the aetiology and pathogenesis of disease. Even the best proven prophylactic, diagnostic, and therapeutic methods must continuously be challenged through research for their effectiveness, efficiency, accessibility and quality.
7. In current medical practice and in medical research, most prophylactic, diagnostic and therapeutic procedures involve risks and burdens.
8. Medical research is subject to ethical standards that promote respect for all human beings and protect their health and rights. Some research populations are vulnerable and need special protection. The particular needs of the economically and medically disadvantaged must be recognized. Special attention is also required for those who cannot give or refuse consent for themselves, for those who may be subject to giving

consent under duress, for those who will not benefit personally from the research and for those for whom the research is combined with care.

9. Research Investigators should be aware of the ethical, legal and regulatory requirements for research on human subjects in their own countries as well as applicable international requirements. No national ethical, legal or regulatory requirement should be allowed to reduce or eliminate any of the protections for human subjects set forth in this Declaration.

B. BASIC PRINCIPLES FOR ALL MEDICAL RESEARCH

10. It is the duty of the physician in medical research to protect the life, health, privacy, and dignity of the human subject.
11. Medical research involving human subjects must conform to generally accepted scientific principles, be based on a thorough knowledge of the scientific literature, other relevant sources of information, and on adequate laboratory and, where appropriate, animal experimentation.
12. Appropriate caution must be exercised in the conduct of research which may affect the environment, and the welfare of animals used for research must be respected.
13. The design and performance of each experimental procedure involving human subjects should be clearly formulated in an experimental protocol. This protocol should be submitted for consideration, comment, guidance, and where appropriate, approval to a specially appointed ethical review committee, which must be independent of the investigator, the sponsor or any other kind of undue influence. This independent committee should be in conformity with the laws and regulations of the country in which the research experiment is performed. The committee has the right to monitor ongoing trials. The researcher has the obligation to provide monitoring information to the committee, especially any serious adverse events. The researcher should also submit to the committee, for review, information regarding funding, sponsors, institutional affiliations, other potential conflicts of interest and incentives for subjects.
14. The research protocol should always contain a statement of the ethical considerations involved and should indicate that there is compliance with the principles enunciated in this Declaration.
15. Medical research involving human subjects should be conducted only by scientifically qualified persons and under the supervision of a clinically competent medical person. The responsibility for the human subject must always rest with a medically qualified person and never rest on the subject of the research, even though the subject has given consent.
16. Every medical research project involving human subjects should be preceded by careful assessment of predictable risks and burdens in comparison with foreseeable benefits to the subject or to others. This does not preclude the participation of healthy volunteers in medical research. The design of all studies should be publicly available.
17. Physicians should abstain from engaging in research projects involving human subjects unless they are confident that the risks involved have been adequately assessed and can be satisfactorily managed. Physicians should cease any investigation if the risks are found to outweigh the potential benefits or if there is conclusive proof of positive and

beneficial results.

18. Medical research involving human subjects should only be conducted if the importance of the objective outweighs the inherent risks and burdens to the subject. This is especially important when the human subjects are healthy volunteers.
19. Medical research is only justified if there is a reasonable likelihood that the populations in which the research is carried out stand to benefit from the results of the research.
20. The subjects must be volunteers and informed participants in the research project.
21. The right of research subjects to safeguard their integrity must always be respected. Every precaution should be taken to respect the privacy of the subject, the confidentiality of the patient's information and to minimize the impact of the study on the subject's physical and mental integrity and on the personality of the subject.
22. In any research on human beings, each potential subject must be adequately informed of the aims, methods, sources of funding, any possible conflicts of interest, institutional affiliations of the researcher, the anticipated benefits and potential risks of the study and the discomfort it may entail. The subject should be informed of the right to abstain from participation in the study or to withdraw consent to participate at any time without reprisal. After ensuring that the subject has understood the information, the physician should then obtain the subject's freely-given informed consent, preferably in writing. If the consent cannot be obtained in writing, the non-written consent must be formally documented and witnessed.
23. When obtaining informed consent for the research project the physician should be particularly cautious if the subject is in a dependent relationship with the physician or may consent under duress. In that case the informed consent should be obtained by a well-informed physician who is not engaged in the investigation and who is completely independent of this relationship.
24. For a research subject who is legally incompetent, physically or mentally incapable of giving consent or is a legally incompetent minor, the investigator must obtain informed consent from the legally authorized representative in accordance with applicable law. These groups should not be included in research unless the research is necessary to promote the health of the population represented and this research cannot instead be performed on legally competent persons.
25. When a subject deemed legally incompetent, such as a minor child, is able to give assent to decisions about participation in research, the investigator must obtain that assent in addition to the consent of the legally authorized representative.
26. Research on individuals from whom it is not possible to obtain consent, including proxy or advance consent, should be done only if the physical/mental condition that prevents obtaining informed consent is a necessary characteristic of the research population. The specific reasons for involving research subjects with a condition that renders them unable to give informed consent should be stated in the experimental protocol for consideration and approval of the review committee. The protocol should state that consent to remain in the research should be obtained as soon as possible from the individual or a legally authorized surrogate.
27. Both authors and publishers have ethical obligations. In publication of the results of

research, the investigators are obliged to preserve the accuracy of the results. Negative as well as positive results should be published or otherwise publicly available. Sources of funding, institutional affiliations and any possible conflicts of interest should be declared in the publication. Reports of experimentation not in accordance with the principles laid down in this Declaration should not be accepted for publication.

C. ADDITIONAL PRINCIPLES FOR MEDICAL RESEARCH COMBINED WITH MEDICAL CARE

28. The physician may combine medical research with medical care, only to the extent that the research is justified by its potential prophylactic, diagnostic or therapeutic value. When medical research is combined with medical care, additional standards apply to protect the patients who are research subjects.
29. The benefits, risks, burdens and effectiveness of a new method should be tested against those of the best current prophylactic, diagnostic, and therapeutic methods. This does not exclude the use of placebo, or no treatment, in studies where no proven prophylactic, diagnostic or therapeutic method exists. [See footnote](#)
30. At the conclusion of the study, every patient entered into the study should be assured of access to the best proven prophylactic, diagnostic and therapeutic methods identified by the study. [See footnote](#)
31. The physician should fully inform the patient which aspects of the care are related to the research. The refusal of a patient to participate in a study must never interfere with the patient-physician relationship.
32. In the treatment of a patient, where proven prophylactic, diagnostic and therapeutic methods do not exist or have been ineffective, the physician, with informed consent from the patient, must be free to use unproven or new prophylactic, diagnostic and therapeutic measures, if in the physician's judgement it offers hope of saving life, re-establishing health or alleviating suffering. Where possible, these measures should be made the object of research, designed to evaluate their safety and efficacy. In all cases, new information should be recorded and, where appropriate, published. The other relevant guidelines of this Declaration should be followed.

Note: Note of clarification on paragraph 29 of the WMA Declaration of Helsinki

The WMA hereby reaffirms its position that extreme care must be taken in making use of a placebo-controlled trial and that in general this methodology should only be used in the absence of existing proven therapy. However, a placebo-controlled trial may be ethically acceptable, even if proven therapy is available, under the following circumstances:

- Where for compelling and scientifically sound methodological reasons its use is necessary to determine the efficacy or safety of a prophylactic, diagnostic or therapeutic method; or
- Where a prophylactic, diagnostic or therapeutic method is being investigated for a minor condition and

the patients who receive placebo will not be subject to any additional risk of serious or irreversible harm.

All other provisions of the Declaration of Helsinki must be adhered to, especially the need for appropriate ethical and scientific review.

Note: Note of clarification on paragraph 30 of the WMA Declaration of Helsinki

The WMA hereby reaffirms its position that it is necessary during the study planning process to identify post-trial access by study participants to prophylactic, diagnostic and therapeutic procedures identified as beneficial in the study or access to other appropriate care. Post-trial access arrangements or other care must be described in the study protocol so the ethical review committee may consider such arrangements during its review.

Resolution No. 19 NewReport: N/A Date Submitted: August 2016Submitted By: Council on Dental Education and LicensureReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: Amount One-time Amount On-going FTE 0

ADA Strategic Plan Objective: Organizational Capacity-Obj. 6: Role and responsibility of each element of the tripartite clearly defined and agreed upon

How does this resolution increase member value: See Background

1 RECOGNITION OF OPERATIVE DENTISTRY AS AN INTEREST AREA IN GENERAL DENTISTRY

2
3 **Background:** In March 2014, the Council acknowledged receipt of an Application for Recognition as an
4 Interest Area in General Dentistry from the Academy of Operative Dentistry (AOD) (*Reports* 2014:101).
5 Using the “*Criteria for Recognition of Interest Areas in General Dentistry*,” the Council followed its
6 established review process, as reported to the 2013 ADA House of Delegates (*Reports* 2013:56), and
7 conducted an open hearing on the application at the ADA 2014 Meeting. The Council also invited
8 comment from the communities of interest regarding the application via various e-publications to dental
9 leaders and the ADA News and posted the application and comments received on ADA.org [Operative](#)
10 [Dentistry Application and Comments Received](#).
11

12 The Council’s Recognition of Dental Specialties and Interest Areas in General Dentistry Committee
13 (Recognition Committee) and the Council considered the application and comments from the
14 communities of interest at their spring 2015 meetings. The Council reported its preliminary findings to the
15 Academy of Operative Dentistry and the 2015 House of Delegates (*Reports* 2015:41), noting that Criteria
16 1, 2 and 5 did not appear to be met. Subsequently, the Academy notified the Council of its intent to
17 submit a response to the Council’s preliminary report on the application and requested an appearance
18 before the Council at its December 2015 meeting.
19

20 Following the AOD representatives appearance before the Council on December 11, 2015, and further
21 consideration of the Recognition Committee’s report, AOD application, community of interest comments,
22 and AOD response, the Council concluded that:
23

- 24 • The AOD has demonstrated the existence of a well-defined body of established evidence-based
25 scientific and clinical dental knowledge underlying operative dentistry - knowledge that is in large
26 part distinct from, or more detailed than, that of other areas of general dentistry education and
27 practice and any of the ADA recognized specialties.
28
- 29 • The AOD has demonstrated that operative dentistry is a body of knowledge sufficient to educate
30 individuals in a distinct advanced education area of general dentistry, not merely one or more
31 techniques.
32
33

- The AOD has demonstrated the existence of established advanced educational programs with structured operative dentistry curricula, qualified faculty and enrolled individuals for which accreditation by the Commission on Dental Accreditation can be a viable method of quality assurance.
- The AOD has demonstrated operative dentistry education programs are the equivalent of at least one 12-month full-time academic year in length. The programs must be academic programs sponsored by an institution accredited by an agency recognized by the United States Department of Education or accredited by the Joint Commission or its equivalent rather than a series of continuing education experiences.
- The AOD has demonstrated that competence of the graduates of the operative dentistry advanced education programs is important to the health care of the general public.

The detailed report on the AOD Application for Recognition of Operative Dentistry as an Interest Area in General Dentistry is provided as Appendix 1. In summary, the Council has concluded that the AOD application has met the *Criteria for Recognition of Interest Areas in General Dentistry*. Accordingly, the Council presents the following resolution:

Resolution

19. Resolved, that operative dentistry is an interest area in general dentistry recognized by the American Dental Association and sponsored by the Academy of Operative Dentistry.

BOARD COMMENT: The Board supports Resolution 19, believing that operative dentistry should be recognized by the Association as a general dentistry interest area. The Board agrees with the Council that the Academy of Operative Dentistry has met the *ADA Criteria for Recognition of Interest Areas in General Dentistry*. Advanced training in operative dentistry is more detailed than predoctoral operative dentistry education. Those individuals who complete these advanced education programs (ranging in 2-6 years in length) are responsible for the majority of scientific research and knowledge in the areas of cariology and advanced scientific clinical training in restorative materials and biomaterials. Graduates of operative dentistry programs play a vital role for the dental profession in dental education, dental research and military settings.

BOARD RECOMMENDATION: Vote Yes.

Vote: Resolution 19

ASAI	Yes	COLE	Yes	GEHANI	Yes	ROBERTS	Yes
BITTER	Yes	CROWLEY	Yes	JEFFERS	Yes	ROBINSON	Yes
BLACK	Yes	FAIR	Yes	KLEMMEDSON	No	STEVENS	Yes
BUCKENHEIMER	Yes	FISCH	Yes	KWASNY	Yes	ZENK	Yes
COHLMIA	Yes	GAMBA	Absent	MARRON-TARRAZZI	Yes	ZUST	Yes

APPENDIX 1

Consideration of the Academy of Operative Dentistry's Application for Recognition as an Interest Area in General Dentistry: The Council received an application for recognition of operative dentistry as an interest area in general dentistry from the Academy of Operative Dentistry (AOD) in February of 2014. In accord with the Recognition Review Process and Timeline, a call for comment from individuals and organizations was sent via an e-mail blast to approximately 1150 individuals/organizations on July 15, 2014. Seven written comments were submitted to the Director of the Council by October 20, 2014 and can be found at: [Written Comments Received](#)

An open hearing was conducted on October 10, 2014 at the ADA 2014 Meeting to receive oral testimony from the communities of interest; no comments were received.

In April 2015, the Council considered the Recognition Committee's analysis of the AOD's application and discussed the *Criteria for Recognition of Interest Areas in General Dentistry* relative to the narrative and documentation presented in the application for recognition. The Council agreed with the Recognition Committee, concluding that the application failed to demonstrate compliance with all requirements as specified in the Association's *Criteria for Recognition of Interest Areas in General Dentistry*. Specifically, Criteria 1, 2 and 5 did not appear to be met.

In a letter dated May 8, 2015, CDEL Chair, Dr. James M. Boyle, III, notified the AOD of its conclusions and reminded the Academy of its right to respond to the Council's report and request a special appearance before the Council at its next meeting scheduled for December 10-11, 2015.

The AOD submitted its response to Dr. Boyle on September 25, 2015. The Academy's request to appear before the Council at its December 2015 meeting was granted.

Prior to the December 2015 Council meeting, the Council's Committee on Recognition reviewed the additional information submitted by the Academy, concluding that in its opinion, Criteria 1, 2 and 5 remained unmet. Following careful consideration of the information presented by representatives of the AOD to CDEL members on December 11, the Council concluded that Criteria 1, 2 and 5 have been met. A summary of the Committee's and Council's conclusions follow.

Criterion 1: The existence of a well-defined body of established evidence-based scientific and clinical dental knowledge underlying the general dentistry area - knowledge that is in large part distinct from, or more detailed than, that of other areas of general dentistry education and practice and any of the ADA recognized specialties

Elements to be addressed:

- **Definition and scope of the general dentistry area**
- **Educational goals and objectives of the general dentistry area**
- **Competency and proficiency statements for the general dentistry education area**
- **Description of how scientific dental knowledge in the area is substantive and distinct from other general dentistry areas**

Recognition Committee Discussion of Criterion 1: In reviewing the AOD's September response, the Committee continued to believe that the phrase "*in large part distinct from, or more detailed than, that of other areas of general dentistry education and practice*" was not documented. Additionally, the Committee determined that documentation presented did not sufficiently describe how scientific dental knowledge in the area is substantive and distinct from other general dentistry areas, such as predoctoral dental education. The Committee concluded that Criterion 1 is not met.

CDEL Discussion of Criterion 1: In reviewing the AOD's September response, the Recognition Committee's report, as well as the information presented in-person by AOD representatives, the Council concluded that Criterion 1 is met. The Council determined that AOD has demonstrated that advanced operative dentistry training is more detailed than other areas of general dentistry education and practice in:

- Advanced education in cariology beyond the DDS level
- Comprehensive management of high caries risk cases
- Dental adhesion research advance scientific and clinical training in restorative and other biomaterials
- Advanced esthetic treatment planning of complex cases requiring a multidisciplinary approach
- Development and clinical evaluation of restorative materials and other biomaterials
- Advanced technology in restorative dentistry
- Advanced training in areas of optical scanning and milling of dental restoration
- Comprehensive full-mouth fixed reconstruction and occlusion

Criterion 2: The body of knowledge is sufficient to educate individuals in a distinct advanced education area of general dentistry, not merely one or more techniques.

Elements to be addressed:

- Identification of distinct components of biomedical, behavioral and clinical science in the advanced education area
- Description of why this area of knowledge is a distinct education area of general dentistry, rather than a series of just one or more techniques
- Documentation demonstrating that the body of knowledge is unique and distinct from that in other education areas accredited by the Commission on Dental Accreditation
- Documentation of the complexity of the body of knowledge of the general dentistry area by identifying specific advanced techniques and procedures, representative samples of curricula from existing programs, textbooks and journals

Recognition Committee Discussion of Criterion 2: The Committee determined that AOD's response does not document that the body of knowledge described in the application is a distinct education area in general dentistry, but rather a series of one or more techniques that are also included in predoctoral dental education, advanced general dentistry education and general practice residency educational programs. The Committee continued to believe that the referenced journals/texts do not identify specific advanced techniques and procedures unique to the proposed general dentistry interest area. The Committee concluded that Criterion 2 is not met.

CDEL Discussion of Criterion 2: In reviewing the AOD's September 2015 response, the Recognition Committee's report, as well as the information presented in-person by AOD representatives, the Council concluded that Criterion 2 is met. The Council determined that AOD has demonstrated that advanced operative dentistry training is more detailed than other areas of general dentistry education and practice. For example, the Council determined that operative dentistry is responsible for the majority of scientific research and knowledge in the area of dental adhesion and cariology, as well as the topics identified in the Council's review of Criterion 1.

Criterion 3: The existence of established advanced educational programs with structured curricula, qualified faculty and enrolled individuals for which accreditation by the Commission on Dental Accreditation can be a viable method of quality assurance.

Elements to be addressed:

- Description of the historical development and evolution of educational programs in the area of advanced training in general dentistry

- **A listing of the current operational programs in the advanced general dentistry training area, identifying for each, the:**
 - a. **Sponsoring institution;**
 - b. **Name and qualifications of the program director;**
 - c. **number of full-time and part-time faculty (define part-time for each program);**
 - d. **Curriculum (course outlines, student competencies, class schedules);**
 - e. **Outcomes assessment method;**
 - f. **Minimum length of the program;**
 - g. **Certificate and/or degree awarded upon completion;**
 - h. **Number of enrolled individuals per year for at least the past five years*; and**
 - i. **Number of graduates per year for at least the past five years.***

***If the established education programs have been in existence less than five years, provide information since their founding.**
- **Documentation on how many programs in the education area would seek voluntary accreditation review, if available.**

Recognition Committee Discussion of Criterion 3: The AOD application documented that nine (9) residency programs in operative/restorative are sponsored by U.S. dental schools. The nine programs have structured curricula, qualified faculty, enrollees and graduates. The application states that five of the seven programs have indicated an interest in pursuing accreditation, if an accreditation program were to be established. The Committee concluded that Criterion 3 is met.

CDEL Discussion of Criterion 3: The Council concurred with the Recognition Committee's conclusion; Criterion 3 is met. The Council noted that the following nine educational institutions sponsor operative dentistry programs: 1) Boston University; 2) Indiana University; 3) Nova Southeastern University; 4) University of California at Los Angeles; 5) University of Iowa; 6) University of Michigan; 7) Tufts University; 8) University of North Carolina; and 9) University of Southern California. These programs are either 2 or 3 years in length and award either a degree (MS/MSD) or a certificate. There were approximately 122 residents enrolled in these programs in 2015. The Council noted that in the past five years, these programs have awarded masters degrees or certificates to 88 graduates.

Criterion 4: The education programs are the equivalent of at least one 12-month full-time academic year in length. The programs must be academic programs sponsored by an institution accredited by an agency recognized by the United States Department of Education or accredited by the Joint Commission or its equivalent rather than a series of continuing education experiences.

Elements to be addressed:

- **Evidence of the minimum length of the program for full-time students**
- **Evidence that a certificate and/or degree is awarded upon completion of the program**
- **Programs' recruitment materials (e.g., bulletin, catalogue)**
- **Other evidence that the programs are bona fide higher education experiences, rather than a series of continuing education courses (e.g., academic calendars, schedule of classes, and syllabi that address scope, depth and complexity of the higher education experience, formal approval or acknowledgment by the parent institution that the courses or curricula in the education area meet the institution's academic requirements for advanced education)**

Recognition Committee Discussion of Criterion 4: The Committee determined that the AOD application demonstrated that of the residency programs identified in the application, one has a 1 or 2 year option and the remaining programs range from 2 to 6 years in length. The programs are sponsored by U.S. dental schools, all of which are sponsored by accredited universities. The Committee concluded that Criterion 4 is met.

CDEL Discussion of Criterion 4: The Council concurred with the Recognition Committee's conclusion; Criterion 4 is met.

Criterion 5: The competence of the graduates of the advanced education programs is important to the health care of the general public.

Elements to be addressed:

- Description of the need for appropriately trained individuals in the general dentistry area to ensure quality health care for the public
- Description of current and emerging trends in the general dentistry education area
- Documentation that dental health care professionals currently provide health care services in the identified area
- Evidence that the area of knowledge is important and significant to patient care and dentistry
- **Documentation that the general dentistry programs comply with the ADA Principles of Ethics and Code of Professional Conduct, as well as state and federal regulations**

Recognition Committee Discussion of Criterion 5: The Committee continued to agree that, due to the nature of how the criterion is written, bulleted elements 3-5 under the Criterion 5 have been met. Dental health care professionals in operative dentistry currently provide health care services. It was also believed that the programs sponsored by U.S. dental schools comply with the ADA *Principles of Ethics and Code of Professional Conduct*, as well as state and federal regulations. However, the Committee did not believe that bulleted elements 1 and 2 are met. The body of knowledge described in the application was not a distinct education area in general dentistry, but rather a series of one or more techniques that are currently included in predoctoral dental education, advanced general dentistry education and/or general practice residency educational programs. The Committee concluded that Criterion # 5 is not met.

CDEL Discussion of Criterion 5: In reviewing the AOD's September response, the Recognition Committee's report, and in particular the information presented in-person by the AOD representatives, the Council concluded that all of the elements noted in Criterion 5 are met. The Council noted that, historically, operative dentistry has served the profession in the areas of CAMBRA, CAD-CAM dentistry, adhesive dentistry, occlusion, and TMD/TMJ treatment as related to comprehensive restoration of the dentition. The Academy of Operative Dentistry has played an important role in formalizing information in these areas and providing an avenue for dissemination of these emerging trends to be incorporated into educational programming. The Council determined that the graduates of advanced training programs in operative dentistry play a vital role for the dental profession in military settings and dental education programs and are therefore important to the public's health.

CDEL Conclusion and Recommendation: Following extensive review and careful deliberations, the Council has concluded that the AOD application requesting recognition of operative dentistry as an interest area in general dentistry has met the *Criteria for Recognition of Interest Areas in General Dentistry*. Accordingly, the Council urges the House of Delegates to adopt the following resolution:

Resolved, that operative dentistry is an interest area in general dentistry recognized by the American Dental Association and sponsored by the Academy of Operative Dentistry.

Resolution No. 19S-1 Citation for Original Resolution: PINK: 4111Submitted By: Fourteenth Trustee District Date Submitted: October 23, 2016Substitute ☒Amendment ☐Reference Committee Report On: Committee C (Dental Education, Science and Related Matters)

Financial Implications (if different from original resolution):

\$

SUBSTITUTE FOR RESOLUTION 19: RECOGNITION OF OPERATIVE DENTISTRY AS AN INTEREST AREA IN GENERAL DENTISTRY

The following substitute for Resolution 19 (Worksheet:4011) was adopted by the Fourteenth Trustee District and submitted on October 23, 2016 by Dr. Daniel Klemmedson, Trustee, Fourteenth District.

Background: "Operative dentistry" resides within the center of the wheelhouse of "general dentistry." Current specialties reside on the periphery of the central or "core" competencies present in all general dental practice. Other dental workforce participants (dental hygienists, ADHP, dental therapists) are grouping on the edge of the general dental practice sphere of influence and are seeking to move inside. Recognition of advanced education, research or "interest" in distinct areas of general dentistry deserves recognition, but these specific areas, or components of that recognition should also be closer to the periphery so as to not diminish the absolute strength of dentistry – a broad, well trained general dentistry based dental home. Perception becomes reality in the eyes of the public we serve when special distinctions are established. Those perceptions begin with a name that soon becomes a "brand." The recognition desired by the Academy of Operative Dentistry for an interest area with proposed outcomes of enhancing advanced operative dentistry education opportunities and research can be realized with more appropriate naming. An interest area that more accurately acknowledges the specific areas of expertise and focus serves both the profession and the public. An example of a possible name would be "operative dentistry education, research and technique development."

Resolution

19S-1. Resolved, that operative dentistry is an interest area in general dentistry recognized by the American Dental Association and sponsored by the Academy of Operative Dentistry, and be it further

Resolved that the Council on Dental Education and Licensure work with the Academy of Operative Dentistry to develop a name for a deserved interest area that more closely represents the expertise and focus described in the application.

Resolution No. 20 NewReport: N/A Date Submitted: August 2016Submitted By: Council on Dental Education and LicensureReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Organizational Capacity-Obj. 6: Role and responsibility of each element of the tripartite clearly defined and agreed upon

How does this resolution increase member value: See Background

1 **RESCISSION OF THE POLICY, URGING THE COMMISSION ON DENTAL ACCREDITATION TO** 2 **COMMUNICATE WITH LOCAL COMMUNITIES OF INTEREST**

3
4 **Background:** In accord with Resolution 170H-2012, Rescinding Existing ADA Policy, the Council on
5 Dental Education and Licensure recommends that the policy, Urging the Commission on Dental
6 Accreditation to Communicate With Local Communities of Interest (*Trans.*2003:367; 2010:577) be
7 rescinded. This policy was a request in 2003 and is unnecessary today. As an accreditation agency
8 recognized by the United States Department of Education (USDE), the Commission on Dental
9 Accreditation is required to communicate with its communities of interest. CODA must announce its
10 decisions to grant or renew accreditation to the USDE, the appropriate state licensing board or other
11 authorizing agency, other accrediting agencies, and the public (e.g., prospective students, educational
12 institutions, dental examining boards, related dental organizations and the profession) no later than 30
13 days after decisions are made. The Commission must also announce within a prescribed time frame any
14 final decision to deny or withdraw accreditation to a program and must also make available a brief
15 statement about the reason for the decision to deny or withdraw accreditation and the program's official
16 comment on this decision. CODA is expected to notify the USDE, the appropriate state licensing board
17 or other authorizing agency, the appropriate accrediting agencies, and, upon request, the public, within
18 30 days of receiving notification from a program that it is voluntarily withdrawing from accreditation or
19 within 30 days of the date on which accreditation lapses. The USDE also requires CODA to provide an
20 opportunity for third party comment with respect to programs scheduled for review. The Commission
21 posts a schedule of upcoming reviews and requests comment from interested parties via the CODA
22 website. The Commission and its Standing Committee on Communication and Technology oversee a
23 myriad of communication strategies that allow for transparency and accountability. For example, the
24 Commission publishes its online newsletter, the CODA Communicator, and a summary of major actions
25 and meeting minutes following each Commission meeting. The communities of interest are notified via e-
26 mail that the publications are available.

27 **Resolution**

28
29
30 **20. Resolved,** that the ADA policy, Urging the Commission on Dental Accreditation to Communicate
31 With Local Communities of Interest (*Trans.*2003:367; 2010:577) be rescinded.

32
33 **Urging the Commission on Dental Accreditation to Communicate With Local Communities**
34 **of Interest (*Trans.*2003:367; 2010:577)**
35

1 **Resolved**, that the Commission on Dental Accreditation be urged to communicate with local
2 communities of interest including state dental associations in the state in which the programs
3 reside, so they receive information on the process of accreditation of educational programs.
4
5

6 **BOARD RECOMMENDATION: Vote Yes.**

7 **BOARD VOTE: UNANIMOUS* (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO**
8 **BOARD DISCUSSION)**

9 ***Dr. Gamba was not in attendance.**

Resolution No. 21 NewReport: N/A Date Submitted: August 2016Submitted By: Council on Dental Education and LicensureReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Organizational Capacity-Obj. 6: Role and responsibility of each element of the tripartite clearly defined and agreed upon

How does this resolution increase member value: See Background

1 **RESCISSION OF THE POLICY, STATE BOARD AND COMMISSION ON DENTAL ACCREDITATION** 2 **ROLES IN CANDIDATE EVALUATION FOR LICENSURE**

3
4 **Background:** In accord with Resolution 170H-2012, Rescinding Existing ADA Policy, the Council on
5 Dental Education and Licensure recommends that the policy, State Board and Commission on Dental
6 Accreditation Roles in Candidate and Evaluation for Licensure (*Trans.2003:367*) be rescinded. Almost all
7 licensing jurisdictions (forty-nine of fifty-three) reference the Commission, requiring graduation from a
8 dental education program accredited by the Commission on Dental Accreditation as an eligibility
9 requirement for licensure.

10 **Resolution**

11
12 **21. Resolved,** that the ADA policy, State Board and Commission on Dental Accreditation Roles in
13 Candidate Evaluation for Licensure (*Trans.2003:367*) be rescinded.

14 **State Board and Commission on Dental Accreditation Roles in Candidate Evaluation for** 15 **Licensure (*Trans.2003:367*)**

16
17
18 **Resolved,** that the Association urge state boards of dentistry to continue to support the role of
19 the Commission on Dental Accreditation as the agency responsible for the evaluation of dental
20 education programs.

21
22 **BOARD COMMENT:** The Board appreciates the Council's intentions to eliminate outdated policies.
23 However, in this case, given the important eligibility components for state licensure, e.g., graduation from
24 a dental education program accredited by the Commission on Dental Accreditation, and successful
25 completion of the National Dental Boards and a clinical examination, the Board believes that the policy
26 should be retained as is for now. The Board suggests that the Council consider an amendment to the
27 policy in the future to better reflect a declarative statement calling for state dental boards to recognize the
28 Commission on Dental Accreditation as the agency responsible for the evaluation of dental education
29 programs.

30 **BOARD RECOMMENDATION: Vote No.**

31 **Vote: Resolution 21**

ASAI	No	COLE	No	GEHANI	Yes	ROBERTS	No
BITTER	No	CROWLEY	No	JEFFERS	No	ROBINSON	No
BLACK	No	FAIR	No	KLEMMEDSON	No	STEVENS	No
BUCKENHEIMER	No	FISCH	No	KWASNY	No	ZENK	No
COHLMIA	No	GAMBA	Absent	MARRON-TARRAZZI	No	ZUST	Yes

Resolution No. 22 NewReport: N/A Date Submitted: August 2016Submitted By: Council on Dental Education and LicensureReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Organizational Capacity-Obj. 6: Role and responsibility of each element of the tripartite clearly defined and agreed upon

How does this resolution increase member value: See Background

RESCISSION OF THE POLICY, COST OF DENTAL EDUCATION

Background: In accord with Resolution 170H-2012, Rescinding Existing ADA Policy, the Council on Dental Education and Licensure recommends that the policy, Cost of Dental Education (*Trans.*1999:960) be rescinded. This was a directive of the House in 1999. Further, the spirit of this policy has been incorporated into the proposed revised Policy, Support of Dental Education (*Trans.*1972:697) (See Resolution 33).

Resolution:

22. Resolved, that the ADA policy, Cost of Dental Education (*Trans.*1999:960) be rescinded.

Cost of Dental Education (*Trans.*1999:960)

Resolved, that the American Dental Association urge state dental societies to commit a portion of for-profit income to help support dental education in their states.

BOARD RECOMMENDATION: Vote Yes.**BOARD VOTE: UNANIMOUS* (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO BOARD DISCUSSION)*****Dr. Gamba was not in attendance.**

Resolution No. 23 NewReport: N/A Date Submitted: August 2016Submitted By: Council on Dental Education and LicensureReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Organizational Capacity-Obj. 6: Role and responsibility of each element of the tripartite clearly defined and agreed upon

How does this resolution increase member value: See Background

1 RESCISSION OF THE POLICY, DENTAL ACCREDITATION AND SPECIALTY RECOGNITION

2 Background: In accord with Resolution 170H-2012, Rescinding Existing ADA Policy, the Council on
3 Dental Education and Licensure recommends that the policy, Dental Accreditation and Specialty
4 Recognition (*Trans.* 2003:375) be rescinded. The first resolve is duplicative of policies, *Requirements for*
5 *Recognition of Dental Specialties and National Certifying Boards for Dental Specialties* (*Trans.*2001:470;
6 2004:313; 2009:443; 2013:328) and *Criteria for Recognition of Interest Areas in General Dentistry*
7 (*Trans.*2010:579). The second resolve was a directive to communicate with the Commission on Dental
8 Accreditation in 2003.

10 Resolution

12 23. Resolved, that the ADA policy, Dental Accreditation and Specialty Recognition (*Trans.*2003:375)
13 be rescinded.

16 Dental Accreditation and Specialty Recognition (*Trans.*2003:375)

18 Resolved, that a principal goal of the ADA's process of recognizing each area of concentration
19 in general dentistry, as well as the recognition of dental specialties, be to maintain public
20 understanding, trust and professional accountability, and be it further
21

22 Resolved, that the Commission on Dental Accreditation be urged to modify its rules to ensure
23 the accreditation of only those dental and dental-related educational programs whose areas of
24 concentration in general dentistry are recognized by the ADA through its Council on Dental
25 Education and Licensure.
26

27 BOARD RECOMMENDATION: Vote Yes.

28 BOARD VOTE: UNANIMOUS* (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO
29 BOARD DISCUSSION)

30 *Dr. Gamba was not in attendance.

Resolution No. 24 NewReport: N/A Date Submitted: August 2016Submitted By: Council on Dental Education and LicensureReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Organizational Capacity-Obj. 6: Role and responsibility of each element of the tripartite clearly defined and agreed upon

How does this resolution increase member value: See Background

RESCISSION OF THE POLICY, PROVISION OF ADVANCED COURSES

Background: In accord with Resolution 170H-2012, Rescinding Existing ADA Policy, the Council on Dental Education and Licensure recommends that the policy, Provision of Advanced Courses (*Trans.*1959:204) be rescinded. The intent of this 1959 policy is reflected in the *Requirements for Recognition of Dental Specialties and National Certifying Boards for Dental Specialties* (*Trans.*2001:470; 2004:313; 2009:443; 2013:328) and the *Criteria for Recognition of Interest Areas in General Dentistry* (*Trans.*2010:579).

Resolution

24. Resolved, that the ADA policy, Provision of Advanced Courses (*Trans.*1959:204) be rescinded.

Provision of Advanced Courses (*Trans.*1959:204)

Resolved, that dental schools be encouraged to provide advanced courses and programs in areas of study in addition to those that are officially recognized as special areas by the Association, and be it further

Resolved, that the establishment of new groups and academies for the development of new techniques in dentistry be encouraged.

BOARD RECOMMENDATION: Vote Yes.

BOARD VOTE: UNANIMOUS* (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO BOARD DISCUSSION)

***Dr. Gamba was not in attendance.**

Resolution No. 25 NewReport: N/A Date Submitted: August 2016Submitted By: Council on Dental Education and LicensureReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Organizational Capacity-Obj. 6: Role and responsibility of each element of the tripartite clearly defined and agreed upon

How does this resolution increase member value: See Background

1 RESCISSION OF THE POLICY, RECOMMENDED CURRICULA CHANGES

2
3 **Background:** In accord with Resolution 170H-2012, Rescinding Existing ADA Policy, the Council on
4 Dental Education and Licensure recommends that the policy, Recommended Curricula Changes
5 (*Trans.*1983:555; 2010:576) be rescinded. The Commission on Dental Accreditation has strengthened
6 the Accreditation Standards for Dental Education Programs in the area of patient management, ethics
7 and practice management. The Standards require graduates to be competent in applying the basic
8 principles and philosophies of practice management, models of oral health care delivery, and how to
9 function successfully as the leader of the oral health care team. Graduates also must be competent in
10 the application of the principles of ethical decision making and professional responsibility. The Council
11 believes that the concerns expressed in this 33 year old call to action have been addressed.

12 Resolution

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15 **25. Resolved,** that the ADA policy, Recommended Curricula Changes (*Trans.*1983:555; 2010:576)
16 be rescinded.

17 Recommended Curricula Changes (*Trans.*1983:555; 2010:576)

18
19
20 **Resolved,** that the ADA urge the Commission on Dental Accreditation, in cooperation with the
21 American Dental Education Association and individual dental schools, to stimulate curricular
22 changes that will reflect greater teaching emphasis on interpersonal skills, ethical professional
23 marketing strategies and management techniques.
24
25

26 **BBOARD RECOMMENDATION: Vote Yes.**

27 **BOARD VOTE: UNANIMOUS* (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO**
28 **BOARD DISCUSSION)**

29 ***Dr. Gamba was not in attendance.**

Resolution No. 26 NewReport: N/A Date Submitted: August 2016Submitted By: Council on Dental Education and LicensureReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Organizational Capacity-Obj. 6: Role and responsibility of each element of the tripartite clearly defined and agreed upon

How does this resolution increase member value: See Background

1 RESCISSION OF THE POLICY, EVALUATION OF DENTAL PROGRAMS

2
3 **Background:** In accord with Resolution 170H-2012, Rescinding Existing ADA Policy, the Council on
4 Dental Education and Licensure recommends that the policy, Evaluation of Dental Programs
5 (*Trans.* 1983;558) be rescinded. The Commission on Dental Accreditation's Accreditation Standards for
6 Dental Education Programs; Standard 1-2 states: Ongoing planning for, assessment of and improvement
7 of educational quality and program effectiveness at the dental school must be broad-based, systematic,
8 continuous, and designed to promote achievement of institutional goals related to institutional
9 effectiveness, student achievement, patient care, research, and service. The intent of the 1983 policy
10 has been achieved.

11 Resolution:

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14 **26. Resolved,** that the ADA policy, Evaluation of Dental Programs (*Trans.* 1983:558) be rescinded.

15 Evaluation of Dental Programs (*Trans.* 1983:558)

16
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18 **Resolved,** that all parties responsible for funding and administration of dental education be
19 urged to evaluate the size and quality of their programs on an ongoing and periodic basis, and
20 be it further

21
22 **Resolved,** that periodic evaluations by the ADA be based on a continued assessment of
23 resources, enrollment levels, manpower projections, disease trends and demand for dental
24 services.

25
26 **BOARD RECOMMENDATION: Vote Yes.**

27 Vote: Resolution 26

ASAI	Yes	COLE	No	GEHANI	Yes	ROBERTS	Yes
BITTER	Yes	CROWLEY	Yes	JEFFERS	Yes	ROBINSON	Yes
BLACK	No	FAIR	Yes	KLEMMEDSON	Yes	STEVENS	Yes
BUCKENHEIMER	Yes	FISCH	No	KWASNY	Yes	ZENK	Yes
COHLMIA	Yes	GAMBA	Absent	MARRON-TARRAZZI	Yes	ZUST	Yes

Resolution No. 27 NewReport: N/A Date Submitted: August 2016Submitted By: Council on Dental Education and LicensureReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Organizational Capacity-Obj. 6: Role and responsibility of each element of the tripartite clearly defined and agreed upon

How does this resolution increase member value: See Background

RESCISSION OF THE POLICY, MISSION OF A DENTAL SCHOOL

Background: In accord with Resolution 170H-2012, Rescinding Existing ADA Policy, the Council on Dental Education and Licensure recommends that the policy, Mission of a Dental School (*Trans.*1995:640) be rescinded. This policy is outdated and unnecessary. Dental education programs prepare students to competency; research and patient care are integral components of the education enterprise. In addition, the Commission on Dental Accreditation's Accreditation Standards for Dental Education Programs, requires each dental school to develop a clearly stated purpose/mission statement appropriate to dental education, addressing teaching, patient care, research and service. This statement is to be concise and communicated to faculty, staff, students, patients and other communities of interest is helpful in clarifying the purpose of the institution.

Resolution

27. Resolved, that the ADA policy, Mission of a Dental School (*Trans.*1995:640) be rescinded.

Mission of a Dental School (*Trans.*1995:640)

Resolved, that the policy of the American Dental Association be that the mission of a dental school is to educate students competent to practice the art and science of dentistry, and be it further

Resolved, that research is important to the mission of a dental school, and be it further

Resolved, that patient care is important in the mission of educating dental students.

BOARD RECOMMENDATION: Vote Yes.**BOARD VOTE: UNANIMOUS* (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO BOARD DISCUSSION)*****Dr. Gamba was not in attendance.**

Resolution No. 28 NewReport: N/A Date Submitted: August 2016Submitted By: Council on Dental Education and LicensureReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Organizational Capacity-Obj. 6: Role and responsibility of each element of the tripartite clearly defined and agreed upon

How does this resolution increase member value: See Background

AMENDMENT OF THE POLICY, SPONSORSHIP OF ACCREDITATION PROGRAMS

Background: In accord with Resolution 170H-2012, Reaffirming Existing ADA Policy, the Council on Dental Education and Licensure recommends that the policy, Sponsorship of Accreditation Programs (*Trans.* 1972:697; 2003:367) be amended to clarify the intent, i.e., the accredited programs referred to in the policy are dental-related accreditation programs.

Resolution:

28. Resolved, that the ADA policy, Sponsorship of Accreditation Programs (*Trans.* 1972:697; 2003:367) be amended. (additions are underscored):

Sponsorship of Dental Accreditation Programs (*Trans.* 1972:697; 2003:367)

Resolved, that the American Dental Association supports the concept of nongovernmental, voluntary accreditation, and be it further

Resolved, that the American Dental Association opposes the development of federal or state dental accreditation programs in the United States.

BOARD RECOMMENDATION: Vote Yes.**BOARD VOTE: UNANIMOUS* (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO BOARD DISCUSSION)*****Dr. Gamba was not in attendance.**

Resolution No. 29 NewReport: N/A Date Submitted: August 2016Submitted By: Council on Dental Education and LicensureReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: Amount One-time Amount On-going FTE 0

ADA Strategic Plan Objective: Organizational Capacity-Obj. 6: Role and responsibility of each element of the tripartite clearly defined and agreed upon

How does this resolution increase member value: See Background

1 RESCISSION OF THE POLICY, DENTAL SCHOOL INSTRUCTION IN PRACTICE MANAGEMENT

2
3 **Background:** In accord with Resolution 170H-2012, Rescinding Existing ADA Policy, the Council on
4 Dental Education and Licensure recommends that the policy, Dental School Instruction in Practice
5 Management (*Trans.*1995:642) be rescinded. The Commission on Dental Accreditation has strengthened
6 the Accreditation Standards for Dental Education Programs in the area of practice management. The
7 Standards require graduates to be competent in applying the basic principles and philosophies of practice
8 management, models of oral health care delivery, and how to function successfully as the leader of the
9 oral health care team. The Council believes that the concerns expressed in this 20 year old policy have
10 been addressed. Today, the traditional private practice fee-for-service business model is among a variety
11 of practice management models presented to students.

12 Resolution:

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15 **29. Resolved,** that the ADA policy, Dental School Instruction in Practice Management
16 (*Trans.*1995:642) be rescinded.

17 Dental School Instruction in Practice Management (*Trans.*1995:642)

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19
20 **Resolved,** that the ADA believes that dental school graduates must be competent in evaluating
21 the advantages and disadvantages of different models of oral health care management and
22 delivery and assessing the benefits and risks from personal, social, professional, legal and ethical
23 perspectives for the patient and the dentist, and be it further

24
25 **Resolved,** that the Association believes that dental school instruction in practice management
26 should include the traditional private practice fee-for-service model.

27 BOARD RECOMMENDATION: Vote Yes.

28 Vote: Resolution 29

ASAI	Yes	COLE	No	GEHANI	Yes	ROBERTS	Yes
BITTER	Yes	CROWLEY	Yes	JEFFERS	Yes	ROBINSON	Yes
BLACK	Yes	FAIR	Yes	KLEMMEDSON	Yes	STEVENS	Yes
BUCKENHEIMER	Yes	FISCH	Yes	KWASNY	Yes	ZENK	Yes
COHLMIA	Yes	GAMBA	Absent	MARRON-TARRAZZI	Yes	ZUST	Yes

NOTES

Resolution No. 30 New

Report: N/A Date Submitted: August 2016

Submitted By: Council on Dental Education and Licensure

Reference Committee: C (Dental Education, Science and Related Matters)

Total Net Financial Implication: None Net Dues Impact:

Amount One-time	Amount On-going	FTE	0
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ADA Strategic Plan Objective: Organizational Capacity-Obj. 6: Role and responsibility of each element of the tripartite clearly defined and agreed upon

How does this resolution increase member value: See Background

RESCISSION OF THE POLICY, CURRICULAR CHANGES TO MAINTAIN DENTISTRY AS AN AUTONOMOUS INDEPENDENT HEALTH PROFESSION

Background: In accord with Resolution 170H-2012, Rescinding Existing ADA Policy, the Council on Dental Education and Licensure recommends that the policy, Curricular Changes to Maintain Dentistry as an Autonomous Independent Health Profession (*Trans.*1996:696) be rescinded. This resolution was a request of the 1996 House of Delegates for the Commission on Dental Accreditation and the American Dental Education Association to stimulate curriculum reform. In 2005, the ADEA Commission for Change and Innovation was established to oversee and guide ADEA's educational change efforts. Over the past decade, repeated calls have been made for curricular reform and innovation in dental education. Today, ADEA continues these efforts and includes representatives of the ADA in its efforts. In addition, the Commission on Dental Accreditation's Accreditation Standards for Dental Education Programs is periodically reviewed to ensure a robust and current dental education curriculum.

Resolution:

30. Resolved, that the ADA policy, Curricular Changes to Maintain Dentistry as an Autonomous Independent Health Profession (*Trans.* 1996:696) be rescinded.

Curricular Changes to Maintain Dentistry as an Autonomous Independent Health Profession
(*Trans.*1996:696)

Resolved, that the American Dental Association urge the Commission on Dental Accreditation, in cooperation with the American Dental Education Association and individual dental schools, to stimulate curricular changes that will integrate appropriate medical knowledge into the dental curriculum in such a manner that dentistry remains an autonomous independent health profession.

BOARD RECOMMENDATION: Vote Yes.

BOARD VOTE: UNANIMOUS* (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO BOARD DISCUSSION)

***Dr. Gamba was not in attendance.**

NOTES

Resolution No. 31 NewReport: N/A Date Submitted: August 2016Submitted By: Council on Dental Education and LicensureReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Organizational Capacity-Obj. 6: Role and responsibility of each element of the tripartite clearly defined and agreed upon

How does this resolution increase member value: See Background

AMENDMENT OF THE POLICY, SUPPORT FOR THE CONTINUED EXISTENCE OF PRIVATE AND PUBLIC DENTAL SCHOOLS IN THE UNITED STATES

Background: In accord with Resolution 170H-2012, Reaffirming Existing ADA Policy, the Council on Dental Education and Licensure recommends that the policy, Support for the Continued Existence of Private and Public Dental Schools in the United States (*Trans.*1989:522), be amended by deletion of the second resolve which was a directive to the Council and the Commission in 1989 and is redundant with the duties and responsibilities of the Council and the Commission. The amended policy will be a declarative statement reflecting the Association's position in support of dental education programs sponsored by private and public universities in the United States.

Resolution:

31. Resolved, that the ADA policy, Support for the Continued Existence of Private and Public Dental Schools in the United States (*Trans.*1989:522) be amended as follows (additions are underscored; deletions are ~~stricken~~):

Resolved, that the American Dental Association strongly supports the continued existence of the private and public dental schools in the United States and the need for dental education to remain an integral part of the university community and an inviolate part of the higher education system, ~~and be it further~~

~~**Resolved**, that the American Dental Association through the Council on Dental Education and Licensure and Commission on Dental Accreditation and other appropriate Association agencies, communicate its position and, when requested, make its resources available to work with the state and local governments, and with foundations, the business community and other groups identified by an institution in ensuring the continued operations of all existing private and public dental schools in the United States.~~

BOARD RECOMMENDATION: Vote Yes.

BOARD VOTE: UNANIMOUS* (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO BOARD DISCUSSION)

***Dr. Gamba was not in attendance.**

Resolution No. 32 NewReport: N/A Date Submitted: August 2016Submitted By: Council on Dental Education and LicensureReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Organizational Capacity-Obj. 6: Role and responsibility of each element of the tripartite clearly defined and agreed upon

How does this resolution increase member value: See Background

AMENDMENT OF THE POLICY, PARTICIPATION IN DENTAL OUTREACH PROGRAMS

Background: In accord with Resolution 170H-2012, Reaffirming Existing ADA Policy, the Council on Dental Education and Licensure recommends that the policy, Participation in Dental Outreach Programs (*Trans.2010:587*) be amended by deleting the last two resolve clauses which were directives by the 2010 House of Delegates in regard to implementation. The amended policy will be a declarative statement reflecting the Association's position on students who participate in dental outreach programs.

Resolution

32. Resolved, that the ADA policy, Participation in Dental Outreach Programs (*Trans.2010:587*) be amended as follows (additions are underscored; deletions are ~~stricken~~):

Resolved, ~~that it be policy of the American Dental Association (ADA) that~~ students in U.S. dental schools and pre-dental programs who participate in a dental outreach program (e.g., international service trips, domestic service trips, volunteerism in underserved areas, etc.) be ~~are~~ strongly encouraged:

To adhere to the ASDA Student Code of Ethics and the ADA *Principles of Ethics and Code of Professional Conduct*;

To be directly supervised by dentists licensed to practice or teach in the United States;

To perform only procedures for which the volunteer has received proper education and training;

~~and be it further~~

Resolved, ~~that this policy be transmitted to all ADA accredited dental schools, entities with a vested interest in public oral health, U.S. organizations that administer dental outreach programs, and others as identified by ADA, and be it further~~

Resolved, ~~that advocacy for this policy be further investigated by the appropriate ADA council.~~

BOARD RECOMMENDATION: Vote Yes.**BOARD VOTE: UNANIMOUS* (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO BOARD DISCUSSION)*****Dr. Gamba was not in attendance.**

Resolution No. 33 NewReport: N/A Date Submitted: August 2016Submitted By: Council on Dental Education and LicensureReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Organizational Capacity-Obj. 6: Role and responsibility of each element of the tripartite clearly defined and agreed upon

How does this resolution increase member value: See Background

AMENDMENT OF THE POLICY, SUPPORT OF DENTAL EDUCATION PROGRAMS

Background: In accord with Resolution 170H-2012, Reaffirming Existing ADA Policy, the Council on Dental Education and Licensure recommends that the policy, Support of Dental Education Programs (*Trans.1972:697*), be amended to reflect current terminology; dental education programs are *accredited* by the Commission on Dental Accreditation.

Resolution:

33. Resolved, that the ADA policy, Support of Dental Education Programs (*Trans.1972:697*) be amended as follows (additions are underscored; deletions are ~~stricken~~):

Resolved, that the American Dental Association encourages members of the profession to support vigorously, through direct financial contributions and political activity, dental education programs which have been ~~approved~~ accredited by the ~~American Dental Association~~ Commission on Dental Accreditation.

BOARD RECOMMENDATION: Vote Yes.**BOARD VOTE: UNANIMOUS* (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO BOARD DISCUSSION)*****Dr. Gamba was not in attendance.**

Resolution No. 34 NewReport: N/A Date Submitted: August 2016Submitted By: Council on Dental Education and LicensureReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Organizational Capacity-Obj. 6: Role and responsibility of each element of the tripartite clearly defined and agreed upon

How does this resolution increase member value: See Background

AMENDMENT OF THE POLICY, DENTAL DEGREES

Background: In accord with Resolution 170H-2012, Reaffirming Existing ADA Policy, the Council on Dental Education and Licensure recommends that the Policy, Dental Degrees (*Trans.* 1972:698) be amended by deletion of the second resolve which was a House directive in 1972. The amended policy will be a declarative statement reflecting the Association's position that degree determination (DDS or DMD) is the prerogative of the university sponsoring the dental education program.

Resolution:

34. Resolved, that the ADA policy, Dental Degrees (*Trans.* 1972:698) be amended as follows (additions are underscored; deletions are ~~stricken~~):

Resolved, that the American Dental Association supports the principle that degree determination is the prerogative of the individual educational institution, ~~and be it further~~

~~**Resolved,** that the dental schools in the United States be urged to consider unifying the dental degree conferred.~~

BOARD RECOMMENDATION: Vote Yes.**BOARD VOTE: UNANIMOUS* (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO BOARD DISCUSSION)*****Dr. Gamba was not in attendance.**

Resolution No. 35 NewReport: N/A Date Submitted: August 2016Submitted By: Joint Commission on National Dental ExaminationsReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Membership-Obj. 1: Leaders and Advocates in Oral Health

How does this resolution increase member value: See Background

JOINT COMMISSION ON NATIONAL DENTAL EXAMINATIONS: PROPOSED JCNDE BYLAWS REVISIONS

Background: The ADA *Bylaws* state that the Joint Commission on National Dental Examinations (JCNDE) is to provide and conduct written examinations, exclusive of clinical demonstrations, for the purpose of assisting state boards in determining qualifications of dentists and dental hygienists who seek licensure to practice in any state or other jurisdiction of the United States. The JCNDE *Bylaws* contain important policies pertaining to JCNDE composition and responsibilities in support of this charge (e.g., JCNDE purpose, officer duties, etc.). The current resolution addresses recommended revisions to the *Bylaws* regarding the election of the Chair and Vice Chair. The focal change reflects the JCNDE decision to have the Vice Chair automatically succeed to the office of the Chair and is as follows (addition noted as underlined; deletion noted as strikethrough):

Article IV. Section 1.B. Election: The Vice Chair of the Joint Commission on National Dental Examinations shall become Chair at the end of his or her term as Vice Chair.

The revision is intended to provide greater continuity with respect to leadership of the JCNDE, and to better prepare the individuals who will one day become Chair. Additional corresponding revisions are also provided, to address particular eventualities (e.g., if there is a vacancy in the Vice Chair role). Lastly, grammatical revisions are also provided to improve language consistency.

The Joint Commission recommends that the following resolution be adopted by the 2016 House of Delegates:

Resolution:

35. Resolved, that the *Bylaws of the Joint Commission on National Dental Examinations* be revised as indicated in Appendix 1.

BOARD RECOMMENDATION: Vote Yes.**BOARD VOTE: UNANIMOUS* (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO BOARD DISCUSSION)*****Dr. Gamba was not in attendance.**

Appendix No. 1

**Proposed Joint Commission on National Dental
Examination's *Bylaws* Revisions**

**JOINT COMMISSION ON NATIONAL
DENTAL EXAMINATIONS**

BYLAWS

~~September 2015~~ October 2016

A publication of the Joint Commission on National Dental Examinations

American Dental Association

211 East Chicago Avenue

Chicago, Illinois 60611

1 The Joint Commission on National Dental Examinations is governed by four documents. In order of
2 precedence, they are:

3
4 *Bylaws of the American Dental Association*

5 *Bylaws of the Joint Commission on National Dental Examinations*

6 *Standing Rules for Councils and Commissions*

7 *Standing Rules of the Joint Commission on National Dental Examinations*

8
9 Joint Commission *Bylaws*, which follow, are consistent with but more comprehensive than ADA *Bylaws*.

10
11 Joint Commission *Bylaws* were adopted in 1980 and amended since. Additional modifications may be
12 made by the ADA House of Delegates without prior notification.

ARTICLE I. PURPOSE

The purposes of the Joint Commission on National Dental Examinations are:

- A. To provide and conduct written examinations, exclusive of clinical demonstrations, for the purpose of assisting state boards in determining qualifications of dentists who seek licensure to practice in any state, district or dependency of the United States, which recognizes the National Board Examinations, ~~here and after referred to as National Board Dental Examinations.~~
- B. To provide and conduct written examinations, exclusive of clinical demonstrations, for the purpose of assisting state boards in determining qualifications of dental hygienists who seek licensure to practice in any state, district or dependency of the United States, which recognizes the National Board Examinations, ~~here and after referred to as the National Board Dental Hygiene Examinations.~~
- C. To make rules and regulations for the conduct of National Board ~~Dental and Dental Hygiene~~ Examinations and for the issuance of National Board ~~Dental and Dental Hygiene~~ Certificates.
- D. To serve as a resource for the dental profession in the development of written examinations.

ARTICLE II. BOARD OF COMMISSIONERS**Section 1. Legislative and Management Body**

The legislative and management body of the Joint Commission on National Dental Examinations shall be the Board of Commissioners.

Section 2. Composition

The Board of Commissioners shall consist of fifteen (15) Commissioners to be selected as follows:

- A. Six (6) Commissioners who are active, life or retired members of the American Dental Association shall be selected by the American Association of Dental Boards from its active membership no one of whom is a member of a faculty of an accredited dental school.
 - a. For the purpose of these Bylaws, the active membership of the American Association of Dental Boards is defined as all active members (members who currently serve on state boards), all individual active members (members who formerly served on state boards) and all life members of that Association.
- B. Three (3) Commissioners who are active, life or retired members of the American Dental Association and who hold professorial rank at accredited dental schools shall be selected by the American Dental Education Association from its active membership, no one of whom is a member of a state board of dentistry.
- C. Three (3) Commissioners shall be selected by the American Dental Association from its active, life and retired members, no one of whom is a faculty member of an accredited dental school or a member of a state board of dentistry.
- D. One (1) Commissioner shall be selected by the American Dental Hygienists' Association from its active membership.
- E. One (1) Commissioner shall be selected by the American Student Dental Association from its active membership.
- F. One (1) Commissioner shall be elected as a public representative by the Board of Commissioners, but such public representative shall not be a dentist, a dental hygienist, a dental student, a dental

hygiene student or a faculty member of an accredited dental school or dental hygiene program.

Section 3. Term of Office

The term of office of a Commissioner shall be four (4) years except that the Commissioner selected by the American Student Dental Association shall serve a term of one (1) year.

- a. The Commissioner selected by the American Student Dental Association may be selected one (1) year in advance and may attend meetings of the Board of Commissioners as an observer before his or her term begins.

The tenure of a Commissioner shall be limited to one (1) term. Terms of Commissioners shall begin and end with adjournment of the closing session of the annual meeting of the House of Delegates of the American Dental Association in the appropriate year.

Section 4. Powers

A. The Board of Commissioners shall be vested with full power to conduct all business of the Joint Commission on National Dental Examinations subject to laws of the state of Illinois, the *Bylaws of the American Dental Association* and these *Bylaws*.

B. The Board of Commissioners shall have the power to establish rules and regulations to govern its organization and procedure provided that such rules and regulations are consistent with the *Bylaws of the American Dental Association* and with these *Bylaws*.

Section 5. Duties

A. **Examination Development and Administration:** The Board of Commissioners shall:

1. Develop, publish and periodically review specifications for National Board ~~Dental and Dental Hygiene~~ Examinations.
2. Appoint consultants with appropriate qualifications to assist in the construction of National Board ~~Dental and Dental Hygiene~~ Examinations.
3. Develop, publish and periodically review rules and regulations for the fair and orderly administration of National Board ~~Dental and Dental Hygiene~~ Examinations.
4. Cause National Board ~~Dental and Dental Hygiene~~ Examinations to be administered at least annually at locations throughout the United States.
5. Cause results from National Board ~~Dental and Dental Hygiene~~ Examinations to be reported in a timely fashion to candidates and/or their schools and to state boards of dentistry identified by candidates.
6. Cause a permanent record of National Board ~~Examination dental and dental hygiene scores~~ results to be maintained so that such results may be reported to individuals or institutions identified by candidates.
7. Protect the security of National Board ~~Dental and Dental Hygiene~~ Examinations and the integrity of National Board ~~dental and dental hygiene~~ Examination results.

B. **Liaison:** The Board of Commissioners shall:

1. Submit an annual report of the activities and future plans of the Joint Commission on National Dental Examinations to appropriate officials of the American Association of Dental Boards, the American Dental Education Association, the American Dental Association, the American Dental Hygienists' Association, and the American Student Dental Association.

2. Conduct an annual forum for representatives of state boards of dentistry for the purposes of providing information about and receiving recommendations for National Board Dental and Dental Hygiene Examinations.

C. Financial Management: The Board of Commissioners shall:

1. Submit annually to the Board of Trustees of the American Dental Association an appropriation request for the next year.
2. Control allocated funds in a manner consistent with the budgetary policy of the American Dental Association.
3. Monitor the relationship between expenses for National Board Examinations and income from examination fees and recommend to the Board of Trustees of the American Dental Association such changes in fees as needed to avoid either profit or loss.

D. Miscellaneous: The Board of Commissioners shall monitor these *Bylaws* for consistency with the *Bylaws of the American Dental Association*. When or if a conflict exists, the Board of Commissioners shall describe such conflict in its annual report to sponsoring associations and recommend changes to achieve conformity.

Section 6. Meetings

A. Regular Meetings: There shall be one (1) regular meeting of the Board of Commissioners each year.

B. Special Meetings: A special meeting of the Board of Commissioners may be called at any time by the Chair of the Joint Commission on National Dental Examinations. The Chair shall call a special meeting at the request of nine (9) of the fifteen (15) members of the Board of Commissioners. Members of the Board of Commissioners shall be notified at least ten (10) days in advance of the convening of a special meeting.

Section 7. Quorum

A majority of voting members of the Board of Commissioners shall constitute a quorum.

ARTICLE III. COMMITTEES

Section 1. Committee on Dental Hygiene

The Joint Commission on National Dental Examinations shall have a standing Committee on Dental Hygiene.

A. Composition: The Committee on Dental Hygiene shall be composed of eight (8) members to be selected as follows:

1. One (1) Commissioner appointed by the Chair who is a representative of the American Association of Dental Boards.
2. One (1) Commissioner appointed by the Chair who is a representative of the American Dental Education Association.
3. One (1) Commissioner appointed by the Chair who is a representative of the American Dental Association.
4. The Commissioner who is a representative of the American Dental Hygienists' Association plus three (3) additional dental hygienists who are selected by the American Dental Hygienists' Association. Of the four (4) dental hygienist members, two (2) members shall

be faculty members of accredited dental hygiene programs and two (2) members shall represent practicing dental hygienists.

5. One (1) dental hygiene student who is selected by the American Dental Hygienists' Association.

B. Meetings: The Committee on Dental Hygiene shall have one (1) regular meeting each year. This meeting shall precede the regular, annual meeting of the Board of Commissioners. Special meetings of the Committee on Dental Hygiene shall be convened at the request of the Board of Commissioners or at the request of a majority of Committee members subject to approval by the Board of Commissioners.

C. Duties: The Committee on Dental Hygiene shall consider matters related to the National Board Dental Hygiene Examination.

Section 2. Test Construction Committee

The Joint Commission on National Dental Examinations shall establish and convene regular meetings of such committees as are necessary to construct National Board Dental and Dental Hygiene Examinations.

Section 3. Other Committees

The Chair, with the advice and consent of the Board of Commissioners, may appoint such other committees as are necessary to ensure the orderly functioning of the business of the Joint Commission on National Dental Examinations. Excluding test construction committees, each committee will include at least one (1) Commissioner who is a representative of the American Association of Dental Boards, one (1) Commissioner who is a representative of the American Dental Education Association, and one (1) Commissioner who is a representative of the American Dental Association.

Section 4. Authority

Decisions of committees shall be subject to approval by the Board of Commissioners.

ARTICLE IV. OFFICERS

Section 1. Chair

A. Eligibility: The Chair of the Joint Commission on National Dental Examinations shall be a dentist who is a member of the Board of Commissioners.

B. Election: The Vice Chair of the Joint Commission on National Dental Examinations shall become Chair at the end of his or her term as Vice Chair. If the Vice Chair is unable or unwilling to serve as Chair, then the ~~The Chair of the Joint Commission on National Dental Examinations~~ shall be elected by the Board of Commissioners during its regular, annual meeting. The term of the Chair shall be one (1) year beginning and ending with adjournment of the closing session of the annual meeting of the House of Delegates of the American Dental Association.

C. Duties: The Chair of the Joint Commission on National Dental Examinations shall:

1. Appoint members and chairmen of such committees as are necessary for the orderly conduct of business except as otherwise provided in these *Bylaws*.
2. Circulate or cause to be circulated an announcement and an agenda for each regular or special meeting of the Board of Commissioners.
3. Preside during meetings of the Board of Commissioners.
4. Prepare or supervise the preparation of an annual report of the Joint Commission on National

Dental Examinations.

5. Prepare or supervise the preparation of an annual appropriation request for the Joint Commission on National Dental Examinations.

6. Represent the Joint Commission on National Dental Examinations during sessions of the House of Delegates of the American Dental Association.

Section 2. Vice Chair

A. Eligibility: The Vice Chair of the Joint Commission on National Dental Examinations shall be a dentist who is a member of the Board of Commissioners.

B. Election: The Vice Chair of the Joint Commission on National Dental Examinations shall be elected by the Board of Commissioners during its regular, annual meeting. The term of the Vice Chair shall be one (1) year beginning and ending with adjournment of the closing session of the annual meeting of the House of Delegates of the American Dental Association.

C. Duties: The Vice Chair of the Joint Commission on National Dental Examinations shall assist the Chair in the performance of his or her duties.

Section 3. Secretary:

A. Appointment: The Secretary of the Joint Commission on National Dental Examinations shall be an employee of the American Dental Association selected by the Executive Director of that Association.

B. Evaluation: The performance of the Secretary may be evaluated by the Board of Commissioners. If the Board of Commissioners exercises this option, written evaluation including recommendations signed by the Chair shall be forwarded to the Executive Director of the American Dental Association.

C. Duties: The Secretary of the Joint Commission on National Dental Examinations shall:

1. Keep minutes of meetings of the Board of Commissioners.
2. Be the custodian of records of the Joint Commission on National Dental Examinations.
3. Manage the office and staff of the Joint Commission on National Dental Examinations.

ARTICLE V. MISCELLANEOUS

Section 1. Financial Records

Financial records of the Joint Commission on National Dental Examinations shall be maintained by the American Dental Association in a manner consistent with accepted principles of accounting. Such financial records shall be available on reasonable notice for inspection by a representative or agent of the American Association of Dental Boards, the American Dental Education Association, the American Dental Hygienists' Association or the American Student Dental Association.

Section 2. Additional Rules

The rules contained in the current edition of the *American Institute of Parliamentarians Standard Code of Parliamentary Procedure* shall govern the deliberations for the Board of Commissioners in all instances where they are applicable and not in conflict with the *Bylaws of the American Dental Association*, these *Bylaws* or previously established rules and regulations of the Board of Commissioners.

Section 3. Vacancy

In the event of a vacancy in the office of a Commissioner, the following procedures shall be employed:

A. In the event that the Commissioner was selected by an association, such association shall select a successor who possesses the qualifications established by these *Bylaws* to complete the unexpired term.

B. In the event that the Commissioner was the public representative, the Board of Commissioners shall elect a successor who possesses the qualifications established by these *Bylaws* to complete the unexpired term.

C. In the event the vacancy involves the Chair, the Vice Chair shall immediately assume all duties of the Chair.

D. In the event the vacancy involve the Vice Chair, a meeting of the Joint Commission shall be convened to select a new Vice Chair.

ARTICLE VI. AMENDMENT

These *Bylaws* may be amended only by majority vote of the House of Delegates of the American Dental Association.

Resolution No. 36 NewReport: N/A Date Submitted: August 2016Submitted By: Joint Commission on National Dental ExaminationsReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: Amount One-time Amount On-going FTE 0

ADA Strategic Plan Objective: Membership-Obj. 1: Leaders and Advocates in Oral Health

How does this resolution increase member value: Not Applicable

JOINT COMMISSION ON NATIONAL DENTAL EXAMINATIONS: PROPOSED JCNDE STANDING RULES REVISIONS

Background: The ADA *Bylaws* state that the Joint Commission on National Dental Examinations (JCNDE) is to provide and conduct written examinations, exclusive of clinical demonstrations, for the purpose of assisting state boards in determining qualifications of dentists and dental hygienists who seek licensure to practice in any state or other jurisdiction of the United States. The JCNDE Standing Rules (*Rules*) contain important policies and procedures pertaining to JCNDE operations in support of this charge (e.g., roles of JCNDE committees). The current resolution involves proposed changes to the *Rules*, to help minimize conflicts of interest for members of the Joint Commission. More specifically, the revisions incorporate a new policy regarding simultaneous service which is stated as follows (addition noted as underline; deletion as strikethrough):

A member of the Joint Commission on National Dental Examinations—including its standing and ad-hoc committees—may not simultaneously serve as a principal officer of another organization that has a role in appointing a member of the Joint Commission, including the American Dental Education Association, American Association of Dental Boards, American Dental Association, and the American Dental Hygienists' Association.¹ When such a conflict is revealed at the time of appointment, the appointing organization will be informed that the conflict exists and requested to select another individual for membership on the Joint Commission. When such a conflict arises during the term of a current commissioner, the commissioner will be asked to resolve the conflict by resigning from one of the conflicting appointments. In the event that the member resigns from the Joint Commission, the appointing organization will appoint another individual to complete the unfinished term, as specified by the American Dental Association (ADA) Bylaws and ADA Standing Rules for Councils and Commissions.

Additional grammatical revisions (e.g. clarification of examination names) are also offered to the *Rules* to improve language consistency.

¹ This requirement applies to appointments made after 2016.

30 The Joint Commission recommends that the following resolution be adopted by the 2016 House of Delegates:

31 **Resolution:**

32 **36. Resolved**, that the *Standing Rules of the Joint Commission on National Dental Examinations* be
33 revised as indicated in Appendix 1.

34
35 **BOARD RECOMMENDATION: Vote Yes.**

36 **BOARD VOTE: UNANIMOUS* (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO BOARD**
37 **DISCUSSION)**

38 ***Dr. Gamba was not in attendance.**

Appendix No. 1
Proposed Changes to the *Standing Rules* of the
Joint Commission on National Dental Examinations

STANDING RULES

~~April 2015~~ October 2016

A publication of the Joint Commission on National Dental Examinations
American Dental Association Building
211 East Chicago Avenue
Chicago, Illinois 60611-2637

1 The Joint Commission on National Dental Examinations operates within the limits imposed by four
2 documents, listed here in order of precedence:

- 3
- 4 1. Bylaws of the American Dental Association
- 5 2. Bylaws of the Joint Commission on National Dental Examinations
- 6 3. Standing Rules for Councils and Commissions
- 7 4. Standing Rules of the Joint Commission on National Dental Examinations
- 8

9 Subject to constraints defined in these documents, the Joint Commission is free to establish its own
10 policies and procedures for the conduct of its business. Such policies and procedures as have
11 been adopted are compiled here.



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ELECTION OF A PUBLIC MEMBER

The Joint Commission is charged with electing a public member to serve as a ~~commissioner~~
Commissioner. Policies relating to election are as follows:

Qualifications

The public member shall not be a (n):

- a. Dentist
- b. Dental hygienist
- c. Dental student
- d. Dental hygiene student
- e. Faculty member of a dental school or dental hygiene program
- f. Employee of the Joint Commission
- g. Member of another health profession
- h. Professional who has represented the Joint Commission, dental profession, or dental hygiene profession for a fee in the last five years
- i. Spouse of any of the above

Not more than five percent of the public member's income shall be derived from the Joint Commission, dentistry, or dental hygiene.

It is suggested that the public member not be employed by a firm with a substantial interest in dentistry or dental hygiene, and that the public member be experienced in health issues, testing, credentialing, and/or advocating for the interests of the public. Individuals wishing to serve as the public member must disclose in their application materials any financial benefits they may be receiving from the Joint Commission's examination programs.

Term

The public member will serve a single four-year term.

Identification of Nominees

When a new public member is needed, nominations will be requested from appropriate agencies, such as state boards of dentistry and public service organizations. Each nominee will be requested to supply a summary of his or her qualifications. At least two qualified nominees will be identified prior to conducting an election.

ROLES OF COMMITTEES

The following four Joint Commission standing committees meet in conjunction with the annual meeting of the Joint Commission:

- a. Committee on Administration
- b. Committee on Dental Hygiene
- c. Committee on Examination Development
- d. Committee on Research and Development

Each committee is assigned a portion of the materials to be considered by the Joint Commission, and is responsible for formulating specific recommendations for Joint Commission action.

1 **Assignments**

2 Assignment of topics to specific committees is the responsibility of the Joint Commission Chair, but
3 this responsibility may be delegated in part or in total to the Secretary. Listed and discussed below
4 are examples of topics that are typically assigned to each committee.

5 A topic may be assigned to more than one committee. In addition, provided that it completes its
6 assigned items, a committee may consider a topic assigned to a different committee.

7 **Committee on Administration**

8 This committee's responsibility relates to administration and operations for all both National
9 ~~Board Dental Examinations and the National Board Dental Hygiene Examination. The~~
10 ~~committee deals with operations.~~ Specific topics to be considered include:

- 11
- 12 a. Examination security, including procedures for examination administration
- 13 b. Examination regulations
- 14 c. Joint Commission Bylaws and Standing Rules
- 15 d. Finances, including an annual comparison of income and expenses
- 16

17 **Committee on Dental Hygiene**

18

19 This committee's responsibility relates primarily to the National Board Dental Hygiene
20 Examination. Specific topics to be considered include:

- 21
- 22 a. Examination content and specifications
- 23 b. Test construction procedures, including nomination of test constructors and
24 establishment of qualification requirements
- 25 c. Information circulated to publicize or explain the testing program
- 26 d. Portions of Examination Regulations that affect dental hygiene candidates
- 27 e. Matters pertaining to finances, ADA and Joint Commission Bylaws, and Joint
28 Commission Standing Rules that affect the National Board Dental Hygiene
29 Examination

30 **Committee on Examination Development**

31 This committee's responsibility relates primarily to the National Board Dental Examinations.
32 Specific topics to be considered include:

- 33 a. Examination content and specifications
- 34 b. Test construction procedures, including nomination of test constructors and
35 establishment of qualification requirements
- 36 c. Information circulated to publicize or explain the testing program
- 37 d. Portions of Examination Regulations that affect dental candidates
- 38 e. Matters pertaining to finances, ADA and Joint Commission Bylaws, and Joint
39 Commission Standing Rules that affect the National Board Dental
40 Examinations

Committee on Research and Development

This committee's responsibility relates to all both the National Board Dental Examinations and the National Board Dental Hygiene Examination. Topics considered by this Committee committee include any research and development activities related to the examinations.

Committee Actions

A committee is expected to consider and report on all assigned topics. For most topics, committee actions are to be presented in the form of recommendations for Joint Commission action. The following are three exceptions:

- a. A decision about the manner in which a committee approaches its assignment. For example, a change in the personal data form for potential test constructors need not be reported.
- b. Identification of background materials requested to inform future deliberations may be reported as informational without an accompanying recommendation. If compilation of needed background materials requires substantial resources, however, a specific recommendation for action is appropriate.
- c. A decision not to act may be reported as an informational item. If the topic has generated substantial outside interest, however, a recommendation not to act is appropriate so as to allow the Joint Commission to affirm the committee's decision.

Reporting

Background information prepared for Committee-committee deliberations is provided to all Commissioners and all Committee-committee members. Exceptions include, for example, the following: 1) information about a nominee to a test construction committee is provided only to the committee charged with screening nominees and 2) technical reports containing sensitive information (e.g., involving matters of test security) that are provided as background for the Committee on Research and Development.

Committee reports are provided to the Joint Commission electronically. Topics are discussed in the order they are listed on the Joint Commission's agenda, and background information related to each topic is identified. For each recommendation, the report should include a brief summary or rationale. An exception is made in that no rationale is expected for appointment of a test constructor. Instead, an alternate is named for each newly proposed test constructor.

Preparation and presentation of a committee's report is the responsibility of each committee's Chair. Preparation may be delegated to a staff member assigned to the committee. If the committee Chair is not a commissioner Commissioner or if, for some other reason, the committee Chair is not present at the Joint Commission's annual meeting, responsibility for presenting the report may be delegated to a commissioner Commissioner who has served on that committee.

Committee reports are presented orally, stopping for action as needed. At each stop for action, the presenter represents the committee's views through his or her answers to questions. Only after ensuring that the committee's views have been represented adequately may the presenter impart any personal views.

TEST CONSTRUCTOR SELECTION CRITERIA

The Joint Commission selects consultants to serve on its ~~Dental and Dental Hygiene~~ Test Construction Committees. A test constructor is appointed for a one-year term and may be reappointed to four consecutive terms. To be considered for appointment, candidates must possess appropriate qualifications and must submit a completed personal data form. Test constructor qualifications are published in the following document: *JCNDE Test Construction Committees and Member Selection Criteria*. Test constructors who have completed five years of service on a committee will not be considered for reappointment to the same committee.

DETECTION OF IRREGULARITIES BASED ON FORENSIC ANALYSES

The Joint Commission is responsible for protecting the integrity of National Board Examination results. One method involves forensic analyses of candidate performance to detect irregularities and aberrant response patterns. Candidate's results may be withheld or, as circumstances may warrant, reported when 1) aberrant response patterns or aberrant examination performance is detected through forensic analyses or 2) other evidence comes to light that supports the possibility that the candidate has given or received confidential information concerning examination content during or prior to the examination. Similarly, results may be withheld or reported if compelling information is available that suggests that the candidate was not testing for the intended purpose.

LIMITED RIGHT OF APPEALS FOR EXAMINATION CANDIDATES

The Joint Commission on National Dental Examinations (JCNDE) recognizes that strict application of the Examination Regulations for National Board Examinations may, because of unusual circumstances, impose an unusual burden on one or more candidates. In these situations, the JCNDE may consider an appeal.

Requests for an appeal pertaining to test results must be initiated within 30 days of receiving test results or, in the case of withheld results, within 30 days of receiving written notice that results are being withheld. In the event that the JCNDE has given notice that previously released results are to be invalidated or voided, the request for appeal must be submitted within 30 days of that notice. In this case, a request for appeal will stay the action to invalidate or void the results until such time as the appeal is decided or the time for submitting a request for appeal has expired. In the interim, no results will be reported. A request for an appeal must be submitted in writing and must include adequate supporting documentation. The request for an appeal must indicate the specific relief requested.

A request for an appeal will first be screened by the Chair, in consultation with the secretary. The Chair, at his/her sole discretion, may 1) grant the appeal, 2) deny the appeal, or 3) forward the appeal to the full Joint Commission for its consideration. If during the Joint Commission's deliberations credible information becomes available indicating an error was made in the decision to withhold results, the Chair in consultation with the secretary may end the deliberations and grant the appeal. At his or her discretion, the Chair may delegate the screening of appeals to another member of the Joint Commission.

In rendering a decision with respect to appeals—and particularly in situations where results have been withheld—the touchstone and foremost consideration is the validity of examination results, in alignment with the purpose of the examination. The Joint Commission strives to be fair and objective in its decision making process, as it remains true to its mission. When considering appeals, the JCNDE avoids favoritism and strives to ensure that all candidates are treated equally and fairly.

If the issue presented in an appeal is likely to recur, the JCNDE may consider a change in its Examination Regulations. The granting of an appeal will be considered a precedent only if a change in regulations is also adopted. The candidate will be notified of JCNDE action within 60 days after receipt of the written request for an appeal.

CONFLICT OF INTEREST POLICY

Policies and procedures used in National Board testing programs should provide for fairness and impartiality in the conduct of examinations and treatment of all candidates. Central to the fairness of the JCNDE's operations and the impartiality of its decision-making process is an organizational and personal duty to avoid real or perceived conflicts of interest. The potential for a conflict of interest arises when one's duty to make decisions in the public's interest is compromised by competing interests of a personal or private nature, including but not limited to pecuniary interests. Conflicts of interest can result in a partiality or bias which might interfere with objectivity in decision-making with respect to policy, or the evaluation of candidate appeals.

The Joint Commission strives to avoid conflicts of interest and the appearance of conflicts in decisions regarding examination policy or individual candidate appeals. Potential conflicts of interest for Commissioners include, but are not limited to:

- A professional or personal relationship or an affiliation with the individual or an organization that may create a conflict or the appearance of a conflict.
- Being an officer or administrator in a dental education program, testing agency, or board of dentistry with related decision-making influence regarding a candidate for National Board certification.

To safeguard the objectivity of the Joint Commission, it is the responsibility of any Commissioner to disclose any potential conflicts. Any member with a direct conflict of interest must recuse himself/herself from the decision making process regarding candidate appeals, or from discussions involving policies that impact the fairness and impartiality of the JCNDE's examination programs.

SIMULTANEOUS SERVICE POLICY

A member of the Joint Commission on National Dental Examinations—including its standing and ad-hoc committees—may not simultaneously serve as a principal officer of another organization that has a role in appointing a member of the Joint Commission, including the American Dental Education Association, American Association of Dental Boards, American Dental Association, and the American Dental Hygienists' Association.² When such a conflict is revealed at the time of appointment, the appointing organization will be informed that the conflict exists and requested to select another individual for membership on the Joint Commission. When such a conflict arises during the term of a current commissioner, the commissioner will be asked to resolve the conflict by resigning from one of the conflicting appointments. In the event that the member resigns from the Joint Commission, the appointing organization will appoint another individual to complete the unfinished term, as specified by the American Dental Association (ADA) Bylaws and ADA Standing Rules for Councils and Commissions.

ASSISTANCE TO OTHER AGENCIES

One of the duties of the Joint Commission is to serve as a resource for the dental profession in the area of developing written examinations for licensure. This charge is fulfilled by providing

² This requirement applies to appointments made after 2016.

1 assistance to state boards of dentistry and to national and international dental organizations. This
2 policy statement describes limitations on availability.

3
4 **Availability**

5 Operation of the National Board Examinations is the Joint Commission's primary charge.
6 Assistance is provided to state boards of dentistry or national dental organizations only upon
7 request and only if the Joint Commission possesses the resources to fulfill the request.

8 If the Joint Commission is forced to select agencies to receive assistance, highest priority will be
9 given to state boards of dentistry that accept National Board results. For dental organizations in the
10 U.S. and its territories, assistance is limited to consultation and sharing general information about
11 Joint Commission policies and procedures. Requests for testing services will be referred to the
12 ADA Department of Testing Services or other organizations or individuals that provide such
13 services.

Resolution No. 37 New

Report: N/A Date Submitted: August 2016

Submitted By: Council on Dental Education and Licensure

Reference Committee: C (Dental Education, Science and Related Matters)

Total Net Financial Implication: None Net Dues Impact: _____

Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Membership-Obj. 1: Leaders and Advocates in Oral Health

How does this resolution increase member value: See Background

1 **RESPONSE TO RESOLUTION 77H-2015: PROPOSED AMENDMENTS TO THE** 2 **SEDATION AND ANESTHESIA GUIDELINES**

3
4 **Background:** The Council on Dental Education and Licensure (Council/CDEL) and its Anesthesiology
5 Committee have considered revisions to the ADA Guidelines for the Use of Sedation and General
6 Anesthesia by Dentists and the Guidelines for Teaching and Pain Control and Sedation to Dentists and
7 Dental Students (Sedation and Anesthesia Guidelines) as requested by the 2015 House of Delegates:

8 **77H-2015. Resolved,** that the proposed *Guidelines for the Use of Sedation and General*
9 *Anesthesia by Dentists* and the *Guidelines for Teaching and Pain Control and Sedation to*
10 *Dentists and Dental Students* be referred to the Council on Dental Education and Licensure, in
11 collaboration with the Council on Scientific Affairs, with a recommendation to consider:

- 12
13 • Elimination of the mandate for monitoring end tidal CO₂ for moderate sedation to allow for the
14 choice of options such as: continuous use of a precordial or pretracheal stethoscope,
15 continuous monitoring of end tidal carbon dioxide, and continual verbal communication with
16 the patient.
- 17
18 • Reconsideration of the section "Moderate Sedation Course Duration" (hours and content), as
19 proposed by level of sedation, or a possible option of separate course requirements for
20 enteral and parenteral routes of sedation.
- 21
22 • Making patient evaluation provisions consistent throughout the document, including but not
23 limited to, rationale and guidelines for the use of Body Mass Index (BMI) and the timing of
24 medical history review.

25
26 The Council has concluded its review and presents in Appendix 1 the Council's Proposed Changes to the
27 Guidelines for the Use of Sedation and General Anesthesia by Dentists and the Guidelines for Teaching
28 and Pain Control and Sedation to Dentists and Dental Students, adopted by the House of Delegates in
29 2012. The following is a summary report of the activities undertaken this year and the Council's
30 conclusions and rationale for the proposed changes.

31
32 **Council on Scientific Affairs Support:** Per Res.77H-2015, CDEL requested that the Council on
33 Scientific Affairs (CSA) appoint a member to serve in a consultant capacity to CDEL and its
34 Anesthesiology Committee to provide input and feedback regarding the resolution. CSA member, Dr.
35 William Parker, served as the consultant, attending Anesthesiology Committee meetings and the
36 Members' Hearing held on April 20, 2016.

Also in accord with Resolution 77H-2015, CDEL requested that that CSA and the ADA Science Institute (SI) review the literature and prepare a report to evaluate the impact of including monitoring end-tidal CO₂ in an open airway system for patients undergoing procedures under moderate sedation. The CSA/SI Report, "Report on the Risks and Benefits of Using Capnography in Dental Patients Undergoing Moderate Sedation" was posted to ADA.org on June 3, 2016 (Appendix 2).

The Council did not request input from the CSA on the matters related to hours and content of moderate sedation courses, or on consistency of patient evaluation throughout the Guidelines. The intent of the resolution was understood by both CDEL and CSA to seek CSA input on the matter of utilizing a capnograph during moderate sedation. The CSA, Science Institute and Evidence-Based Dentistry Center focus on scientific issues impacting the dental profession. The Division of Science is not currently staffed or resourced to assess the education literature on sedation/anesthesiology-related programs and services. Education and anesthesiology matters are the *Bylaws* responsibility of the Council on Dental Education and Licensure.

Consideration of Comments on Proposed Revisions and Members' Hearing: To obtain initial input on the three bullets cited in Res.77H-2105, the Council made available via ADA.org Res.77H-2015 with the revisions proposed (but not approved) by the 2015 House of Delegates (Appendix 3). This opportunity to provide feedback to the Council was promoted via ADA.org, direct email notification, *Leadership Update*, the *Morning Huddle* and via *ADA News*.

The Committee on Anesthesiology then hosted a hearing for ADA members on April 20, 2016 at ADA Headquarters focused on Res.77H-2015. Both in-person and teleconference testimony was heard by the Anesthesiology Committee members and several Council members. Twenty-nine ADA members attended the hearing both in person and via teleconference; 11 individuals provided testimony. Of those, nine also provided written statements. The Council simultaneously invited written comments from its communities of interest* and received three additional communications. All testimony submitted in writing and correspondence received was published [on ADA.org](http://ada.org) on June 3, 2016 and is included in Appendix 4.

**CDEL Anesthesiology Communities of Interest*

- ADA Council on Dental Practice
- ADA Council on Scientific Affairs
- ADA Council on Access, Prevention and Interprofessional Relations
- ADA Council on Government Affairs
- ADA New Dentist Committee
- State dental societies
- Local dental societies
- State boards of dentistry
- Recognized dental specialties
- Recognized specialty certifying boards
- American Dental Education Association
- American Association of Dental Boards
- Special Care Dentistry
- Academy of General Dentistry
- American Student Dental Association
- American Society of Dentist Anesthesiologists
- American Dental Society of Anesthesiology
- American Society of Anesthesiologists

The Council and its Anesthesiology Committee met in early June to consider all testimony and written comment to date and proposed the first version of revisions to the Sedation and Anesthesia Guidelines as specified in Res.77H-2015. This June 2016 version of proposed revisions was circulated to the anesthesiology communities of interest for comment with a July 4, 2016 deadline for submissions. These opportunities to provide feedback to the Council were announced via direct email notifications, ADA.org, *Leadership Update*, and the *Morning Huddle*.

In response, the Council received 19 letters and emails (Appendix 5). Organizations replying included the: American Academy of Periodontology; American Academy of Pediatric Dentistry; ADA District XI; Virginia Board of Dentistry; California Dental Association, Rhode Island Association of Oral and Maxillofacial Surgeons; Texas Academy of General Dentistry; American Dental Society of Anesthesiology; Academy of General Dentistry; California Society of Anesthesiologists; California Academy of Pediatrics; American Society of Anesthesiologists and the American Society of Dentist Anesthesiologists. Comments from six individuals were also received, including a member of the ADA Council on Dental Practice.

The Committee and Council met again the first week of July to review all comments received and determine final proposed revisions to the Sedation and Anesthesia Guidelines for submission to the 2016 House of Delegates. The following represents the Council's conclusions and recommendations.

Rationale for Proposed Revisions: Throughout their deliberations, the Council and Anesthesiology Committee have remained committed to and focused on the importance of currency and relevancy, standard of care, patient safety, public protection and risk management. Since the last comprehensive revision of the Sedation and Anesthesia Guidelines in 2007, much has changed, including educational methods and technology (e.g., the preponderate use of human simulators in both continuing education and higher education to achieve competence in airway management, Bluetooth™ technology for precordial stethoscopes, and the widespread availability and use of capnography equipment during moderate and deep procedural sedation) as well as the need to keep current with updates in pharmacology. The Council believes that the Sedation and Anesthesia Guidelines must reflect current practice and standard of care to guide practitioners, educators and regulatory agencies in assuring patient safety and managing risk. It must be recognized that state dental boards establish their own laws and regulations regarding permits and licenses to administer sedation and anesthesia. While the ADA Sedation and Anesthesia Guidelines may be referenced in state law, state legislatures and dental boards have the sole authority to establish permit/license requirements by which dentists with anesthesia permits or licenses must abide.

Monitoring End-Tidal CO₂: Per the detailed CSA report conducted by the ADA Science Institute, "Report on the Risks and Benefits of Using Capnography In Dental Patients Undergoing Moderate Sedation" (or "Capnography Report"), consideration of two systemic reviews, as well as comments received, the Council continues to support its proposed language that end-tidal CO₂ must be monitored during the administration of moderate sedation *unless precluded or invalidated by the nature of the patient, procedure or equipment*. The Council believes that the phrase, "*unless precluded or invalidated by the nature of the patient, procedure or equipment*," recognizes that the dentist may determine that certain circumstances may present which preclude the use of capnography, e.g., a patient with a nasal deformity, severe intellectual disability or behavioral disorder, or a mouth breather.

The Council also reviewed and discussed the updated 2016 AAPD/AAP *Guidelines for Monitoring and Management of Pediatric Patients Before, During, and After Sedation for Diagnostic and Therapeutic Procedures*. It was noted that the AAPD/AAP *Guidelines* for children offer guidance for use of capnography referring to "when bidirectional verbal communication between the provider and patient is appropriate and possible..." versus "when bidirectional verbal communication is not appropriate or not possible..." In conclusion, the Council believes that the proposed language "*unless precluded or invalidated by the nature of the patient, procedure or equipment*" provides the same opportunity for clinical judgment when providing sedation and anesthesia for adults, whether use of a capnograph is preferred or required.

Moderate Sedation Course Duration (hours and content): To further clarify depth of minimal sedation versus moderate sedation and clearly outline education and training requirements, the Council proposes reorganized definitions of minimal and moderate sedation as well as inserting a statement that level of sedation is independent of the route of administration. Patients who arrive at a level of moderate sedation by an enteral or parenteral route are in the same clinical state. The Council maintains that

moderately sedated patients via either route require the same attentiveness and monitoring; there should be no difference in the training requirements for the routes of administration. In that regard, the Council proposes several competencies that must be certified by a course director, especially regarding rescue and emergency management. The Council has reviewed information on moderate sedation courses offered by universities, associations and continuing education providers, and continues to support course duration as 60 hours of instruction plus 20 patient experiences for moderate sedation.

Consistent Patient Evaluation Provisions: For moderate sedation and deep sedation/general anesthesia the Council believes that the Sedation and Anesthesia Guidelines should require that patients undergo an evaluation prior to the administration of any sedative, at least a review at an appropriate time of their medical history and medication use, and that ASA III and IV patients should also require consultation with the primary care physician or medical specialist. The Council discussed available evidence demonstrating that patients with elevated BMI may be at increased risk for airway associated morbidity during sedation, particularly if in association with other factors such as obstructive sleep apnea. Therefore, in regard to assessment of BMI, the Council proposes that Body Mass Index (BMI) measurements be considered part of a pre-procedural workup for patients receiving moderate sedation and deep sedation/general anesthesia. Assessment of BMI for patients receiving minimal sedation, is not needed because ventilatory and cardiovascular functions are unaffected during minimal sedation as noted in the definition of minimal sedation.

American Academy of Pediatrics and American Academy of Pediatric Dentistry *Guidelines for Monitoring and Management of Pediatric Patients Before, During and After Sedation for Diagnostic and Therapeutic Procedures-Update 2016*: In July 2016 the American Academy of Pediatrics and American Academy of Pediatric Dentistry published updated *Guidelines for Monitoring and Management of Pediatric Patients Before, During and After Sedation for Diagnostic and Therapeutic Procedures: Update 2016* (AAP/AAPD *Guidelines*). The Council noted several updates including specific patient monitoring procedures specific to pediatric patients and believes the AAP and AAPD are the authorities on sedation and anesthesia care for pediatric patients. Therefore, the Council recommends use of the AAP/AAPD *Guidelines* when providing sedation and anesthesia to pediatric patients and the reliance on the ADA Sedation and Anesthesia Guidelines when providing sedation and anesthesia to adults. The AAP/AAPD *Guidelines* do not include an age or chronological definition of “pediatrics.” Given the variable definitions of pediatrics by national dental and medical organizations as well as state health care agencies (for example “up to age 18” or “up to age 21”) coupled with other patient care factors, the Council concluded that the ADA Sedation and Anesthesia Guidelines should focus on adults without specifically defining a chronological age.

Management of the Proposed Revisions. When the 2015 House of Delegates did not adopt the Council’s proposed revisions to the Sedation and Anesthesia Guidelines (Appendix 3) and referred them to the Council for further consideration, the 2015 proposed revisions were declared moot. The Speaker of the House advised the Council that if proposed revisions would be presented to the 2016 House of Delegates, those proposed amendments must be made to the current Guidelines for the Use of Sedation and General Anesthesia by Dentists and the Guidelines for Teaching and Pain Control and Sedation to Dentists and Dental Students.

Accordingly, the following outlines and explains the Council’s proposed revisions to the current Guidelines for the Use of Sedation and General Anesthesia by Dentists and the Guidelines for Teaching and Pain Control and Sedation to Dentists and Dental Students in response to Resolution 77H-2015, as well as additional proposed revisions recommended by the Council. Appendix 1 presents the Council’s proposed amendments with deletions ~~stricken~~ and additions underlined.

Guidelines for the Use of Sedation and General Anesthesia by Dentists

- Lines 20-21: Revised to better reflect the concept that ultimately, dentists must comply with their state law, rules and/or regulations when providing sedation and anesthesia. The requirements for obtaining and maintaining sedation and anesthesia permits are the sole responsibility of each state dental board as delineated in state law, rules and/or regulations.

- Lines 24-26: Inserted a statement emphasizing that level of sedation is independent of the route of administration to reflect current sedation philosophies and practice.
- Lines 28-30: For guidance related to the sedation and anesthesia for children, referring to the American Academy of Pediatrics (AAP) and American Academy of Pediatric Dentistry (AAPD) *Guidelines for Monitoring and Management of Pediatric Patients Before, During, and After Sedation for Diagnostic and Therapeutic Procedures*.
- Lines 66-118: Reorganized and modified the definition of minimal sedation to reflect current sedation protocols and practice.
- Lines 109-118: Consistent with the reference to the AAP/AAPD *Guidelines* on lines 28-30, other references to sedation and anesthesia for children were deleted.
- Lines 187-189 and 285-288: Modified the definition to better reflect the concept that ultimately, dentists must comply with their state law, rules and/or regulations when providing sedation and anesthesia.
- Line 211: Added the American Society of Anesthesiologists' (ASA) "Examples" of Patient Physical Status Classifications to the last column of the table, consistent with 2014 ASA policy.
- Lines 293, 388 and 508: Renamed section titles adding "History and;" section now called "Patient History and Evaluation" to accurately describe the content presented.
- Lines 293-313, 388-416, and 508-540: Per Res.77H-2015, made patient evaluation provisions consistent throughout the document, as applicable per level of sedation/anesthesia, including but not limited to, rationale and guidelines for the use of Body Mass Index (BMI) and the timing of medical history review.
- Line 325-326, 428-429, and 558-559: Modified the statement on equipment maintenance, as recommended by a comment from the community of interest.
- Line 438-439: Modified the statement on equipment necessary for intravascular or intraosseous access as recommended by a comment from the community of interest.
- Lines 458-462, 585-589: Per Res.77H-2015, based on a detailed report by the CSA and ADA Science Institute on two systemic reviews, the Council supports the proposed requirement for monitoring end-tidal CO₂ during moderate sedation. (Note: the current 2012 Sedation and Anesthesia Guidelines require end-tidal CO₂ monitoring for deep sedation and general anesthesia.)
- Lines 638-672: The section titled, "V. Additional Sources of Information," will be deleted from the formal policy statement per the suggestion of the Speaker of the House. To ensure that current information is available to members at all times, supplemental information and resources will be posted on ADA.org in support of the Guidelines, in a readily-accessible area. This allows real-time updating by CDEL.

Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students

- Lines 731-733: Inserted the statement emphasizing that level of sedation is independent of the route of administration to reflect current sedation philosophies and practice.
- Lines 735-737: For guidance related to the sedation and anesthesia for children, referring to the American Academy of Pediatrics (AAP) and American Academy of Pediatric Dentistry (AAPD) *Guidelines for Monitoring and Management of Pediatric Patients Before, During, and After Sedation for Diagnostic and Therapeutic Procedures*.
- Lines 782-834: Reorganized and modified the definition of minimal sedation.
- Lines 825-834: Consistent with the reference to the AAP/AAPD *Guidelines* on lines 735-737, other references to sedation and anesthesia for children were deleted.
- Line 938: Added the American Society of Anesthesiologists' (ASA) "Examples" of Patient Physical Status Classifications to the last column of the table, consistent with 2014 ASA policy.
- Lines 903-905: Modified the definition to better reflect the concept that ultimately, dentists must comply with their state law, rules and/or regulations when providing sedation and anesthesia.
- Line 1340: Revised the section title to insert the words "and Documentation;" section now titled Moderate Sedation Course Duration and Documentation.

- Lines 1341-1371: Determined that the hours and content should remain at “a minimum of 60 hours of instruction plus administration of sedation for at least 20 individually managed patients” because moderately sedated patients via either route require the same attentiveness and monitoring; there should be no difference in the training requirements for the routes of administration.
- Lines 1344-1350: Inserted new competencies to be achieved during participation in moderate sedation education and training as well as required documentation to be provided and maintained by the course director.
- Lines 1393-1427: The Section titled, “VI. Additional Sources of Information” will be deleted from the formal policy statement per the suggestion of the Speaker of the House. To ensure that current information is available to members at all times, supplemental information and resources will be posted on ADA.org in support of the Guidelines, in a readily-accessible area. This allows real-time updating by CDEL.

Recognition and Appreciation: The Council and the Association rely on the expertise of the members of the Anesthesiology Committee to assist in anesthesiology related matters. These dental and medical anesthesia experts are held in high regard by their appointing organizations and the ADA. The Council appreciates the contributions made by the following Committee members and their organizations:

Dr. David Sarrett, Committee Chair (Dean, Virginia Commonwealth University School of Dentistry; Member Council on Dental Education and Licensure)
 Dr. Edwin Ginsberg, representing the American Academy of Periodontology (Periodontist in Private Practice; Site Director of Periodontics at North Shore-LIJ Health System; faculty member of the Hofstra North Shore-LIJ School of Medicine)
 Dr. Joseph Giovannitti, representing the American Society of Dentist Anesthesiologists (Professor and Dental Anesthesiology Department Chair, University of Pittsburgh School of Dental Medicine)
 Dr. Andrew Herlich, representing the American Society of Anesthesiologists (Professor of Anesthesiology, Staff Anesthesiologist, University of Pittsburgh Medical Center Mercy)
 Dr. Bryan Moore, representing the American Dental Association (General Dentist in Private Practice providing moderate sedation)
 Dr. Daniel Sarasin, representing the American Dental Society of Anesthesiology (Oral Surgeon and Partner, Cedar Rapids Oral Surgery; Adjunct Faculty, Department of Oral Diagnosis, Pathology, Radiology and Medicine at the University of Iowa)
 Dr. Sarat (Bobby) Thikkurissy, representing the American Academy of Pediatric Dentistry (Professor, University of Cincinnati Department of Pediatrics and Director, Residency Program, Division of Pediatric Dentistry and Orthodontics)
 Dr. Antwan Treadway, representing the American Association of Oral and Maxillofacial Surgery (Oral Surgeon, Staff Surgeon and Partner, Atlanta Oral and Facial Surgery; Member, Georgia Board of Dentistry)

The Council also appreciates the opportunity to collaborate with the Council on Scientific Affairs, and in particular Dr. William Parker on addressing Resolution 77H-2015 and the Sedation and Anesthesia Guidelines.

Conclusion: The Council appreciated the opportunity to reflect on its previously proposed revisions to the Sedation and Anesthesia during this past year. The Council has concluded its review of the Guidelines for the Use of Sedation and General Anesthesia by Dentists and the Guidelines for Teaching and Pain Control and Sedation to Dentists and Dental Students as directed in Res.77H-2015. Based on the literature, documentation, comment from the communities of interest, as well as the professional knowledge and expertise of the Council and Committee members involved in this review, the Council urges adoption of the following resolution:

Resolution:

37. Resolved, that the Guidelines for the Use of Sedation and General Anesthesia by Dentists (*Trans.*2012:468) and the Guidelines for Teaching and Pain Control and Sedation to Dentists and Dental Students (*Trans.*2012:469) be amended as presented in Appendix 1.

BOARD RECOMMENDATION: Vote Yes.**Vote: Resolution 37**

ASAI	No	COLE	No	GEHANI	No	ROBERTS	Yes
BITTER	Yes	CROWLEY	Yes	JEFFERS	Yes	ROBINSON	Yes
BLACK	No	FAIR	Yes	KLEMMEDSON	Yes	STEVENS	No
BUCKENHEIMER	Yes	FISCH	Yes	KWASNY	No	ZENK	Yes
COHLMIA	Yes	GAMBA	Absent	MARRON-TARRAZZI	No	ZUST	No

Revisions to the Guidelines for the Use of Sedation and General Anesthesia by Dentists (*Trans.2012:468*)

Proposed by the Council on Dental Education and Licensure

Underscore denotes proposed additions
~~Strikethrough~~ denotes proposed deletions

I. Introduction

The administration of local anesthesia, sedation and general anesthesia is an integral part of dental practice. The American Dental Association is committed to the safe and effective use of these modalities by appropriately educated and trained dentists. The purpose of these guidelines is to assist dentists in the delivery of safe and effective sedation and anesthesia.

~~Dentists providing sedation and anesthesia in compliance with their state rules and/or regulations prior to adoption of this document are not subject to Section III. Educational Requirements.~~

Dentists must comply with their state laws, rules and/or regulations when providing sedation and anesthesia and will only be subject to Section III. Educational Requirements as required by those state laws, rules and/or regulations.

Level of sedation is entirely independent of the route of administration. Moderate, and deep sedation or general anesthesia may be achieved via any route of administration and thus an appropriately consistent level of training must be established.

For children ~~12 years of age and under~~, the American Dental Association supports the use of the American Academy of Pediatrics/American Academy of Pediatric Dentistry Guidelines for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures. [Existing language moved from the Definitions section]

II. Definitions

Methods of Anxiety and Pain Control

~~analgesia~~—the diminution or elimination of pain. [moved to Terms section]

~~conscious sedation¹~~—a minimally depressed level of consciousness that retains the patient's ability to independently and continuously maintain an airway and respond appropriately to physical stimulation or verbal command and that is produced by a pharmacological or non-pharmacological method or a combination thereof.

~~In accord with this particular definition, the drugs and/or techniques used should carry a margin of safety wide enough to render unintended loss of consciousness unlikely. Further, patients whose only response is reflex withdrawal from repeated painful stimuli would not be considered to be in a state of conscious sedation.~~

~~combination inhalation-enteral conscious sedation~~ (combined conscious sedation)—conscious sedation using inhalation and enteral agents.

¹—Parenteral conscious sedation may be achieved with the administration of a single agent or by the administration of more than one agent.

When the intent is anxiolysis only, and the appropriate dosage of agents is administered, then the definition of enteral and/or combination inhalation-enteral conscious sedation (combined conscious sedation) does not apply.

~~local anesthesia~~—the elimination of sensation, especially pain, in one part of the body by the topical application or regional injection of a drug. [Moved to Terms section]

~~Note:~~ Although the use of local anesthetics is the foundation of pain control in dentistry and has a long record of safety, dentists must be aware of the maximum, safe dosage limits for each patient. Large doses of local anesthetics in themselves may result in central nervous system depression, especially in combination with sedative agents. [Moved to Terms section]

~~combination inhalation-enteral conscious sedation~~ (combined conscious sedation)—conscious sedation using inhalation and enteral agents.

When the intent is anxiolysis only, and the appropriate dosage of agents is administered, then the definition of enteral and/or combination inhalation-enteral conscious sedation (combined conscious sedation) does not apply.

minimal sedation (previously known as anxiolysis) - a minimally depressed level of consciousness, produced by a pharmacological method, that retains the patient's ability to independently and continuously maintain an airway and respond *normally* to tactile stimulation and verbal command. Although cognitive function and coordination may be modestly impaired, ventilatory and cardiovascular functions are unaffected.²

Further, patients whose only response is reflex withdrawal from repeated painful stimuli would not be considered to be in a state of minimal sedation.

When the intent is minimal sedation for adults, the appropriate initial dosing of a single enteral drug is no more than the maximum recommended dose (MRD) of a drug that can be prescribed for unmonitored home use.

The following definitions apply to administration of minimal sedation:

maximum recommended dose (MRD) - maximum FDA-recommended dose of a drug, as printed in FDA-approved labeling for unmonitored home use.

dosing for minimal sedation via the enteral route – minimal sedation may be achieved by the administration of a drug, either singly or in divided doses, by the enteral route to achieve the desired clinical effect, not to exceed the maximum recommended dose (MRD).

The administration of enteral drugs exceeding the maximum recommended dose during a single appointment is considered to be moderate sedation and the moderate sedation guidelines apply.

incremental dosing—administration of multiple doses of a drug until a desired effect is reached, but not to exceed the maximum recommended dose (MRD).

supplemental dosing—during minimal sedation, supplemental dosing is a single additional dose of the initial drug that may be necessary for prolonged procedures. The supplemental dose should not exceed one-half of the initial dose and should not be administered until the dentist has determined the clinical half-life of the initial dosing has passed. The total aggregate dose must not exceed 1.5x the MRD on the day of treatment.

² Portions e Excerpted from *Continuum of Depth of Sedation: Definition of General Anesthesia and Levels of Sedation/Analgesia, 2014* 2004, of the American Society of Anesthesiologists (ASA). A copy of the full text can be obtained from ASA, 520 N. Northwest Highway, Park Ridge, IL 60068-2573.

~~Nitrous oxide/oxygen may be used in combination with a single enteral drug in minimal sedation.~~

Nitrous oxide/oxygen when used in combination with sedative agent(s) may produce minimal, moderate, deep sedation or general anesthesia. *[This sentence was repositioned within this minimal sedation definition section]*

If more than one enteral drug is administered to achieve the desired sedation effect, with or without the concomitant use of nitrous oxide, the guidelines for moderate sedation must apply.

Note: In accord with this particular definition, the drug(s) and/or techniques used should carry a margin of safety wide enough never to render unintended loss of consciousness. *[Existing language repositioned within this minimal sedation definition section]* The use of the MRD to guide dosing for minimal sedation is intended to create this margin of safety.

~~The use of preoperative sedatives for children (aged 12 and under) prior to arrival in the dental office, except in extraordinary situations, must be avoided due to the risk of unobserved respiratory obstruction during transport by untrained individuals.~~

~~Children (aged 12 and under) can become moderately sedated despite the intended level of minimal sedation; should this occur, the guidelines for moderate sedation apply.~~

~~For children 12 years of age and under, the American Dental Association supports the use of the American Academy of Pediatrics/American Academy of Pediatric Dentistry Guidelines for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures. *[Moved to the Introduction section]*~~

moderate sedation - a drug-induced depression of consciousness during which patients respond *purposefully* to verbal commands, either alone or accompanied by light tactile stimulation. No interventions are required to maintain a patent airway, and spontaneous ventilation is adequate. Cardiovascular function is usually maintained.³

Note: In accord with this particular definition, the drugs and/or techniques used should carry a margin of safety wide enough to render unintended loss of consciousness unlikely. Repeated dosing of an agent before the effects of previous dosing can be fully appreciated may result in a greater alteration of the state of consciousness than is the intent of the dentist. Further, a patient whose only response is reflex withdrawal from a painful stimulus is not considered to be in a state of moderate sedation.

The following definition applies to the administration of moderate or greater sedation:

titration - administration of incremental doses of an intravenous or inhalation drug until a desired effect is reached. Knowledge of each drug's time of onset, peak response and duration of action is essential to avoid over sedation. Although the concept of titration of a drug to effect is critical for patient safety, when the intent is moderate sedation one must know whether the previous dose has taken full effect before administering an additional drug increment.

deep sedation - a drug-induced depression of consciousness during which patients cannot be easily aroused but respond purposefully following repeated or painful stimulation. The ability to independently maintain ventilatory function may be impaired. Patients may require assistance in maintaining a patent airway, and spontaneous ventilation may be inadequate. Cardiovascular function is usually maintained.³

general anesthesia - a drug-induced loss of consciousness during which patients are not arousable, even by painful stimulation. The ability to independently maintain ventilatory function is often impaired. Patients often require

³ Excerpted from *Continuum of Depth of Sedation: Definition of General Anesthesia and Levels of Sedation/Analgesia, 2014 2004*, of the American Society of Anesthesiologists (ASA). A copy of the full text can be obtained from ASA, 520 N. Northwest Highway, Park Ridge, IL 60068-2573.

assistance in maintaining a patent airway, and positive pressure ventilation may be required because of depressed spontaneous ventilation or drug-induced depression of neuromuscular function. Cardiovascular function may be impaired.

Because sedation and general anesthesia are a continuum, it is not always possible to predict how an individual patient will respond. Hence, practitioners intending to produce a given level of sedation should be able to diagnose and manage the physiologic consequences (rescue) for patients whose level of sedation becomes deeper than initially intended.³

For all levels of sedation, the qualified dentist practitioner must have the training, skills, drugs and equipment to identify and manage such an occurrence until either assistance arrives (emergency medical service) or the patient returns to the intended level of sedation without airway or cardiovascular complications.

Routes of Administration

enteral - any technique of administration in which the agent is absorbed through the gastrointestinal (GI) tract or oral mucosa [i.e., oral, rectal, sublingual].

parenteral - a technique of administration in which the drug bypasses the gastrointestinal (GI) tract [i.e., intramuscular (IM), intravenous (IV), intranasal (IN), submucosal (SM), subcutaneous (SC), intraosseous (IO)].

transdermal - a technique of administration in which the drug is administered by patch or iontophoresis through skin.

transmucosal - a technique of administration in which the drug is administered across mucosa such as intranasal, sublingual, or rectal.

inhalation - a technique of administration in which a gaseous or volatile agent is introduced into the lungs and whose primary effect is due to absorption through the gas/blood interface.

Terms

analgesia – the diminution or elimination of pain [Existing language moved from Definitions section]

local anesthesia - the elimination of sensation, especially pain, in one part of the body by the topical application or regional injection of a drug. [Existing language moved from Definitions section]

Note: Although the use of local anesthetics is the foundation of pain control in dentistry and has a long record of safety, dentists must be aware of the maximum, safe dosage limits for each patient. Large doses of local anesthetics in themselves may result in central nervous system depression, especially in combination with sedative agents. [Existing language moved from Definitions section]

qualified dentist - meets the educational requirements for the appropriate level of sedation in accordance with Section III of these Guidelines, or a dentist providing sedation and anesthesia in compliance with their state rules and/or regulations prior to adoption of this document.

³ Excerpted from Continuum of Depth of Sedation: Definition of General Anesthesia and Levels of Sedation/Analgesia, 2014 2004, of the American Society of Anesthesiologists (ASA). A copy of the full text can be obtained from ASA, 520 N. Northwest Highway, Park Ridge, IL 60068-2573.

operating dentist – dentist with primary responsibility for providing operative dental care while a qualified dentist or independently practicing qualified anesthesia healthcare provider administers minimal, moderate or deep sedation or general anesthesia.

competency – displaying special skill or knowledge derived from training and experience.

must/shall - indicates an imperative need and/or duty; an essential or indispensable item; mandatory.

should - indicates the recommended manner to obtain the standard; highly desirable.

may - indicates freedom or liberty to follow a reasonable alternative.

continual - repeated regularly and frequently in a steady succession.

continuous - prolonged without any interruption at any time.

time-oriented anesthesia record - documentation at appropriate time intervals of drugs, doses and physiologic data obtained during patient monitoring.

immediately available – on site in the facility and available for immediate use.

American Society of Anesthesiologists (ASA) Patient Physical Status Classification⁴

Classification	Definition	Examples, including but not limited to:
ASA I	A normal healthy patient	Healthy, non-smoking, no or minimal alcohol use
ASA II	A patient with mild systemic disease	Mild diseases only without substantive functional limitations. Examples include (but not limited to): current smoker, social alcohol drinker, pregnancy, obesity (30 < BMI < 40), well-controlled DM/HTN, mild lung disease
ASA III	A patient with severe systemic disease	Substantive functional limitations; One or more moderate to severe diseases. Examples include (but not limited to): poorly controlled DM or HTN, COPD, morbid obesity (BMI ≥40), active hepatitis, alcohol dependence or abuse, implanted pacemaker, moderate reduction of ejection fraction, *ESRD undergoing regularly scheduled dialysis, premature infant PCA < 60 weeks, history (>3 months) of MI, CVA, TIA, or CAD/stents.
ASA IV	A patient with severe systemic disease that is a constant threat to life	Examples include (but not limited to): recent (< 3 months) MI, CVA, TIA, or CAD/stents, ongoing cardiac ischemia or severe valve dysfunction, severe reduction of ejection fraction, sepsis, DIC, ARD or *ESRD not undergoing regularly scheduled dialysis
ASA V	A moribund patient who is not expected to survive without the operation	Examples include (but not limited to): ruptured abdominal/thoracic aneurysm, massive trauma, intracranial bleed with mass effect, ischemic bowel in the face of significant cardiac pathology or multiple organ/system dysfunction
ASA VI	A declared brain-dead patient whose organs are being removed for donor purposes	

⁴ ASA Physical Status Classification System is reprinted with permission of the American Society of Anesthesiologists, 520 N. Northwest Highway, Park Ridge, IL 60068-2573. Updated by ASA House of Delegates, October 15, 2014.

*The addition of “E” denotes Emergency surgery: (An emergency is defined as existing when delay in treatment of the patient would lead to a significant increase in the threat to life or body part)

American Society of Anesthesiologists Fasting Guidelines ⁵

Ingested Material	Minimum Fasting Period
Clear liquids	2 hours
Breast milk	4 hours
Infant formula	6 hours
Nonhuman milk	6 hours
Light meal	6 hours
Fatty meal	8 hours

III. Educational Requirements

A. Minimal Sedation

1. To administer minimal sedation the dentist must demonstrate competency by having ~~have~~ successfully completed:

a. training ~~to the level of competency~~ in minimal sedation consistent with that prescribed in the *ADA Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students*,

or

b. ~~a comprehensive training program~~ in moderate sedation that satisfies the requirements described in the Moderate Sedation section of the *ADA Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students* at the time training was commenced,

or

c. ~~b.~~ an advanced education program accredited by the ~~ADA~~ Commission on Dental Accreditation that affords comprehensive and appropriate training necessary to administer and manage minimal sedation commensurate with these guidelines;

and

d. a current certification in Basic Life Support for Healthcare Providers.

2. Administration of minimal sedation by another qualified dentist or independently practicing qualified anesthesia healthcare provider requires the operating dentist and his/her clinical staff to maintain current certification in Basic Life Support for Healthcare Providers.

B. Moderate Sedation

1. To administer moderate sedation, the dentist must demonstrate competency by having ~~have~~ successfully completed:

a. a comprehensive training program in moderate sedation that satisfies the requirements described in the Moderate Sedation section of the *ADA Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students* at the time training was commenced,

or

⁵ American Society of Anesthesiologists: Practice Guidelines for preoperative fasting and the use of pharmacologic agents to reduce the risk of pulmonary aspiration: application to healthy patients undergoing elective procedures. *Anesthesiology* 114:495. 2011. Reprinted with permission.

b. an advanced education program accredited by the ADA Commission on Dental Accreditation that affords comprehensive and appropriate training necessary to administer and manage moderate sedation commensurate with these guidelines;

and

c. 1) a current certification in Basic Life Support for Healthcare Providers and 2) either current certification in Advanced Cardiac Life Support (ACLS or equivalent) or completion of an appropriate dental sedation/anesthesia emergency management course on the same recertification cycle that is required for ACLS.

2. Administration of moderate sedation by another qualified dentist or independently practicing qualified anesthesia healthcare provider requires the operating dentist and his/her clinical staff to maintain current certification in Basic Life Support for Healthcare Providers.

C. Deep Sedation or General Anesthesia

1. To administer deep sedation or general anesthesia, the dentist must demonstrate competency by having have completed:

a. an advanced education program accredited by the ADA Commission on Dental Accreditation that affords comprehensive and appropriate training necessary to administer and manage deep sedation or general anesthesia, commensurate with Part IV.C of these guidelines;

and

b. 1) a current certification in Basic Life Support for Healthcare Providers and 2) either current certification in Advanced Cardiac Life Support (ACLS or equivalent) or completion of an appropriate dental sedation/anesthesia emergency management course on the same re-certification cycle that is required for ACLS.

2. Administration of deep sedation or general anesthesia by another qualified dentist or independently practicing qualified anesthesia healthcare provider requires the operating dentist and his/her clinical staff to maintain current certification in Basic Life Support (BLS) Course for the Healthcare Provider.

~~For all levels of sedation and anesthesia, dentists, who are currently providing sedation and anesthesia in compliance with their state rules and/or regulations prior to adoption of this document, are not subject to these educational requirements. However, all dentists providing sedation and general anesthesia in their offices or the offices of other dentists should comply with the Clinical Guidelines in this document.~~

IV. Clinical Guidelines

A. Minimal sedation

1. Patient History and Evaluation

Patients considered for minimal sedation must be suitably evaluated prior to the start of any sedative procedure. In healthy or medically stable individuals (ASA I, II) this should ~~may~~ consist of a review of their current medical history and medication use. However, In addition, patients with significant medical considerations (ASA III, IV) may require consultation with their primary care physician or consulting medical specialist.

2. Pre-Operative Evaluation and Preparation

- The patient, parent, legal guardian or care giver must be advised regarding the procedure associated with the delivery of any sedative agents and informed consent for the proposed sedation must be obtained.
- Determination of adequate oxygen supply and equipment necessary to deliver oxygen under positive pressure must be completed.
- An appropriate focused physical evaluation ~~must-should~~ be performed ~~as deemed appropriate.~~

- Baseline vital signs including body weight, height, blood pressure, pulse rate, and respiration rate must be obtained unless invalidated by the nature of the patient, procedure or equipment ~~the patient's behavior prohibits such determination.~~ Body temperature should be measured when clinically indicated.
- Preoperative dietary restrictions must be considered based on the sedative technique prescribed.
- Pre-operative verbal and written instructions must be given to the patient, parent, escort, legal guardian or care giver.

3. Personnel and Equipment Requirements

Personnel:

- At least one additional person trained in Basic Life Support for Healthcare Providers must be present in addition to the dentist.

Equipment:

- A positive-pressure oxygen delivery system suitable for the patient being treated must be immediately available.
- Documentation of compliance with manufacturers' recommended maintenance of monitors, anesthesia delivery systems, and other anesthesia-related equipment should be maintained. A pre-procedural check of equipment for each administration of sedation must be performed.
- When inhalation equipment is used, it must have a fail-safe system that is appropriately checked and calibrated. The equipment must also have either (1) a functioning device that prohibits the delivery of less than 30% oxygen or (2) an appropriately calibrated and functioning in-line oxygen analyzer with audible alarm.
- An appropriate scavenging system must be available if gases other than oxygen or air are used.

4. Monitoring and Documentation

Monitoring: A dentist, or at the dentist's direction, an appropriately trained individual, must remain in the operatory during active dental treatment to monitor the patient continuously until the patient meets the criteria for discharge to the recovery area. The appropriately trained individual must be familiar with monitoring techniques and equipment. Monitoring must include:

Consciousness:

- Level of sedation (e.g., responsiveness to verbal commands) must be continually assessed.

Oxygenation:

- ~~Color of mucosa, skin or blood must be evaluated continually.~~
- Oxygen saturation by pulse oximetry may be clinically useful and should be considered.

Ventilation:

- The dentist and/or appropriately trained individual must observe chest excursions ~~continually.~~
- The dentist and/or appropriately trained individual must verify respirations ~~continually.~~

Circulation:

- Blood pressure and heart rate should be evaluated pre-operatively, post-operatively and intraoperatively as necessary (unless the patient is unable to tolerate such monitoring).

Documentation: An appropriate sedative record must be maintained, including the names of all drugs administered, time administered and route of administration, including local anesthetics, dosages, and monitored physiological parameters.

5. Recovery and Discharge

- Oxygen and suction equipment must be immediately available if a separate recovery area is utilized.
- The qualified dentist or appropriately trained clinical staff must monitor the patient during recovery until the patient is ready for discharge by the dentist.
- The qualified dentist must determine and document that level of consciousness, oxygenation, ventilation and circulation are satisfactory prior to discharge.
- Post-operative verbal and written instructions must be given to the patient, parent, escort, legal guardian or care giver.

6. Emergency Management

- If a patient enters a deeper level of sedation than the dentist is qualified to provide, the dentist must stop the dental procedure until the patient returns is returned to the intended level of sedation.
- The qualified dentist is responsible for the sedative management, adequacy of the facility and staff, diagnosis and treatment of emergencies related to the administration of minimal sedation and providing the equipment and protocols for patient rescue.

7. Management of Children

~~For children 12 years of age and under, the American Dental Association supports the use of the American Academy of Pediatrics/American Academy of Pediatric Dentistry Guidelines for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures.~~

B. Moderate Sedation

1. Patient History and Evaluation

Patients considered for moderate sedation must undergo an evaluation prior to the administration of any sedative. ~~be suitably evaluated prior to the start of any sedative procedure. In healthy or medically stable individuals (ASA I, II)†~~ This should consist of at least a review at an appropriate time of their ~~current~~ medical history and medication use and NPO (nothing by mouth) status. ~~However, p-~~ In addition, patients with significant medical considerations (e.g., ASA III, IV) ~~may~~ should also require consultation with their primary care physician or consulting medical specialist. Assessment of Body Mass Index (BMI)* should be considered part of a pre-procedural workup. Patients with elevated BMI may be at increased risk for airway associated morbidity, particularly if in association with other factors such as obstructive sleep apnea.

*Standardized BMI category definitions can be obtained from the Centers for Disease Control and Prevention or the American Society of Anesthesiologists.

2. Pre-operative Evaluation and Preparation

- The patient, parent, legal guardian or care giver must be advised regarding the procedure associated with the delivery of any sedative agents and informed consent for the proposed sedation must be obtained.
- Determination of adequate oxygen supply and equipment necessary to deliver oxygen under positive pressure must be completed.
- An appropriate focused physical evaluation ~~must~~ should be performed ~~as deemed appropriate.~~

- Baseline vital signs including body weight, height, blood pressure, pulse rate, respiration rate, and blood oxygen saturation by pulse oximetry must be obtained unless precluded by the nature of the patient, procedure or equipment ~~the patient's behavior prohibits such determination.~~ Body temperature should be measured when clinically indicated.
- ~~Preoperative dietary restrictions must be considered based on the sedative technique prescribed.~~
- Pre-operative verbal or written instructions must be given to the patient, parent, escort, legal guardian or care giver, including pre-operative fasting instructions based on the ASA Summary of Fasting and Pharmacologic Recommendations.

3. Personnel and Equipment Requirements

Personnel:

- At least one additional person trained in Basic Life Support for Healthcare Providers must be present in addition to the dentist.

Equipment:

- A positive-pressure oxygen delivery system suitable for the patient being treated must be immediately available.
- Documentation of compliance with manufacturers' recommended maintenance of monitors, anesthesia delivery systems, and other anesthesia-related equipment should be maintained. A pre-procedural check of equipment for each administration of sedation must be performed.
- When inhalation equipment is used, it must have a fail-safe system that is appropriately checked and calibrated. The equipment must also have either (1) a functioning device that prohibits the delivery of less than 30% oxygen or (2) an appropriately calibrated and functioning in-line oxygen analyzer with audible alarm.
- The equipment necessary for monitoring end-tidal CO₂ and auscultation of breath sounds must be immediately available.
- An appropriate scavenging system must be available if gases other than oxygen or air are used.
- The equipment necessary to establish intravascular or intraosseous ~~intravenous~~ access ~~must~~ should be available until the patient meets discharge criteria.

4. Monitoring and Documentation

Monitoring: A qualified dentist administering moderate sedation must remain in the operatory room to monitor the patient continuously until the patient meets the criteria for recovery. When active treatment concludes and the patient recovers to a minimally sedated level a qualified auxiliary may be directed by the dentist to remain with the patient and continue to monitor them as explained in the guidelines until they are discharged from the facility. The dentist must not leave the facility until the patient meets the criteria for discharge and is discharged from the facility. Monitoring must include:

Consciousness:

- Level of sedation consciousness (e.g., responsiveness to verbal command) must be continually assessed.

Oxygenation:

- ~~Color of mucosa, skin or blood must be evaluated continually.~~
- Oxygen saturation must be evaluated by pulse oximetry continuously.

Ventilation:

- The dentist must observe chest excursions continually.

- The dentist must monitor ventilation and/or breathing by monitoring end-tidal CO₂ unless precluded or invalidated by the nature of the patient, procedure or equipment. In addition, ventilation should be monitored by continual observation of qualitative signs, including ~~chest excursion and~~ auscultation of breath sounds with a precordial or pretracheal stethoscope. ~~This can be accomplished by auscultation of breath sounds, monitoring end-tidal CO₂ or by verbal communication with the patient.~~

Circulation:

- The dentist must continually evaluate blood pressure and heart rate unless invalidated by the nature of the patient, procedure or equipment. ~~the patient is unable to tolerate~~ and this is noted in the time-oriented anesthesia record.
- Continuous ECG monitoring of patients with significant cardiovascular disease should be considered.

Documentation:

- Appropriate time-oriented anesthetic record must be maintained, including the names of all drugs, dosages and their administration times, including local anesthetics, dosages and monitored physiological parameters. ~~(See Additional Sources of Information for sample of a time-oriented anesthetic record).~~
- Pulse oximetry, heart rate, respiratory rate, blood pressure and level of consciousness must be recorded continually.

5. Recovery and Discharge

- Oxygen and suction equipment must be immediately available if a separate recovery area is utilized.
- The qualified dentist or appropriately trained clinical staff must continually monitor the patient's blood pressure, heart rate, oxygenation and level of consciousness.
- The qualified dentist must determine and document that level of consciousness; oxygenation, ventilation and circulation are satisfactory for discharge.
- Post-operative verbal and written instructions must be given to the patient, parent, escort, legal guardian or care giver.
- If a pharmacological reversal agent is administered before discharge criteria have been met, the patient must be monitored for a longer period than usual before discharge, since re-sedation may occur once the effects of the reversal agent have waned.

6. Emergency Management

- If a patient enters a deeper level of sedation than the dentist is qualified to provide, the dentist must stop the dental procedure until the patient ~~returns~~ is returned to the intended level of sedation.
- The qualified dentist is responsible for the sedative management, adequacy of the facility and staff, diagnosis and treatment of emergencies related to the administration of moderate sedation and providing the equipment, drugs and protocol for patient rescue.

7. Management of Children

~~—For children 12 years of age and under, the American Dental Association supports the use of the American Academy of Pediatrics/American Academy of Pediatric Dentistry *Guidelines for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures.*~~

C. Deep Sedation or General Anesthesia

1. Patient History and Evaluation

Patients considered for deep sedation or general anesthesia must undergo an evaluation prior to be suitably evaluated prior to the start the administration of any sedative procedure. In healthy or medically stable individuals (ASA I, II) t This must consist of at least a review of their ~~current~~ medical history and medication use and NPO (nothing by mouth) status. ~~In addition, However,~~ patients with significant medical considerations (e.g., ASA III, IV) ~~may~~ should also require consultation with their primary care physician or consulting medical specialist. Assessment of Body Mass Index (BMI)* should be considered part of a pre-procedural workup. Patients with elevated BMI may be at increased risk for airway associated morbidity, particularly if in association with other factors such as obstructive sleep apnea.

*Standardized BMI category definitions can be obtained from the Centers for Disease Control and Prevention or the American Society of Anesthesiologists.

2. Pre-operative Evaluation and Preparation

- The patient, parent, legal guardian or care giver must be advised regarding the procedure associated with the delivery of any sedative or anesthetic agents and informed consent for the proposed sedation/anesthesia must be obtained.
- Determination of adequate oxygen supply and equipment necessary to deliver oxygen under positive pressure must be completed.
- A focused physical evaluation must be performed as deemed appropriate.
- Baseline vital signs including body weight, height, blood pressure, pulse rate, respiration rate, and blood oxygen saturation by pulse oximetry must be obtained unless invalidated by the patient, procedure or equipment the patient's behavior prohibits such determination. In addition, body temperature should be measured when clinically appropriate.
- ~~Preoperative dietary restrictions must be considered based on the sedative/anesthetic technique prescribed.~~
- Pre-operative verbal and written instructions must be given to the patient, parent, escort, legal guardian or care giver, including pre-operative fasting instructions based on the ASA Summary of Fasting and Pharmacologic Recommendations.
- An intravenous line, which is secured throughout the procedure, must be established except as provided in part IV. C.6. ~~Pediatric and~~ Special Needs Patients.

3. Personnel and Equipment Requirements

Personnel: A minimum of three (3) individuals must be present.

- A dentist qualified in accordance with part III. C. of these Guidelines to administer the deep sedation or general anesthesia.
- Two additional individuals who have current certification of successfully completing a Basic Life Support (BLS) Course for the Healthcare Provider.
- When the same individual administering the deep sedation or general anesthesia is performing the dental procedure, one of the additional appropriately trained team members must be designated for patient monitoring.

Equipment:

- A positive-pressure oxygen delivery system suitable for the patient being treated must be immediately available.
- Documentation of compliance with manufacturers' recommended maintenance of monitors, anesthesia delivery systems, and other anesthesia-related equipment should be maintained. A pre-procedural check of equipment for each administration must be performed.

- When inhalation equipment is used, it must have a fail-safe system that is appropriately checked and calibrated. The equipment must also have either (1) a functioning device that prohibits the delivery of less than 30% oxygen or (2) an appropriately calibrated and functioning in-line oxygen analyzer with audible alarm.
- An appropriate scavenging system must be available if gases other than oxygen or air are used.
- The equipment necessary to establish intravenous access must be available.
- Equipment and drugs necessary to provide advanced airway management, and advanced cardiac life support must be immediately available.
- The equipment necessary for monitoring end-tidal CO₂ and auscultation of breath sounds must be immediately available.
- ~~If volatile anesthetic agents are utilized, a capnograph must be utilized and an inspired agent analysis monitor should be considered.~~
- Resuscitation medications and an appropriate defibrillator must be immediately available.

4. Monitoring and Documentation

Monitoring: A qualified dentist administering deep sedation or general anesthesia must remain in the operatory room to monitor the patient continuously until the patient meets the criteria for recovery. The dentist must not leave the facility until the patient meets the criteria for discharge and is discharged from the facility. Monitoring must include:

Oxygenation:

- ~~Color of mucosa, skin or blood must be continually evaluated.~~
- Oxygenation saturation must be evaluated continuously by pulse oximetry.

Ventilation:

- Intubated patient: End-tidal CO₂ must be continuously monitored and evaluated.
- Non-intubated patient: ~~Breath sounds via auscultation and/or e~~ End-tidal CO₂ must be continually monitored and evaluated unless precluded or invalidated by the nature of the patient, procedure, or equipment. In addition, ventilation should be monitored and evaluated by continual observation of qualitative signs, including auscultation of breath sounds with a precordial or pretracheal stethoscope.
- Respiration rate must be continually monitored and evaluated.

Circulation:

- The dentist must continuously evaluate heart rate and rhythm via ECG throughout the procedure, as well as pulse rate via pulse oximetry.
- The dentist must continually evaluate blood pressure.

Temperature:

- A device capable of measuring body temperature must be readily available during the administration of deep sedation or general anesthesia.
- The equipment to continuously monitor body temperature should be available and must be performed whenever triggering agents associated with malignant hyperthermia are administered.

Documentation:

- Appropriate time-oriented anesthetic record must be maintained, including the names of all drugs, dosages and their administration times, including local anesthetics and monitored physiological parameters. ~~(See Additional Sources of Information for sample of a time-oriented anesthetic record)~~
- Pulse oximetry and end-tidal CO₂ measurements (if taken), heart rate, respiratory rate and blood pressure must be recorded continually.

5. Recovery and Discharge

- Oxygen and suction equipment must be immediately available if a separate recovery area is utilized.
- The dentist or clinical staff must continually monitor the patient's blood pressure, heart rate, oxygenation and level of consciousness.
- The dentist must determine and document that level of consciousness; oxygenation, ventilation and circulation are satisfactory for discharge.
- Post-operative verbal and written instructions must be given to the patient; and parent, escort, guardian or care giver.

6. Pediatric Patients and Those with Special Needs Patients

Because many dental patients undergoing deep sedation or general anesthesia are mentally and/or physically challenged, it is not always possible to have a comprehensive physical examination or appropriate laboratory tests prior to administering care. When these situations occur, the dentist responsible for administering the deep sedation or general anesthesia should document the reasons preventing the recommended preoperative management.

In selected circumstances, deep sedation or general anesthesia may be utilized without establishing an indwelling intravenous line. These selected circumstances may include very brief procedures or periods of time, which, for example, may occur in some pediatric patients; or the establishment of intravenous access after deep sedation or general anesthesia has been induced because of poor patient cooperation.

7. Emergency Management

The qualified dentist is responsible for sedative/anesthetic management, adequacy of the facility and staff, diagnosis and treatment of emergencies related to the administration of deep sedation or general anesthesia and providing the equipment, drugs and protocols for patient rescue.

V. Additional Sources of Information

American Dental Association. Example of a time oriented anesthesia record at www.ada.org.

American Academy of Pediatric Dentistry (AAPD). *Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures: An Update*. Developed through a collaborative effort between the American Academy of Pediatrics and the AAPD. Available at <http://www.aapd.org/policies>.

American Academy of Periodontology (AAP). *Guidelines: In-Office Use of Conscious Sedation in Periodontics*. Available at <http://www.perio.org/resources-products/posppr3-1.html>. The AAP rescinded this policy in 2008.

American Association of Oral and Maxillofacial Surgeons (AAOMS). *Parameters and Pathways: Clinical Practice Guidelines for Oral and Maxillofacial Surgery (AAOMS ParPath o1) Anesthesia in Outpatient Facilities*. Contact AAOMS at 1-847-678-6200 or visit <http://www.aaoms.org/index.php>

American Association of Oral and Maxillofacial Surgeons (AAOMS). *Office Anesthesia Evaluation Manual 7th Edition*. Contact AAOMS at 1-847-678-6200 or visit <http://www.aaoms.org/index.php>

American Society of Anesthesiologists (ASA). *Practice Guidelines for Preoperative Fasting and the Use of Pharmacological Agents to Reduce the Risk of Pulmonary Aspiration: Application to Healthy Patients Undergoing Elective Procedures*. Available at <https://ecommerce.asahq.org/p-178-practice-guidelines-for-preoperative-fasting.aspx>

American Society of Anesthesiologists (ASA). *Practice Guidelines for Sedation and Analgesia by Non-Anesthesiologists*. Available at <http://www.asahq.org/publicationsAndServices/practiceparam.htm#sedation>. The ASA has other

anesthesia resources that might be of interest to dentists. For more information, go to
<http://www.asahq.org/publicationsAndServices/sgstoc.htm>

Commission on Dental Accreditation (CODA). *Accreditation Standards* for Predoctoral and Advanced Dental Education Programs. Available at <http://www.ada.org/115.aspx>.

National Institute for Occupational Safety and Health (NIOSH). *Controlling Exposures to Nitrous Oxide During Anesthetic Administration* (NIOSH Alert: 1994 Publication No. 94-100). Available at <http://www.cdc.gov/niosh/docs/94-100/>

Dionne, Raymond A.; Yagiela, John A., et al. Balancing efficacy and safety in the use of oral sedation in dental outpatients. *JADA* 2006;137(4):502-13. ADA members can access this article online at <http://jada.ada.org/cgi/content/full/137/4/502>

Revisions to the Guidelines for Teaching Pain Control and Sedation to
Dentists and Dental Students (*Trans.2012:469*)

Proposed by the Council on Dental Education and Licensure

Underscore denotes proposed additions

~~Strikethrough~~ denotes proposed deletions

I. Introduction

The administration of local anesthesia, sedation and general anesthesia is an integral part of the practice of dentistry. The American Dental Association is committed to the safe and effective use of these modalities by appropriately educated and trained dentists.

Anxiety and pain control can be defined as the application of various physical, chemical and psychological modalities to the prevention and treatment of preoperative, operative and postoperative patient anxiety and pain to allow dental treatment to occur in a safe and effective manner. It involves all disciplines of dentistry and, as such, is one of the most important aspects of dental education. The intent of these *Guidelines* is to provide direction for the teaching of pain control and sedation to dentists and can be applied at all levels of dental education from predoctoral through continuing education. They are designed to teach initial competency in pain control and minimal and moderate sedation techniques.

These *Guidelines* recognize that many dentists have acquired a high degree of competency in the use of anxiety and pain control techniques through a combination of instruction and experience. It is assumed that this has enabled these teachers and practitioners to meet the educational criteria described in this document.

It is not the intent of the *Guidelines* to fit every program into the same rigid educational mold. This is neither possible nor desirable. There must always be room for innovation and improvement. They do, however, provide a reasonable measure of program acceptability, applicable to all institutions and agencies engaged in predoctoral and continuing education.

The curriculum in anxiety and pain control is a continuum of educational experiences that will extend over several years of the predoctoral program. It should provide the dental student with the knowledge and skills necessary to provide minimal sedation to alleviate anxiety and control pain without inducing detrimental physiological or psychological side effects. Dental schools whose goal is to have predoctoral students achieve competency in techniques such as local anesthesia and nitrous oxide inhalation and minimal sedation must meet all of the goals, prerequisites, didactic content, clinical experiences, faculty and facilities, as described in these *Guidelines*.

Techniques for the control of anxiety and pain in dentistry should include both psychological and pharmacological modalities. Psychological strategies should include simple relaxation techniques for the anxious patient and more comprehensive behavioral techniques to control pain. Pharmacological strategies should include not only local anesthetics but also sedatives, analgesics and other useful agents. Dentists should learn indications and techniques for administering these drugs enterally, parenterally and by inhalation as supplements to local anesthesia.

The predoctoral curriculum should provide instruction, exposure and/or experience in anxiety and pain control, including minimal and moderate sedation. The predoctoral program must also provide the knowledge and skill to enable students to recognize and manage any emergencies that might arise as a consequence of treatment. Predoctoral dental students must complete a course in Basic Life Support for the Healthcare Provider. Though Basic Life Support courses are available online, any course taken online should be followed up with a hands-on component and be approved by the American Heart Association or the American Red Cross.

Local anesthesia is the foundation of pain control in dentistry. Although the use of local anesthetics in dentistry has a long record of safety, dentists must be aware of the maximum safe dosage limit for each patient, since large doses of local anesthetics may increase the level of central nervous system depression with sedation. The use of minimal and moderate sedation requires an understanding of local anesthesia and the physiologic and pharmacologic implications of the local anesthetic agents when combined with the sedative agents.

Level of sedation is entirely independent of the route of administration. Moderate, and deep sedation or general anesthesia may be achieved via any route of administration and thus an appropriately consistent level of training must be established.

For children 12 years of age and under, the American Dental Association supports the use of the American Academy of Pediatrics/American Academy of Pediatric Dentistry Guidelines for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures. [Existing language moved from the Definitions section]

The knowledge, skill and clinical experience required for the safe administration of deep sedation and/or general anesthesia are beyond the scope of predoctoral and continuing education programs. Advanced education programs that teach deep sedation and/or general anesthesia to competency have specific teaching requirements described in the Commission on Dental Accreditation requirements for those advanced programs and represent the educational and clinical requirements for teaching deep sedation and/or general anesthesia in dentistry.

The objective of educating dentists to utilize pain control, sedation and general anesthesia is to enhance their ability to provide oral health care. The American Dental Association urges dentists to participate regularly in continuing education update courses in these modalities in order to remain current.

All areas in which local anesthesia and sedation are being used must be properly equipped with suction, physiologic monitoring equipment, a positive pressure oxygen delivery system suitable for the patient being treated and emergency drugs. Protocols for the management of emergencies must be developed and training programs held at frequent intervals.

II. Definitions

Methods of Anxiety and Pain Control

~~analgesia—the diminution or elimination of pain.~~ [Moved to Terms section]

~~conscious sedation[†]—a minimally depressed level of consciousness that retains the patient's ability to independently and continuously maintain an airway and respond appropriately to physical stimulation or verbal command and that is produced by a pharmacological or non-pharmacological method or a combination thereof.~~

~~In accord with this particular definition, the drugs and/or techniques used should carry a margin of safety wide enough to render unintended loss of consciousness unlikely. Further, patients whose only response is reflex withdrawal from repeated painful stimuli would not be considered to be in a state of conscious sedation.~~

~~combination inhalation–enteral conscious sedation (combined conscious sedation)—conscious sedation using inhalation and enteral agents.~~

~~When the intent is anxiolysis only, and the appropriate dosage of agents is administered, then the definition of enteral and/or combination inhalation–enteral conscious sedation (combined conscious sedation) does not apply.~~

[†]. Parenteral conscious sedation may be achieved with the administration of a single agent or by the administration of more than one agent.

~~local anesthesia~~—the elimination of sensation, especially pain, in one part of the body by the topical application or regional injection of a drug. [Moved to Terms section]

~~Note: Although the use of local anesthetics is the foundation of pain control in dentistry and has a long record of safety, dentists must always be aware of the maximum, safe dosage limits for each patient. Large doses of local anesthetics in themselves may result in central nervous system depression especially in combination with sedative agents.~~ [Moved to Terms section]

minimal sedation (previously known as anxiolysis) - a minimally depressed level of consciousness, produced by a pharmacological method, that retains the patient's ability to independently and continuously maintain an airway and respond *normally* to tactile stimulation and verbal command. Although cognitive function and coordination may be modestly impaired, ventilatory and cardiovascular functions are unaffected.²

~~Further, p~~Patients whose only response is reflex withdrawal from repeated painful stimuli would not be considered to be in a state of minimal sedation.

~~When the intent is minimal sedation for adults, the appropriate initial dosing of a single enteral drug is no more than the maximum recommended dose (MRD) of a drug that can be prescribed for unmonitored home use.~~

The following definitions apply to administration of minimal sedation:

maximum recommended dose (MRD) - maximum FDA-recommended dose of a drug, as printed in FDA-approved labeling for unmonitored home use.

dosing for minimal sedation via the enteral route – minimal sedation may be achieved by the administration of a drug, either singly or in divided doses, by the enteral route to achieve the desired clinical effect, not to exceed the maximum recommended dose (MRD).

The administration of enteral drugs exceeding the maximum recommended dose during a single appointment is considered to be moderate sedation and the moderate sedation guidelines apply.

~~*incremental dosing*—administration of multiple doses of a drug until a desired effect is reached, but not to exceed the maximum recommended dose (MRD).~~

~~*supplemental dosing*—during minimal sedation, supplemental dosing is a single additional dose of the initial drug that may be necessary for prolonged procedures. The supplemental dose should not exceed one-half of the initial dose and should not be administered until the dentist has determined the clinical half-life of the initial dosing has passed. The total aggregate dose must not exceed 1.5x the MRD on the day of treatment.~~

~~Nitrous oxide/oxygen may be used in combination with a single enteral drug in minimal sedation.~~

Nitrous oxide/oxygen when used in combination with sedative agent(s) may produce minimal, moderate, deep sedation or general anesthesia. [This sentence was repositioned within this minimal sedation definition section]

If more than one enteral drug is administered to achieve the desired sedation effect, with or without the concomitant use of nitrous oxide, the guidelines for moderate sedation must apply.

² Portions ~~o~~ Excerpted from Continuum of Depth of Sedation: Definition of General Anesthesia and Levels of Sedation/Analgesia, 2014, of the American Society of Anesthesiologists (ASA). A copy of the full text can be obtained from ASA, 520 N. Northwest Highway, Park Ridge, IL 60068-2573.

Note: In accord with this particular definition, the drug(s) and/or techniques used should carry a margin of safety wide enough never to render unintended loss of consciousness. [Existing language repositioned within this minimal sedation definition section] The use of the MRD to guide dosing for minimal sedation is intended to create this margin of safety.

~~The use of preoperative sedatives for children (aged 12 and under) prior to arrival in the dental office, except in extraordinary situations, must be avoided due to the risk of unobserved respiratory obstruction during transport by untrained individuals.~~

~~Children (aged 12 and under) can become moderately sedated despite the intended level of minimal sedation; should this occur, the guidelines for moderate sedation apply.~~

~~For children 12 years of age and under, the American Dental Association supports the use of the American Academy of Pediatrics/American Academy of Pediatric Dentistry Guidelines for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures. [Moved to the Introduction section]~~

moderate sedation - a drug-induced depression of consciousness during which patients respond *purposefully* to verbal commands, either alone or accompanied by light tactile stimulation. No interventions are required to maintain a patent airway, and spontaneous ventilation is adequate. Cardiovascular function is usually maintained.³

Note: In accord with this particular definition, the drugs and/or techniques used should carry a margin of safety wide enough to render unintended loss of consciousness unlikely. Repeated dosing of an agent before the effects of previous dosing can be fully appreciated may result in a greater alteration of the state of consciousness than is the intent of the dentist. Further, a patient whose only response is reflex withdrawal from a painful stimulus is not considered to be in a state of moderate sedation.

The following definition applies to administration of moderate and deeper levels of sedation:

titration - administration of incremental doses of an intravenous or inhalation drug until a desired effect is reached. Knowledge of each drug's time of onset, peak response and duration of action is essential to avoid over sedation. Although the concept of titration of a drug to effect is critical for patient safety, when the intent is moderate sedation one must know whether the previous dose has taken full effect before administering an additional drug increment.

deep sedation - a drug-induced depression of consciousness during which patients cannot be easily aroused but respond purposefully following repeated or painful stimulation. The ability to independently maintain ventilatory function may be impaired. Patients may require assistance in maintaining a patent airway, and spontaneous ventilation may be inadequate. Cardiovascular function is usually maintained.³

general anesthesia – a drug-induced loss of consciousness during which patients are not arousable, even by painful stimulation. The ability to independently maintain ventilatory function is often impaired. Patients often require assistance in maintaining a patent airway, and positive pressure ventilation may be required because of depressed spontaneous ventilation or drug-induced depression of neuromuscular function. Cardiovascular function may be impaired.³

Because sedation and general anesthesia are a continuum, it is not always possible to predict how an individual patient will respond. Hence, practitioners intending to produce a given level of sedation should be able to diagnose and manage the physiologic consequences (rescue) for patients whose level of sedation becomes deeper than initially intended.³

³ Excerpted from *Continuum of Depth of Sedation: Definition of General Anesthesia and Levels of Sedation/Analgesia, 2014 2004*, of the American Society of Anesthesiologists (ASA). A copy of the full text can be obtained from ASA, 520 N. Northwest Highway, Park Ridge, IL 60068-2573.

For all levels of sedation, the qualified dentist practitioner must have the training, skills, drugs and equipment to identify and manage such an occurrence until either assistance arrives (emergency medical service) or the patient returns to the intended level of sedation without airway or cardiovascular complications.

Routes of Administration

enteral - any technique of administration in which the agent is absorbed through the gastrointestinal (GI) tract or oral mucosa [i.e., oral, rectal, sublingual].

parenteral - a technique of administration in which the drug bypasses the gastrointestinal (GI) tract [i.e., intramuscular (IM), intravenous (IV), intranasal (IN), submucosal (SM), subcutaneous (SC), intraosseous (IO)].

transdermal - a technique of administration in which the drug is administered by patch or iontophoresis through skin.

transmucosal – a technique of administration in which the drug is administered across mucosa such as intranasal, sublingual, or rectal.

inhalation - a technique of administration in which a gaseous or volatile agent is introduced into the lungs and whose primary effect is due to absorption through the gas/blood interface.

Terms

analgesia – the diminution or elimination of pain [Existing language moved from Definitions section]

local anesthesia - the elimination of sensation, especially pain, in one part of the body by the topical application or regional injection of a drug. [Existing language moved from Definitions section]

Note: Although the use of local anesthetics is the foundation of pain control in dentistry and has a long record of safety, dentists must always be aware of the maximum, safe dosage limits for each patient. Large doses of local anesthetics in themselves may result in central nervous system depression especially in combination with sedative agents. [Existing language moved from Definitions section]

~~*qualified dentist* – meets the educational requirements for the appropriate level of sedation in accordance with Section III of these Guidelines, or a dentist providing sedation and anesthesia in compliance with their state rules and/or regulations prior to adoption of this document.~~

must/shall - indicates an imperative need and/or duty; an essential or indispensable item; mandatory.

should - indicates the recommended manner to obtain the standard; highly desirable.

may - indicates freedom or liberty to follow a reasonable alternative.

continual - repeated regularly and frequently in a steady succession.

continuous - prolonged without any interruption at any time.

time-oriented anesthesia record - documentation at appropriate time intervals of drugs, doses and physiologic data obtained during patient monitoring.

immediately available – on site in the facility and available for immediate use.

Levels of Knowledge

familiarity - a simplified knowledge for the purpose of orientation and recognition of general principles.

in-depth - a thorough knowledge of concepts and theories for the purpose of critical analysis and the synthesis of more complete understanding (highest level of knowledge).

Levels of Skill

exposed - the level of skill attained by observation of or participation in a particular activity.

competent - displaying special skill or knowledge derived from training and experience.

proficient - the level of skill attained when a particular activity is accomplished with repeated quality and a more efficient utilization of time (highest level of skill).

American Society of Anesthesiologists (ASA) Patient Physical Status Classification⁴

Classification	Definition	Examples, including but not limited to:
ASA I	A normal healthy patient	Healthy, non-smoking, no or minimal alcohol use
ASA II	A patient with mild systemic disease	Mild diseases only without substantive functional limitations. Examples include (but not limited to): current smoker, social alcohol drinker, pregnancy, obesity (30 < BMI < 40), well-controlled DM/HTN, mild lung disease
ASA III	A patient with severe systemic disease	Substantive functional limitations; One or more moderate to severe diseases. Examples include (but not limited to): poorly controlled DM or HTN, COPD, morbid obesity (BMI ≥40), active hepatitis, alcohol dependence or abuse, implanted pacemaker, moderate reduction of ejection fraction, *ESRD undergoing regularly scheduled dialysis, premature infant PCA < 60 weeks, history (>3 months) of MI, CVA, TIA, or CAD/stents.
ASA IV	A patient with severe systemic disease that is a constant threat to life	Examples include (but not limited to): recent (< 3 months) MI, CVA, TIA, or CAD/stents, ongoing cardiac ischemia or severe valve dysfunction, severe reduction of ejection fraction, sepsis, DIC, ARD or *ESRD not undergoing regularly scheduled dialysis
ASA V	A moribund patient who is not expected to survive without the operation	Examples include (but not limited to): ruptured abdominal/thoracic aneurysm, massive trauma, intracranial bleed with mass effect, ischemic bowel in the face of significant cardiac pathology or multiple organ/system dysfunction
ASA VI	A declared brain-dead patient whose organs are being removed for donor purposes	
*The addition of "E" denotes Emergency surgery: (An emergency is defined as existing when delay in treatment of the patient would lead to a significant increase in the threat to life or body part)		

⁴ ASA Physical Status Classification System is reprinted with permission of the American Society of Anesthesiologists, 520 N. Northwest Highway, Park Ridge, IL 60068-2573. Updated by the ASA House of Delegates, October 15, 2014.

American Society of Anesthesiologists' Fasting Guidelines⁵

<u>Ingested Material</u>	<u>Minimum Fasting Period</u>
Clear liquids	2 hours
Breast milk	4 hours
Infant formula	6 hours
Nonhuman milk	6 hours
Light meal	6 hours
Fatty meal	8 hours

Education Courses

Education may be offered at different levels (competency, update, survey courses and advanced education programs). A description of these different levels follows:

1. Competency Courses are designed to meet the needs of dentists who wish to become competent knowledgeable and proficient in the safe and effective administration of local anesthesia, minimal and moderate sedation. They consist of lectures, demonstrations and sufficient clinical participation to assure the faculty that the dentist understands the procedures taught and can safely and effectively apply them so that mastery of the subject is achieved. Faculty must assess and document the dentist's competency upon successful completion of such training. To maintain competency, periodic update courses must be completed.

2. Update Courses are designed for persons with previous training. They are intended to provide a review of the subject and an introduction to recent advances in the field. They should be designed didactically and clinically to meet the specific needs of the participants. Participants must have completed previous competency training (equivalent, at a minimum, to the competency course described in this document) and have current experience to be eligible for enrollment in an update course.

3. Survey Courses are designed to provide general information about subjects related to pain control and sedation. Such courses should be didactic and not clinical in nature, since they are not intended to develop clinical competency.

4. Advanced Education Courses are a component of an advanced dental education program, accredited by the ADA Commission on Dental Accreditation in accord with the *Accreditation Standards* for advanced dental education programs. These courses are designed to prepare the graduate dentist or postdoctoral student in the most comprehensive manner to be competent knowledgeable and proficient in the safe and effective administration of minimal, moderate and deep sedation and general anesthesia.

III. Teaching Pain Control

These *Guidelines* present a basic overview of the recommendations for teaching pain control.

A. General Objectives: Upon completion of a predoctoral curriculum in pain control the dentist must:

1. have an in-depth knowledge of those aspects of anatomy, physiology, pharmacology and psychology involved in the use of various anxiety and pain control methods;

⁵ American Society of Anesthesiologists: Practice Guidelines for preoperative fasting and the use of pharmacologic agents to reduce the risk of pulmonary aspiration: application to healthy patients undergoing elective procedures. *Anesthesiology* 114:495. 2011. Reprinted with permission.

- 988 2. be competent in evaluating the psychological and physical status of the patient, as well as the magnitude of
989 the operative procedure, in order to select the proper regimen;
- 990 3. be competent in monitoring vital functions;
- 991 4. be competent in prevention, recognition and management of related complications;
- 992 5. ~~be familiar with~~ have in-depth knowledge of the appropriateness of and the indications for medical
993 consultation or referral;
- 994 6. be competent in the maintenance of proper records with accurate chart entries recording medical history,
995 physical examination, vital signs, drugs administered and patient response.
- 996
- 997 **B. Pain Control Curriculum Content:**
- 998
- 999 1. Philosophy of anxiety and pain control and patient management, including the nature and purpose of
1000 pain
- 1001 2. Review of physiologic and psychologic aspects of anxiety and pain
- 1002 3. Review of airway anatomy and physiology
- 1003 4. Physiologic monitoring
- 1004 a. Observation
 - 1005 (1) Central nervous system
 - 1006 (2) Respiratory system
 - 1007 a. Oxygenation
 - 1008 b. Ventilation
 - 1009 (3) Cardiovascular system
- 1010 b. Monitoring equipment
- 1011 5. Pharmacologic aspects of anxiety and pain control
- 1012 a. Routes of drug administration
- 1013 b. Sedatives and anxiolytics
- 1014 c. Local anesthetics
- 1015 d. Analgesics and antagonists
- 1016 e. Adverse side effects
- 1017 f. Drug interactions
- 1018 g. Drug abuse
- 1019 6. Control of preoperative and operative anxiety and pain
- 1020 a. Patient evaluation
 - 1021 (1) Psychological status
 - 1022 (2) ASA physical status
 - 1023 (3) Type and extent of operative procedure
- 1024 b. Nonpharmacologic methods
 - 1025 (1) Psychological and behavioral methods
 - 1026 (a) Anxiety management
 - 1027 (b) Relaxation techniques
 - 1028 (c) Systematic desensitization
 - 1029 (2) Interpersonal strategies of patient management
 - 1030 (3) Hypnosis
 - 1031 (4) Electronic dental anesthesia
 - 1032 (5) Acupuncture/Acupressure
 - 1033 (6) Other
- 1034 c. Local anesthesia
 - 1035 (1) Review of related anatomy, and physiology

- 1036 (2) Pharmacology
- 1037 (i) Dosing
- 1038 (ii) Toxicity
- 1039 (iii) Selection of agents
- 1040 (3) Techniques of administration
- 1041 (i) Topical
- 1042 (ii) Infiltration (supraperiosteal)
- 1043 (iii) Nerve block – maxilla-to include:
- 1044 (aa) Posterior superior alveolar
- 1045 (bb) Infraorbital
- 1046 (cc) Nasopalatine
- 1047 (dd) Greater palatine
- 1048 (ee) Maxillary (2nd division)
- 1049 (ff) Other blocks
- 1050 (iv) Nerve block – mandible-to include:
- 1051 (aa) Inferior alveolar-lingual
- 1052 (bb) Mental-incisive
- 1053 (cc) Buccal
- 1054 (dd) Gow-Gates
- 1055 (ee) Closed mouth
- 1056 (v) Alternative injections-to include:
- 1057 (aa) Periodontal ligament
- 1058 (bb) Intraosseous
- 1059 d. Prevention, recognition and management of complications and emergencies
- 1060

1061 **C. Sequence of Pain Control Didactic and Clinical Instruction:** Beyond the basic didactic instruction in local anesthesia,
 1062 additional time should be provided for demonstrations and clinical practice of the injection techniques. The teaching of
 1063 other methods of anxiety and pain control, such as the use of analgesics and enteral, inhalation and parenteral
 1064 sedation, should be coordinated with a course in pharmacology. By this time the student also will have developed a
 1065 better understanding of patient evaluation and the problems related to prior patient care. As part of this instruction,
 1066 the student should be taught the techniques of venipuncture and physiologic monitoring. Time should be included for
 1067 demonstration of minimal and moderate sedation techniques.

1068 Following didactic instruction in minimal and moderate sedation, the student must receive sufficient clinical experience
 1069 to demonstrate competency in those techniques in which the student is to be certified. It is understood that not all
 1070 institutions may be able to provide instruction to the level of clinical competence in pharmacologic sedation modalities
 1071 to all students. The amount of clinical experience required to achieve competency will vary according to student ability,
 1072 teaching methods and the anxiety and pain control modality taught.

1073 Clinical experience in minimal and moderate sedation techniques should be related to various disciplines of dentistry
 1074 and not solely limited to surgical cases. Typically, such experience will be provided in managing healthy adult patients.
 1075 ~~The sedative care of pediatric patients and those with special needs requires advanced didactic and clinical training.~~

1076 Throughout both didactic and clinical instruction in anxiety and pain control, psychological management of the patient
 1077 should also be stressed. Instruction should emphasize that the need for sedative techniques is directly related to the
 1078 patient's level of anxiety, cooperation, medical condition and the planned procedures.

1079
 1080 **D. Faculty:** Instruction must be provided by qualified faculty for whom anxiety and pain control are areas of major
 1081 proficiency, interest and concern.

1082
 1083 **E. Facilities:** Competency courses must be presented where adequate facilities are available for proper patient care,
 1084 including drugs and equipment for the management of emergencies.

IV. Teaching Administration of Minimal Sedation

The faculty responsible for curriculum in minimal sedation techniques must be familiar with the ADA Policy Statement: *Guidelines for the Use of Sedation and General Anesthesia by Dentists*, and the Commission on Dental Accreditation's *Accreditation Standards* for dental education programs.

These *Guidelines* present a basic overview of the recommendations for teaching minimal sedation. These include courses in nitrous oxide/oxygen sedation, enteral sedation, and combined inhalation/enteral techniques.

General Objectives: Upon completion of a competency course in minimal sedation, the dentist must be able to:

1. Describe the adult and pediatric anatomy and physiology of the respiratory, cardiovascular and central nervous systems, as they relate to the above techniques.
2. Describe the pharmacological effects of drugs.
3. Describe the methods of obtaining a medical history and conduct an appropriate physical examination.
4. Apply these methods clinically in order to obtain an accurate evaluation.
5. Use this information clinically for ASA classification and risk assessment, and pre-procedure fasting instructions.
6. Choose the most appropriate technique for the individual patient.
7. Use appropriate physiologic monitoring equipment.
8. Describe the physiologic responses that are consistent with minimal sedation.
9. Understand the sedation/general anesthesia continuum.
10. Demonstrate the ability to diagnose and treat emergencies related to the next deeper level of anesthesia than intended.

Inhalation Sedation (Nitrous Oxide/Oxygen)

A. Inhalation Sedation Course Objectives: Upon completion of a competency course in inhalation sedation techniques, the dentist must be able to:

1. Describe the basic components of inhalation sedation equipment.
2. Discuss the function of each of these components.
3. List and discuss the advantages and disadvantages of inhalation sedation.
4. List and discuss the indications and contraindications of inhalation sedation.
5. List the complications associated with inhalation sedation.
6. Discuss the prevention, recognition and management of these complications.
7. Administer inhalation sedation to patients in a clinical setting in a safe and effective manner.
8. Discuss the abuse potential, occupational hazards and other untoward effects of inhalation agents.

B. Inhalation Sedation Course Content:

1. Historical, philosophical and psychological aspects of anxiety and pain control.
2. Patient evaluation and selection through review of medical history taking, physical diagnosis and psychological considerations.
3. Definitions and descriptions of physiological and psychological aspects of anxiety and pain.
4. Description of the stages of drug-induced central nervous system depression through all levels of consciousness and unconsciousness, with special emphasis on the distinction between the conscious and the unconscious state.
5. Review of pediatric and adult respiratory and circulatory physiology and related anatomy.
6. Pharmacology of agents used in inhalation sedation, including drug interactions and incompatibilities.
7. Indications and contraindications for use of inhalation sedation.
8. Review of dental procedures possible under inhalation sedation.
9. Patient monitoring using observation and monitoring equipment (i.e., pulse oximetry), with particular attention to vital signs and reflexes related to pharmacology of nitrous oxide.

10. Importance of maintaining proper records with accurate chart entries recording medical history, physical examination, vital signs, drugs and doses administered and patient response.
11. Prevention, recognition and management of complications and life-threatening situations.
12. Administration of local anesthesia in conjunction with inhalation sedation techniques.
13. Description, maintenance and use of inhalation sedation equipment.
14. Introduction to potential health hazards of trace anesthetics and proposed techniques for limiting occupational exposure.
15. Discussion of abuse potential.

C. Inhalation Sedation Course Duration: While length of a course is only one of the many factors to be considered in determining the quality of an educational program, the course should be a minimum of 14 hours plus management of clinical dental cases, including a clinical component during which clinical competency in inhalation sedation technique is achieved. The inhalation sedation course most often is completed as a part of the predoctoral dental education program. However, the course may be completed in a postdoctoral continuing education competency course.

D. Participant Evaluation and Documentation of Inhalation Sedation Instruction: Competency courses in inhalation sedation techniques must afford participants with sufficient clinical experience to enable them to achieve competency. This experience must be provided under the supervision of qualified faculty and must be evaluated. The course director must certify the competency of participants upon satisfactory completion of training. Records of the didactic instruction and clinical experience, including the number of patients treated by each participant must be maintained and available.

E. Faculty: The course should be directed by a dentist or physician qualified by experience and training. This individual should possess an active permit or license to administer moderate sedation in at least one state, have had at least three years of experience, including the individual's formal postdoctoral training in anxiety and pain control. In addition, the participation of highly qualified individuals in related fields, such as anesthesiologists, pharmacologists, internists, and cardiologists and psychologists, should be encouraged.

A participant-faculty ratio of not more than ten-to-one when inhalation sedation is being used allows for adequate supervision during the clinical phase of instruction; a one-to-one ratio is recommended during the early state of participation.

The faculty should provide a mechanism whereby the participant can evaluate the performance of those individuals who present the course material.

F. Facilities: Competency courses must be presented where adequate facilities are available for proper patient care, including drugs and equipment for the management of emergencies.

Enteral and/or Combination Inhalation-Enteral Minimal Sedation

A. Enteral and/or Combination Inhalation-Enteral Minimal Sedation Course Objectives: Upon completion of a competency course in enteral and/or combination inhalation-enteral minimal sedation techniques, the dentist must be able to:

1. Describe the basic components of inhalation sedation equipment.
2. Discuss the function of each of these components.
3. List and discuss the advantages and disadvantages of enteral and/or combination inhalation-enteral minimal sedation (combined minimal sedation).
4. List and discuss the indications and contraindications for the use of enteral and/or combination inhalation-enteral minimal sedation (combined minimal sedation).
5. List the complications associated with enteral and/or combination inhalation-enteral minimal sedation (combined minimal sedation).
6. Discuss the prevention, recognition and management of these complications.

7. Administer enteral and/or combination inhalation-enteral minimal sedation (combined minimal sedation) to patients in a clinical setting in a safe and effective manner.
8. Discuss the abuse potential, occupational hazards and other effects of enteral and inhalation agents.
9. Discuss the pharmacology of the enteral and inhalation drugs selected for administration.
10. Discuss the precautions, contraindications and adverse reactions associated with the enteral and inhalation drugs selected.
11. Describe a protocol for management of emergencies in the dental office and list and discuss the emergency drugs and equipment required for management of life-threatening situations.
12. Demonstrate the ability to manage life-threatening emergency situations, including current certification in Basic Life Support for Healthcare Providers.
13. Discuss the pharmacological effects of combined drug therapy, their implications and their management. Nitrous oxide/oxygen when used in combination with sedative agent(s) may produce minimal, moderate, deep sedation or general anesthesia.

B. Enteral and/or Combination Inhalation-Enteral Minimal Sedation Course Content:

1. Historical, philosophical and psychological aspects of anxiety and pain control.
2. Patient evaluation and selection through review of medical history taking, physical diagnosis and psychological profiling.
3. Definitions and descriptions of physiological and psychological aspects of anxiety and pain.
4. Description of the stages of drug-induced central nervous system depression through all levels of consciousness and unconsciousness, with special emphasis on the distinction between the conscious and the unconscious state.
5. Review of ~~pediatric and~~ adult respiratory and circulatory physiology and related anatomy.
6. Pharmacology of agents used in enteral and/or combination inhalation-enteral minimal sedation, including drug interactions and incompatibilities.
7. Indications and contraindications for use of enteral and/or combination inhalation-enteral minimal sedation (combined minimal sedation).
8. Review of dental procedures possible under enteral and/or combination inhalation-enteral minimal sedation).
9. Patient monitoring using observation, monitoring equipment, with particular attention to vital signs and reflexes related to consciousness.
10. Maintaining proper records with accurate chart entries recording medical history, physical examination, informed consent, time-oriented anesthesia record, including the names of all drugs administered including local anesthetics, doses, and monitored physiological parameters.
11. Prevention, recognition and management of complications and life-threatening situations.
12. Administration of local anesthesia in conjunction with enteral and/or combination inhalation-enteral minimal sedation techniques.
13. Description, maintenance and use of inhalation sedation equipment.
14. Introduction to potential health hazards of trace anesthetics and proposed techniques for limiting occupational exposure.
15. Discussion of abuse potential.

C. Enteral and/or Combination Inhalation-Enteral Minimal Sedation Course Duration: Participants must be able to document current certification in Basic Life Support for Healthcare Providers and have completed a nitrous oxide competency course to be eligible for enrollment in this course. While length of a course is only one of the many factors to be considered in determining the quality of an educational program, the course should include a minimum of *16 hours*, plus clinically-oriented experiences during which competency in enteral and/or combined inhalation-enteral minimal sedation techniques is demonstrated. Clinically-oriented experiences may include group observations on patients undergoing enteral and/or combination inhalation-enteral minimal sedation. Clinical experience in managing a compromised airway is critical to the prevention of life-threatening emergencies. The faculty should schedule participants to return for additional clinical experience if competency has not been achieved in the time allotted. The educational course may be completed in a predoctoral dental education curriculum or a postdoctoral continuing education competency course.

~~These *Guidelines* are not intended for the management of enteral and/or combination inhalation-enteral minimal sedation in children, which requires additional course content and clinical learning experience.~~

D. Participant Evaluation and Documentation of Instruction: Competency courses in combination inhalation-enteral minimal sedation techniques must afford participants with sufficient clinical understanding to enable them to achieve competency. The course director must certify the competency of participants upon satisfactory completion of the course. Records of the course instruction must be maintained and available.

E. Faculty: The course should be directed by a dentist or physician qualified by experience and training. This individual should possess a current permit or license to administer moderate sedation in at least one state, have had at least three years of experience, including the individual's formal postdoctoral training in anxiety and pain control. Dental faculty with broad clinical experience in the particular aspect of the subject under consideration should participate. In addition, the participation of highly qualified individuals in related fields, such as anesthesiologists, pharmacologists, internists, and cardiologists and psychologists, should be encouraged. The faculty should provide a mechanism whereby the participant can evaluate the performance of those individuals who present the course material.

F. Facilities: Competency courses must be presented where adequate facilities are available for proper patient care, including drugs and equipment for the management of emergencies.

V. Teaching Administration of Moderate Sedation

These *Guidelines* present a basic overview of the requirements for a competency course in moderate sedation. These include courses in enteral and parenteral moderate sedation ~~and parenteral moderate sedation~~. The teaching guidelines contained in this section on moderate sedation differ slightly from documents in medicine to reflect the differences in delivery methodologies and practice environment in dentistry. ~~For this reason, separate teaching guidelines have been developed for moderate enteral and moderate parenteral sedation.~~

Completion of a pre-requisite nitrous oxide-oxygen competency course is required for participants combining parenteral moderate sedation with nitrous oxide-oxygen. [Existing language moved from Section C]

A. Course Objectives: Upon completion of a course in moderate sedation, the dentist must be able to:

1. List and discuss the advantages and disadvantages of moderate sedation.
2. Discuss the prevention, recognition and management of complications associated with moderate sedation.
3. Administer moderate sedation to patients in a clinical setting in a safe and effective manner.
4. Discuss the abuse potential, occupational hazards and other untoward effects of the agents utilized to achieve moderate sedation.
5. Describe and demonstrate the technique of intravenous access, intramuscular injection and other parenteral techniques.
6. Discuss the pharmacology of the drug(s) selected for administration.
7. Discuss the precautions, indications, contraindications and adverse reactions associated with the drug(s) selected.
8. Administer the selected drug(s) to dental patients in a clinical setting in a safe and effective manner.
9. List the complications associated with techniques of moderate sedation.
10. Describe a protocol for management of emergencies in the dental office and list and discuss the emergency drugs and equipment required for the prevention and management of emergency situations.
11. Discuss principles of advanced cardiac life support or an appropriate dental sedation/anesthesia emergency course equivalent.
12. Demonstrate the ability to manage emergency situations.

- 1293 13. Demonstrate the ability to diagnose and treat emergencies related to the next deeper level of anesthesia
1294 than intended.

1295
1296 **B. Moderate Sedation Course Content:**

- 1297
1298 1. Historical, philosophical and psychological aspects of anxiety and pain control.
1299 2. Patient evaluation and selection through review of medical history taking, physical diagnosis and psychological
1300 considerations.
1301 3. Use of patient history and examination for ASA classification, risk assessment and pre-procedure fasting
1302 instructions.
1303 4. Definitions and descriptions of physiological and psychological aspects of anxiety and pain.
1304 5. Description of the sedation anesthesia continuum, with special emphasis on the distinction between the
1305 conscious and the unconscious state.
1306 6. Review of ~~pediatric~~ and adult respiratory and circulatory physiology and related anatomy.
1307 7. Pharmacology of local anesthetics and agents used in moderate sedation, including drug interactions and
1308 contraindications.
1309 8. Indications and contraindications for use of moderate sedation.
1310 9. Review of dental procedures possible under moderate sedation.
1311 10. Patient monitoring using observation and monitoring equipment, with particular attention to vital signs,
1312 ventilation/breathing and reflexes related to consciousness.
1313 11. Maintaining proper records with accurate chart entries recording medical history, physical examination,
1314 informed consent, time-oriented anesthesia record, including the names of all drugs administered including
1315 local anesthetics, doses, and monitored physiological parameters.
1316 12. Prevention, recognition and management of complications and emergencies.
1317 13. Description, maintenance and use of moderate sedation monitors and equipment.
1318 14. Discussion of abuse potential.
1319 15. Intravenous access: anatomy, equipment and technique.
1320 16. Prevention, recognition and management of complications of venipuncture and other parenteral techniques.
1321 17. Description and rationale for the technique to be employed.
1322 18. Prevention, recognition and management of systemic complications of moderate sedation, with particular
1323 attention to airway maintenance and support of the respiratory and cardiovascular systems.
1324

1325 ~~**C. Moderate Enteral Sedation Course Duration:** A minimum of 24 hours of instruction, plus management of at least 10~~
1326 ~~adult case experiences by the enteral and/or enteral nitrous oxide/oxygen route are required to achieve competency.~~
1327 ~~These ten cases must include at least three live clinical dental experiences managed by participants in groups no larger~~
1328 ~~than five. The remaining cases may include simulations and/or video presentations, but must include one experience in~~
1329 ~~returning (rescuing) a patient from deep to moderate sedation. Participants combining enteral moderate sedation with~~
1330 ~~nitrous oxide-oxygen must have first completed a nitrous oxide competency course.~~

1331
1332 Participants should be provided supervised opportunities for clinical experience to demonstrate competence in airway
1333 management. Clinical experience will be provided in managing healthy adult patients; **this course in moderate enteral**
1334 **sedation is not designed for the management of children (aged 12 and under).** Additional supervised clinical
1335 experience is necessary to prepare participants to manage medically compromised adults and special needs patients.
1336 This course in moderate enteral sedation does not result in competency in moderate parenteral sedation. The faculty
1337 should schedule participants to return for additional didactic or clinical exposure if competency has not been achieved
1338 in the time allotted.
1339

1340 **Moderate Parenteral Sedation Course Duration and Documentation:**

1341 The Course must include:

- 1342 • A minimum of 60 hours of instruction plus administration of sedation for at least 20 individually managed
1343 patients.
1344 • Certification of competence in moderate sedation technique(s).

- Certification of competence in rescuing patients from a deeper level of sedation than intended including managing the airway, intravascular or intraosseous access, and reversal medications.
- Provision by course director or faculty of additional clinical experience if participant competency has not been achieved in time allotted.
- Records of instruction and clinical experiences (i.e., number of patients managed by each participant in each modality/ route) that are maintained and available for participant review.

A minimum of 60 hours of instruction, plus management of at least 20 patients by the intravenous route per participant, is required to achieve competency in moderate sedation techniques. Participants combining parenteral moderate sedation with nitrous oxide-oxygen must have first completed a nitrous oxide competency course.

Clinical experience in managing a compromised airway is critical to the prevention of emergencies. Participants should be provided supervised opportunities for clinical experience to demonstrate competence in management of the airway. Typically, clinical experience will be provided in managing healthy adult patients. Additional supervised clinical experience is necessary to prepare participants to manage children (aged 12 and under) and medically compromised adults. Successful completion of this course does result in clinical competency in moderate sedation. The faculty should schedule participants to return for additional clinical experience if competency has not been achieved in the time allotted.

D. Participant Evaluation and Documentation of Instruction: ~~Competency courses in moderate sedation techniques must afford participants with sufficient clinical experience to enable them to achieve competency. This experience must be provided under the supervision of qualified faculty and must be evaluated. The course director must certify the competency of participants upon satisfactory completion of training in each moderate sedation technique, including instruction, clinical experience, managing the airway, intravascular/intraosseous access, and reversal medications and airway management. Records of the didactic instruction and clinical experience, including the number of patients managed by each participant in each anxiety and pain control modality must be maintained and available for review.~~

E. Faculty: The course should be directed by a dentist or physician qualified by experience and training. This individual should possess a current permit or license to administer moderate or deep sedation and general anesthesia in at least one state, have had at least three years of experience, including formal postdoctoral training in anxiety and pain control. Dental faculty with broad clinical experience in the particular aspect of the subject under consideration should participate. In addition, the participation of highly qualified individuals in related fields, such as anesthesiologists, pharmacologists, internists, cardiologists and psychologists, should be encouraged.

A participant-faculty ratio of not more than ~~five-four~~ four-to-one when moderate ~~enteral~~ sedation is being taught allows for adequate supervision during the clinical phase of instruction. ~~A participant-faculty ratio of not more than three to one when moderate parenteral sedation is being taught allows for adequate supervision during the clinical phase of instruction;~~ A one-to-one ratio is recommended during the early stage of participation.

The faculty should provide a mechanism whereby the participant can evaluate the performance of those individuals who present the course material.

F. Facilities: Competency courses in moderate sedation must be presented where adequate facilities are available for proper patient care, including drugs and equipment for the management of emergencies. These facilities may include dental and medical schools/offices, hospitals and surgical centers.

VI. Additional Sources of Information

~~American Dental Association. Example of a time-oriented anesthesia record at www.ada.org.~~

American Academy of Pediatric Dentistry (AAPD). *Guidelines for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures: An Update*. Developed through a collaborative effort between the American Academy of Pediatrics and the AAPD. Available at <http://www.aapd.org/policies>

American Academy of Periodontology (AAP). *Guidelines: In-Office Use of Conscious Sedation in Periodontics*. Available at http://www.perio.org/resources_products/posppr3-1.html. The AAP rescinded this policy in 2008.

American Association of Oral and Maxillofacial Surgeons (AAOMS). *Parameters and Pathways: Clinical Practice Guidelines for Oral and Maxillofacial Surgery (AAOMS ParPath-o1) Anesthesia in Outpatient Facilities*. Contact AAOMS at 1-847-678-6200 or visit <http://www.aaoms.org/index.php>

American Association of Oral and Maxillofacial Surgeons (AAOMS). *Office Anesthesia Evaluation Manual 7th Edition*. Contact AAOMS at 1-847-678-6200 or visit <http://www.aaoms.org/index.php>

American Society of Anesthesiologists (ASA). *Practice Guidelines for Preoperative Fasting and the Use of Pharmacological Agents to Reduce the Risk of Pulmonary Aspiration: Application to Healthy Patients Undergoing Elective Procedures*. Available at <https://ecommerce.asahq.org/p-178-practice-guidelines-for-preoperative-fasting.aspx>

American Society of Anesthesiologists (ASA). *Practice Guidelines for Sedation and Analgesia by Non-Anesthesiologists*. Available at <http://www.asahq.org/Home/For-Members/Practice-Management/Practice-Parameters#sedation>. The ASA has other anesthesia resources that might be of interest to dentists. For more information, go to <http://www.asahq.org/publicationsAndServices/sgstoc.htm>

Commission on Dental Accreditation (CODA). *Accreditation Standards for Predoctoral and Advanced Dental Education Programs*. Available at <http://www.ada.org/115.aspx>.

National Institute for Occupational Safety and Health (NIOSH). *Controlling Exposures to Nitrous Oxide During Anesthetic Administration* (NIOSH Alert: 1994 Publication No. 94-100). Available at <http://www.cdc.gov/niosh/docs/94-100/>

Dionne, Raymond A.; Yagiela, John A., et al. Balancing efficacy and safety in the use of oral sedation in dental outpatients. JADA 2006;137(4):502-13. ADA members can access this article online at <http://jada.ada.org/cgi/content/full/137/4/502>

Report of the Council on Scientific Affairs: Risks and Benefits of Using Capnography In Dental Patients Undergoing Moderate Sedation

Key Points

- The evidence reviewed in this brief consists of insight and data from a 2011 systematic review and meta-analysis of whether the addition of capnography enhanced identification of respiratory complications; a 2016 systematic review of the impact of adding capnography on hypoxia detection and other outcomes; the meta-analytical results of updated versions of these two reviews; and insight from other professional organizations and society guidelines.
- The evidence demonstrates that capnography in conjunction with standard monitoring improved the sensitivity of detecting adverse respiratory events and reduces the risk of hypoxemia during moderate sedation compared with standard monitoring alone.
- The evidence indicates that capnography with standard monitoring had reasonable specificity to correctly indicate that individuals were not experiencing adverse respiratory events. The evidence does not find that capnography resulted in change in the clinical management of patients who had been moderately sedated.
- Limitations of this report:
 - The studies included involved what appears to be moderate sedation, though it is recognized that sedation is a continuum and progression from one level to another can occur quickly.¹
 - It does not address the medicolegal implications that might result from the decision not to include capnography in routine monitoring of dental patients managed with moderate sedation.
 - It does not establish the value for the ability to prevent possible anesthesia emergency.

Introduction

Capnography in the dental operator provides the dentist with a measure and display of the partial pressure of exhaled carbon dioxide (CO₂). Although there was debate about the need to mandate its use in monitoring during deep sedation of dental patients,^{2,3} use of capnography is stipulated as clinical practice for deep sedation when volatile anesthetic agents are used.⁴ While the utility of capnography to detect hypoventilation in moderately sedated patients before changes in vital signs or clinician observations is documented, it is not clear that such episodes are clinically significant or if earlier detection with capnography has an effect on patient outcomes.⁵ There is, however, recognition that sedated patients have potential to progress to deeper levels of sedation and it has been suggested that the ability to recognize early warning signs may provide critical opportunity to intervene and prevent sedation-related morbidity and mortality.⁶ It has been reported that the Oral and Maxillofacial Surgery National Insurance Company closed-claims data indicates that the most frequent reason for transfer of a patient who had been under anesthesia to an Emergency Department was respiratory distress.⁷ Because of the limitations on available evidence within the dental literature and as anesthesia-related complications during dental care have been found to be similar to that reported for the hospital operating system environment,⁸ insight from other types of patient care settings will be included in this report.

In November 2015, the ADA House of Delegates adopted Resolution 77H-2015 to refer the proposed revisions of the “Guidelines for the Use of Sedation and General Anesthesia by Dentists” back to the Council for Dental Education and Licensure (CDEL) for further review. CDEL requested that the ADA Science Institute review the literature to evaluate the impact of including monitoring end-tidal CO₂ in an open airway system for patients undergoing procedures under moderate sedation. It was requested that the review be conducted in the style of a systematic review. They further requested that the review may inform on the statement “unless precluded or invalidated by the nature of the patient, procedure, or equipment.” The informational review requested is for use by CDEL to inform its discussion at their April 21-22, 2016 meeting.

Because of the time constraint for this undertaking, the decision was made to address the clinical question posed in 77H-2015 by first identifying and summarizing the data in relevant recent systematic reviews and meta-analyses⁹ and then conducting a literature search to identify any relevant randomized, controlled trials that subsequently had been published.

Methods

The initial search conducted using MEDLINE® via PubMed on 2/18/16 for the terms “capnography” AND “systematic review,” limited to English-language publications with completion dates after 2011, identified 53 papers. The search retrieved two relevant systematic reviews and meta-analyses.^{10, 11}

The National Guideline Clearinghouse database was searched for “capnography during sedation” for the years 2011 through 2015. The search identified 11 guideline documents, of which three were found to be at least tangentially relevant. This search was broadened beyond guidelines in the database to capture insight from recommendations by other stakeholder associations and agencies.

Data sources and searches

A subsequent search was conducted that followed the search strategy utilized by Waugh et al. (2011).¹¹ PubMed and the Cochrane Library were searched from July 2009 to February 2016 for relevant studies. The search strategies combined keywords, synonyms, and subject headings for the concept “capnography” with keywords, synonyms, and index terms for each of the following two concepts: (procedural sedation and analgesia or patient controlled analgesia) or (ambulatory surgical procedures or biopsies or refractive surgical procedures or tracheostomy or tracheotomy or paracentesis or surgical procedures, minimally invasive or endoscopy or electroconvulsive therapy or electric countershock or debridement or ablation techniques or induced abortion or dental). The reference lists of studies selected for inclusion were scanned for additional relevant studies. All searches were performed in February 2016. The searches were limited to English language, studies conducted in humans, and published before March 2016. After the removal of duplicates, the titles and abstracts of 119 studies were downloaded into an EndNote® database and reviewed for eligibility.

Study selection

For inclusion, studies had to be a randomized, controlled trial of adult humans, available in English, report respiratory events, measure respiratory events by capnography and a standard monitoring comparison group where standard monitoring was said to include careful visual assessment of skin color, airway patency and chest movements, pulse oximetry, and auscultation of breath and heart sounds using a precordial stethoscope and be published after the Waugh et al. (2011) meta-analysis search,¹¹ which was conducted in July 2009. Of the 119 studies identified by the search, 26 full-text articles were assessed for eligibility, of which 17 articles were selected for inclusion. Of the nine excluded articles, one was excluded for being only available in Spanish,¹² three were excluded because of a nonstandard comparison group,¹³⁻¹⁵ one was excluded because data could not be extracted,¹⁶ two were excluded because they were not randomized, controlled trials,^{17, 18} and two were excluded because they enrolled pediatric patient populations.^{19, 20} Only 1 study published after the Waugh et al., 2011¹¹ search involved dental treatment,¹⁵ and it was excluded due to a nonstandard comparison group.

Data synthesis and analysis

A combined analysis of the data from the studies included in the previously identified systematic reviews and the studies obtained in the subsequent search was conducted to provide a more global overview of the available evidence. The raw data from each individual study were extracted and aggregated into a single dataset. Two meta-analyses were conducted: one to update the Waugh et al. (2011)¹¹ meta-analysis, and one to update the Conway et al. (2016)¹⁰ meta-analysis. Statistical heterogeneity of included studies was evaluated using an I^2 statistic and chi-square test for each meta-analysis. Following Conway et al.'s systematic review protocol²¹, fixed-effect modeling is used in the absence of statistical heterogeneity, and random-effects modeling is used in the presence of significant heterogeneity (defined by Conway et al. as an I^2 value greater than 50%).

The objective of the Waugh et al. (2011)¹¹ meta-analysis was to determine if capnography combined with standard monitoring identified more respiratory complications during moderate sedation than standard monitoring alone. As in Waugh et al.¹¹, the outcome measure of the updated meta-analysis was respiratory complications during procedural sedation and analgesia, defined as any of the following: respiratory depression, apnea, oxygen desaturation, airway obstruction, or the need for oxygen supplementation. As in Waugh et al.¹¹, cases were defined as the number of patients experiencing respiratory complications during the procedure, and patients who experienced multiple episodes of respiratory complications were considered only as one case. Waugh et al. used a DerSimonian-Laird random-effects meta-analytic model²² to calculate the odds of detecting a respiratory complication; the updated meta-analysis uses the same model because as in Waugh et al., a high level of statistical heterogeneity was detected ($I^2=79.8\%$, X^2 p-value <0.001). Using this updated collection of studies, the mean sensitivity and specificity of capnography was calculated (see Figure 2) and plotted using hierarchical regression modeling²³ (see Figure 3). Waugh et al. (2011)¹¹ used five studies in their meta-analysis;²⁴⁻²⁸ the updated version included five more,²⁹⁻³³ for a total of ten studies.

The Conway et al. (2016)¹⁰ meta-analysis was conducted to test whether capnography reduced hypoxemia in comparison with standard monitoring for moderately sedated patients. The outcome of this analysis is hypoxemia as defined by the study authors. Studies used varying definitions hypoxemia, but it was assumed that the definition of hypoxemia used by the authors of each trial was appropriate for the context in which the study was performed. In the updated meta-analysis, studies are grouped by their definition of hypoxemia, contrasting those that defined hypoxemia as SpO_2 less than 90% with SpO_2 less than 93%. The Conway et al. (2016)¹⁰ meta-analysis used a fixed-effects model; this updated version replicated that, but also reports results using a random-effects model.²² The addition of a random-effects model was chosen due to the high levels of heterogeneity observed in the study data ($I^2=81.0\%$, X^2 p-value <0.001), in order to be consistent with Cochrane guidance³⁴ and Conway et al.'s protocol.²¹ Conway et al. (2016)¹⁰ used six studies in their meta-analysis. The updated version excluded one of these²⁰ because it was conducted on children rather than adults, excluded another because it was conducted with deep sedation rather than moderate³⁵, and added 4 more trials³⁶⁻³⁹

While not a named component of standard monitoring, the use of a precordial stethoscope is commonly included in the dental setting. There is little reported in the published literature about precordial/pretracheal stethoscope use. A PubMed search for precordial stethoscope AND capnography returned 4 citations. There was only one that included data comparing the two methodologies⁴⁰ which found that while the sensitivity for the precordial/pretracheal stethoscope was 30.0% while sensitivity of capnography was 100%.

Evidence Review

Waugh et al. (2011)

The work of Waugh et al.¹¹ provides a meta-analysis of studies that address whether the addition of capnography to standard monitoring identified more respiratory complications in adults. They identified five studies published between 1995 and 2009 that reported on adverse events during procedural

sedation and analgesia meeting their criteria. Of the five studies, three were in the emergency department setting, one was monitored anesthesia care, and one involved patients undergoing upper endoscopy.

The authors divided the trial events detected into four categories: true positives, false positives, true negatives and false negatives. They reported that the crude pooled odds ratio between adverse respiratory events and the increased detection by capnography was 7.93 (95% confidence interval [CI]: 4.55, 13.84). There was a high level of variability between the studies, indicated by the wide range of odds ratios (1.37, 638.00). This high level of heterogeneity led the authors to use a random-effects model for the meta-analysis, calculating that the overall adverse respiratory events in patients undergoing procedural sedation were 17.6 times more likely to be detected in patients where capnography was a component of monitoring than when it was not.

Conway et al. (2016)

The primary objective of the systematic review by Conway et al.¹⁰ was to determine whether inclusion of capnography reduced the rate of hypoxemia during sedation. Their secondary objective was to determine whether the inclusion of capnography resulted in changes to the clinical management of patients, although not all of the studies used an explicit protocol to determine what actions were to be taken in response to respiratory depression. The study identified six studies published between 2010 and 2015 that met their search criteria. These included three involving participants undergoing colonoscopy, two that were emergency department settings, and one involving gynecologic procedures.

As opposed to Waugh et al.¹¹ who reported on the increase in detection of hypoxic events, Conway et al.¹⁰ reported their outcomes as reduction in hypoxic events and found this to be 0.71 (95% CI: 0.56, 0.91). Like Waugh et al.,¹¹ they found that there was substantial statistical heterogeneity among the studies and used the GRADE approach⁴¹ to rate the quality of the evidence, which they found to be poor due to high risks of performance and detection bias.

Recent Randomized Trials

The search in February 2016 identified seven recent randomized, controlled trials that were not included in the Waugh et al.¹¹ or Conway et al.¹⁰ meta-analyses.^{29, 32, 33, 36-39}

Combined Analysis of Studies

Update of Waugh et al. (2011)

This update of Waugh et al. (2011)¹¹ evaluates the ability of capnography to detect respiratory complications (most commonly apnea or altered ventilation) during procedural sedation and analgesia. It is comprised of 10 studies^{24, 25, 27-33, 42} for a total of 800 patients who underwent a range of procedures, predominantly emergency department procedures and colonoscopies. As in Waugh et al. (2011)¹¹, a random-effects DerSimonian-Laird model was used to calculate the odds ratio of detecting an adverse respiratory event using capnography in addition to standard monitoring compared to standard monitoring alone (Figure 1).

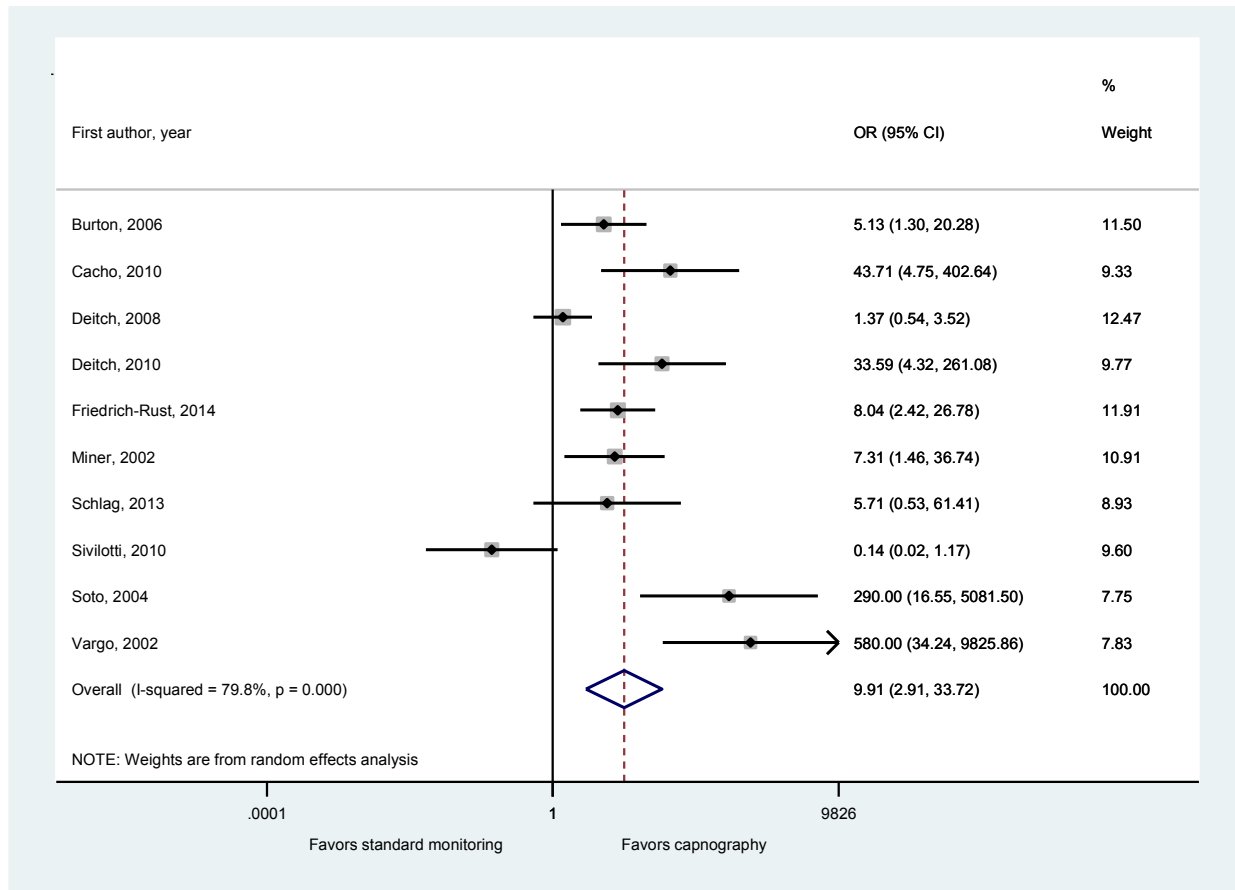


Figure 1. Forest plot of odds of adverse respiratory event detected by capnography compared to standard monitoring.

The weighted odds ratio of adverse respiratory events is 9.9 (95% CI: 2.9, 33.7). This indicates that overall, adverse respiratory events in patients undergoing moderate procedural sedation have 9.9 higher odds of being correctly detected if monitored by capnography than if they were not monitored by capnography.

These same abstracted data were used to evaluate the sensitivity and specificity of capnography as a test for adverse respiratory events. Sensitivity is the ability of capnography combined with standard monitoring to correctly identify patients who have respiratory complications under sedation and analgesia. Specificity is the ability of capnography combined with standard monitoring to correctly detect patients who do not have respiratory complications under sedation and analgesia. The patients with adverse respiratory events were categorized as true positive if capnography identified them, or false negative if capnography did not detect them. Patients without adverse respiratory events were categorized as false positive if capnography identified them as having an event, or true negative if capnography identified them as not having an event. The numbers of patients with adverse respiratory events detected, the sensitivity, and the specificity of each study are found in Figure 2.

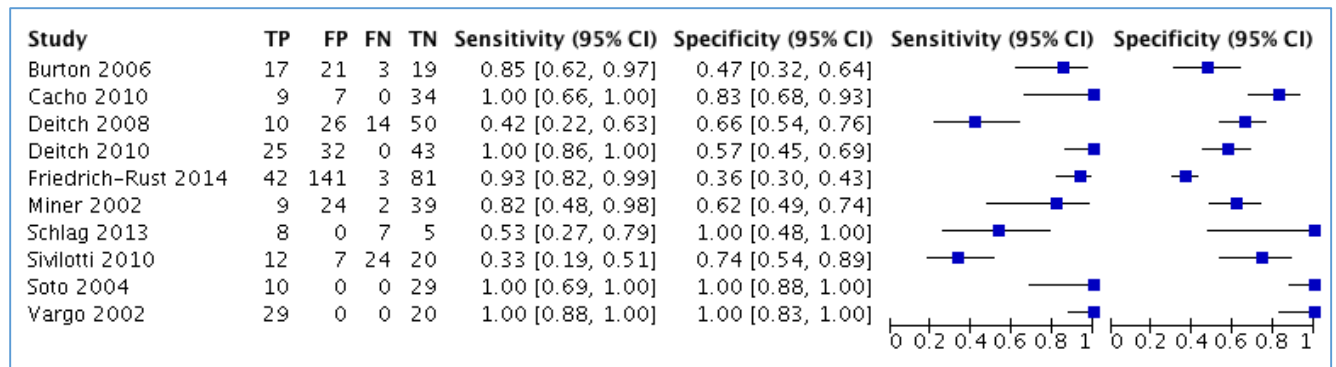


Figure 2. Forest plot of sensitivity and specificity of capnography for the detection of respiratory events. (TP: true positive, FP: false positive, FN: false negative, TN: true negative).

The summary estimate of capnography's sensitivity is 0.93 (95% CI: 0.48, 0.995), and its specificity is 0.77 (95% CI: 0.54, 0.91). This indicates that combined with standard monitoring, capnography has a 93.3% probability of detecting when a patient has respiratory complications, but only a 77.2% probability of detecting when patients are doing well and need no intervention.

The sensitivity and specificity of capnography in detecting adverse respiratory events is graphically presented in a hierarchical summary receiver operating characteristic (HSROC) plot in Figure 3. Each circle indicates a study, with size of the circle representing the number of patients in a study. The studies are plotted according to their sensitivity versus their specificity. The studies are spread across the graph, demonstrating the considerable heterogeneity of capnography-detection ability; this can also be seen in the spread of the forest plots in Figure 2. The red square indicates the summary estimate of 93.3% sensitivity and 77.2% specificity of capnography in detecting respiratory events. The summary estimate is surrounded by a red dotted line that represents the 95% confidence region for the summary estimate (functionally a confidence interval for the summary estimate). The HSROC curve plots the sensitivity of capnography at each level of specificity and thus provides information on the overall performance of capnography. The closer the curve is to the upper-left-hand corner of the plot (where sensitivity and specificity are both 100%), the better the performance of the test is considered. The curve displays the trade-off between specificity and sensitivity, such that the expected sensitivity at any level of specificity can be estimated, and vice versa.

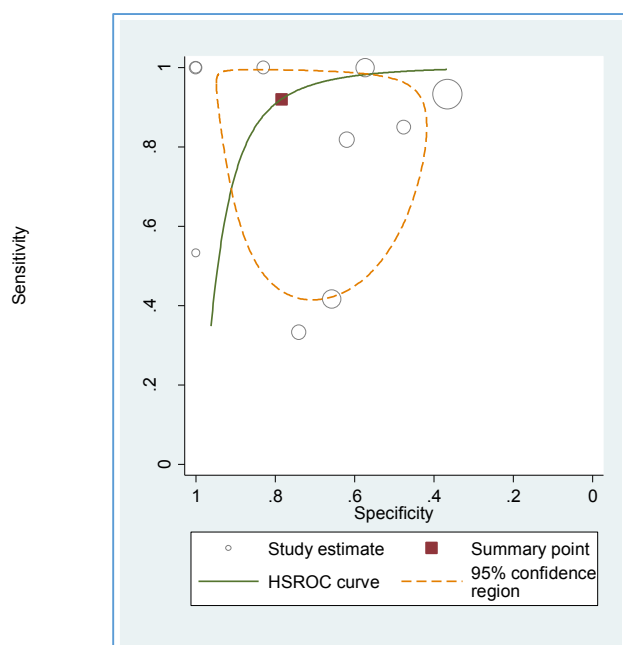


Figure 3. HSROC plot of capnography for detection of respiratory events during procedural sedation and analgesia.

Update of Conway et al. (2016)

This update of the meta-analysis of Conway et al.¹⁰ is designed to provide an estimate of the relative risk of hypoxemia for patients monitored with capnography in addition to standard monitoring, compared to standard monitoring alone. It is comprised of 8 studies^{30, 31, 36-39, 43, 44} with a total of 3,725 patients who had colonoscopies, emergency department procedures, endoscopies, and minor gynecology procedures. Studies used varying definitions of hypoxemia, so the meta-analysis was stratified by hypoxemia definition. Per Cochrane,³⁴ a random-effects model was chosen in response to the high level of statistical heterogeneity among the studies ($I^2=81.4\%$, X^2 p-value <0.001). The results of this meta-analysis can be seen in Figure 4.

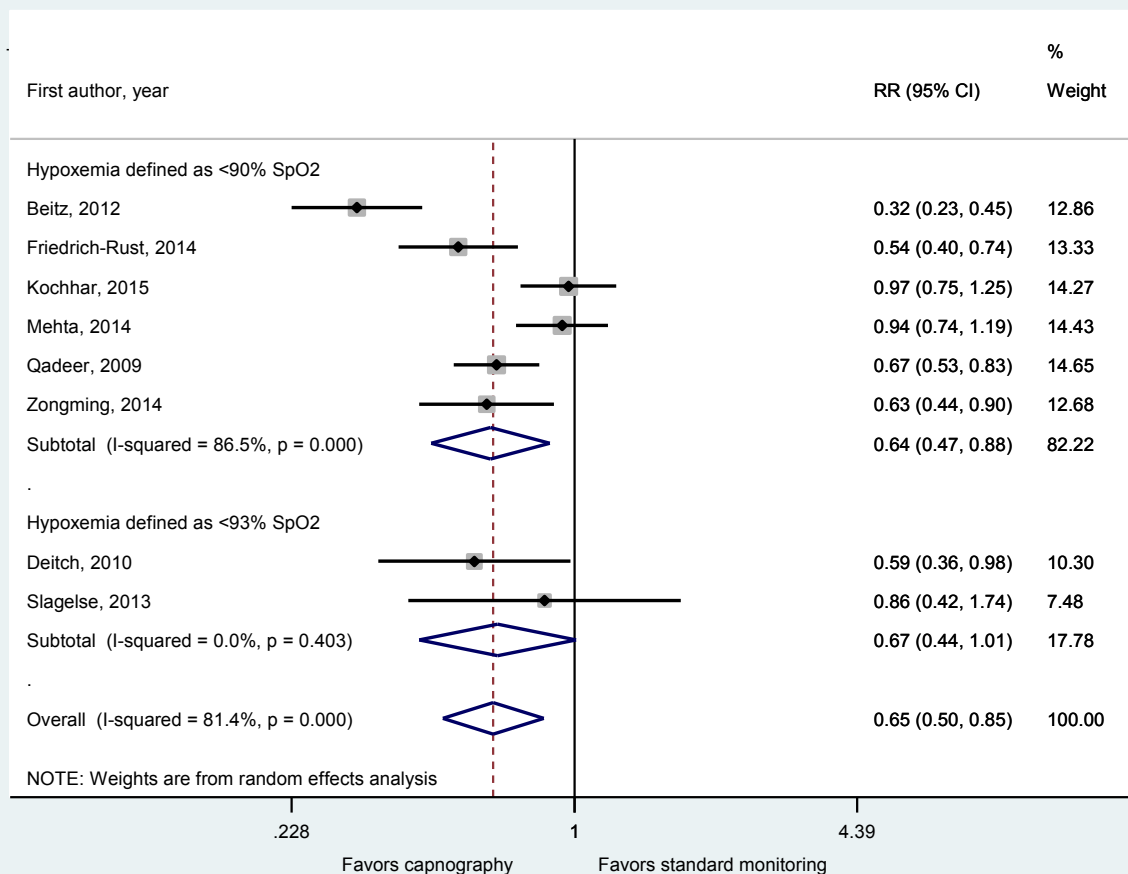


Figure 4. Forest plot of relative risk of hypoxemia during sedation.

For studies that defined hypoxemia as SpO₂ less than 90%, the relative risk of hypoxemia was 0.65 (95% CI: 0.47, 0.88). For studies that defined hypoxemia as SpO₂ less than 93%, the relative risk of hypoxemia was 0.84 (95% CI: 0.58, 1.20). For all included studies, the relative risk of hypoxemia was 0.69 (95% CI: 0.54, 0.88). Similar to Conway et al.¹⁰ this analysis shows that capnography reduced the risk of hypoxemia. (If a fixed-effects model was used, as Conway et al.¹⁰ did rather than the random-effects analysis they indicated they would use in their protocol,²¹ the overall relative risk of hypoxemia would be 0.64 (95% CI: 0.57, 0.72), the relative risk for studies that defined hypoxemia as SpO₂ less than 90% of 0.64 (95% CI: 0.58, 0.72), and the relative risk for studies that defined hypoxemia as SpO₂ less than 93% of 0.69 (95% CI: 0.46, 1.03). Using the fixed-effects model leads to slightly narrower confidence intervals, but the effect estimates and general meaning remains the same regardless of model. Based on the results from either model, the risk of hypoxemia for adult patients under moderate sedation is statistically significantly affected by the use of capnography. Patients monitored using capnography in addition to standard monitoring had a 34.6% reduction in risk of hypoxemia compared to those with only standard monitoring.

Stakeholder Recommendations and Guidelines

Organization	Patient Population	Guidance for <u>mandating inclusion of capnography as a component in standard monitoring of patients under moderate sedation</u>	Guidance that <u>capnography is an optional component in standard monitoring of patients under moderate sedation</u>
American Association of Oral and Maxillofacial Surgeons ⁴⁵ (2012)	Adults	Consequently, the use of capnography for patients under moderate sedation, deep sedation, and general anesthesia should be instituted in OMS practice and used on these patients effective January 2014 unless precluded or invalidated by the nature of the patient, procedure, or equipment.	
American Academy of Pediatrics/American Academy of Pediatric Dentists ⁴⁶ (2011)	Children		The use of expired carbon dioxide monitoring devices is encouraged for sedated children, particularly in situations where other means of assessing the adequacy of ventilation are limited. Several manufacturers have produced nasal cannulae that allow simultaneous delivery of oxygen and measurement of expired carbon dioxide values. Although these devices can have a high degree of false-positive alarms, they are also very accurate for the detection of complete airway obstruction or apnea.
American College of Emergency Physicians ⁴⁷ (2014)	Patients undergoing procedural sedation and analgesia in the ED		"Capnography may be used as an adjunct to pulse oximetry and clinical assessment to detect hypoventilation and apnea earlier than pulse oximetry and/or clinical assessment alone in patients undergoing procedural sedation and analgesia in the ED." (Level B recommendation)
American Dental Association ⁴ (2012)	Clinical Guidelines [for] Moderate Sedation		"The dentist must monitor ventilation. This can be accomplished by auscultation of breath sounds [or] , monitoring end-tidal CO2 or by

			verbal communication with the patient.”
American Society of Anesthesiologists Task Force on Perioperative Management of Patients ⁴⁸ (2014)	Patients with confirmed or suspected obstructive sleep apnea (OSA) who receive sedation, analgesia, or anesthesia for diagnostic or therapeutic procedures under the care of an anesthesiologist	“Intraoperative management [is] to include ventilation monitoring by Capnography.”	
American Society of Gastroenterologists ⁴⁹ (2014)	Patients requiring gastro-intestinal endoscopy		“There is inadequate data to support the routine use of capnography when moderate sedation is the target.”
National Institute for Health and Clinical Excellence ⁵⁰ (2010)	Infants, children, and young people (under 19 years) receiving sedation by any technique for painful or nonpainful diagnostic or therapeutic procedures including dental surgery and minor operations carried out under local anaesthesia (sic).	“Monitoring, interpreting, and responding to depth of sedation, respiration, oxygen saturation, heart rate, three-lead electrocardiogram, end tidal carbon dioxide (capnography), blood pressure, pain coping.”	
The Joint Commission (personal communication from Doreen Finn, RN, MBA; Senior Associate Director Standards Interpretation Group The Joint Commission)	The requirements are the same across all settings to ensure a “single level of care” for patients.	The Joint Commission requirements are the same for a patient undergoing moderate or deep sedation or anesthesia. They require monitoring the patient's oxygenation, ventilation, and circulation continuously during operative or other high-risk procedures and or during the administration of	

		moderate or deep sedation or anesthesia.	
United States Air Force ⁵¹	Adults	During moderate or deep sedation and general anesthesia the adequacy of ventilation shall be evaluated by continual observation of qualitative clinical signs and monitoring for the presence of exhaled carbon dioxide	

Summary/Discussion

The purpose of including capnography in monitoring patients who are sedated is multifaceted including detection of hypoventilation, hyperventilation, and disordered breathing. The available evidence about the impact of including capnography in the monitoring of patients who are moderately to deeply sedated indicates that it has potential to improve detection of adverse respiratory events such as apnea or hypoventilation. The addition of capnography to standard monitoring allows for identification of significantly more respiratory complications during procedural sedation in adults than standard monitoring alone. However, the clinical ramification of this improved detection are only partially documented: use of capnography significantly reduces the risk of hypoxemia and non-significantly reduces assisted ventilation.

The meta-analysis conducted in the development of this report summarizes 10 studies in a Forest plot (Fig. 1) which demonstrates a net significant improvement favoring capnography for detecting respiratory complications (OR 9.9; 95% CI 2.9-33.7). Many of the individual studies have large confidence intervals around the point estimate, but 9 out of 10 studies demonstrate benefit; together the evidence favors the use of capnography for identifying respiratory events with an overall sensitivity of 93% (Fig. 2). The specificity is only 77.2% (Fig. 2) but for a prognostic indicator test this can be considered reasonable as it errs on the side of caution in patient management rather than risk for the patient. As a diagnostic, the area under the curve in the receiver operating characteristic plot (Fig. 3) is excellent. The benefits for identifying risk for hypoxias was similar using the two thresholds for identifying hypoxia used in the literature. The adoption of capnography as a component of guidelines appears to be in flux as organizations with medical oversight responsibility, such as the Joint Commission and the Air Force, are now requiring inclusion of end-tidal CO₂ monitoring as the standard.

This report focuses on the evidence base about the utility of capnography in the management of patients undergoing moderate sedation. The evidence base is limited and there is a need for better designed and conducted studies for more definitive insight about whether and the extent to which capnography improves safety for dental patients across the age continuum. In the course of developing this report, no adverse events were found associated with the use of capnography. Though there were no data supporting how capnography will modify clinical management or prevent anesthesia emergencies in patients who undergo moderate sedation, it has been suggested that the clinical steps to avoid respiratory events focus on early detection and intervention. In this regard, the data support that capnography excels as instrumentation which increases early detection.

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["http://www.airforcemedicine.af.mil/Portals/1/Documents/DECS/Product_Evaluations/Equip/BP_Vital_Monitors/Synopsis_of_Vital_Signs_Monitors_and_the_2014_Capnography_Requirement.pdf"](http://www.airforcemedicine.af.mil/Portals/1/Documents/DECS/Product_Evaluations/Equip/BP_Vital_Monitors/Synopsis_of_Vital_Signs_Monitors_and_the_2014_Capnography_Requirement.pdf)

ADA American Dental Association®

Council on Dental Education and Licensure

Proposed Revisions not approved by the 2015 ADA House of Delegates Guidelines for the Use of Sedation and General Anesthesia by Dentists

Underscore denotes proposed additions
Strikethrough denotes proposed deletions

I. Introduction

The administration of local anesthesia, sedation and general anesthesia is an integral part of dental practice. The American Dental Association is committed to the safe and effective use of these modalities by appropriately educated and trained dentists. The purpose of these guidelines is to assist dentists in the delivery of safe and effective sedation and anesthesia.

Dentists providing sedation and anesthesia in compliance with their state rules and/or regulations prior to adoption of this document are not subject to *Section III. Educational Requirements*.

II. Definitions

Methods of Anxiety and Pain Control

~~analgesia~~ – the diminution or elimination of pain. [moved to Terms section]

~~conscious sedation~~[†] – a minimally depressed level of consciousness that retains the patient's ability to independently and continuously maintain an airway and respond appropriately to physical stimulation or verbal command and that is produced by a pharmacological or non-pharmacological method or a combination thereof.

In accord with this particular definition, the drugs and/or techniques used should carry a margin of safety wide enough to render unintended loss of consciousness unlikely. Further, patients whose only response is reflex withdrawal from repeated painful stimuli would not be considered to be in a state of conscious sedation.

~~combination inhalation-enteral conscious sedation~~ (combined conscious sedation) – conscious sedation using inhalation and enteral agents. [moved to Terms section]

When the intent is anxiolysis only, and the appropriate dosage of agents is administered, then the definition of enteral and/or combination inhalation-enteral conscious sedation (combined conscious sedation) does not apply. [moved to Terms section]

~~local anesthesia~~ – the elimination of sensation, especially pain, in one part of the body by the topical application or regional injection of a drug. [Moved to Terms section]

Note: Although the use of local anesthetics is the foundation of pain control in dentistry and has a long record of safety, dentists must be aware of the maximum, safe dosage limits for each patient. Large doses of local anesthetics in themselves may result in central nervous system depression, especially in combination with sedative agents. [Moved to Terms section]

[†]–Parenteral conscious sedation may be achieved with the administration of a single agent or by the administration of more than one agent.

~~combination inhalation-enteral conscious sedation (combined conscious sedation) – conscious sedation using inhalation and enteral agents.~~

~~When the intent is anxiolysis only, and the appropriate dosage of agents is administered, then the definition of enteral and/or combination inhalation-enteral conscious sedation (combined conscious sedation) does not apply.~~

minimal sedation - a minimally depressed level of consciousness, produced by a pharmacological method, that retains the patient's ability to independently and continuously maintain an airway and respond *normally* to tactile stimulation and verbal command. Although cognitive function and coordination may be modestly impaired, ventilatory and cardiovascular functions are unaffected.²

Note: In accord with this particular definition, the drug(s) and/or techniques used should carry a margin of safety wide enough never to render unintended loss of consciousness. Further, patients whose only response is reflex withdrawal from repeated painful stimuli would not be considered to be in a state of minimal sedation.

When the intent is minimal sedation for adults, the appropriate initial dosing of a single enteral drug is no more than the maximum recommended dose (MRD) of a drug that can be prescribed for unmonitored home use.

For children age 12 and under, ~~the use of preoperative sedatives for children (aged 12 and under) prior to arrival in the dental office, except in extraordinary situations,~~ must be avoided due to the risk of unobserved respiratory obstruction during transport by untrained individuals.

Prescription medications intended to accomplish procedural sedation for children age 12 and under must not be administered without the benefit of direct supervision by a trained dental/medical provider. (Source: the American Academy of Pediatrics/American Academy of Pediatric Dentistry *Guidelines for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures*)

Children (aged 12 and under) can become moderately sedated despite the intended level of minimal sedation; should this occur, the guidelines for moderate sedation apply.

For children 12 years of age and under, the American Dental Association supports the use of the American Academy of Pediatrics/American Academy of Pediatric Dentistry *Guidelines for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures*.

Nitrous oxide/oxygen may be used in combination with a single enteral drug in minimal sedation.

Nitrous oxide/oxygen when used in combination with sedative agent(s) may produce minimal, moderate, deep sedation or general anesthesia.

The following definitions apply to administration of minimal sedation via an enteral route:

maximum recommended (MRD) - maximum FDA-recommended dose of a drug, as printed in FDA-approved labeling for unmonitored home use.

incremental dosing - administration of multiple doses of a drug until a desired effect is reached, but not to exceed the maximum recommended dose (MRD).

² Portions excerpted from *Continuum of Depth of Sedation: Definition of General Anesthesia and Levels of Sedation/Analgesia, 2014* 2004, of the American Society of Anesthesiologists (ASA). A copy of the full text can be obtained from ASA, 520 N. Northwest Highway, Park Ridge, IL 60068-2573.

supplemental dosing - during minimal sedation, supplemental dosing is a single additional dose of the initial dose of the initial drug that may be necessary for prolonged procedures. The supplemental dose should not exceed one-half of the initial dose and should not be administered until the dentist has determined the clinical half-life of the initial dosing has passed. The total aggregate dose must not exceed 1.5x the MRD on the day of treatment. For the purpose of enteral or combination enteral/inhalation sedation, when the MRD of a drug is exceeded or more than one drug is used in combination, with or without the concomitant use of nitrous oxide, the guidelines for moderate sedation apply.

moderate sedation - a drug-induced depression of consciousness during which patients respond purposefully to verbal commands, either alone or accompanied by light tactile stimulation. No interventions are required to maintain a patent airway, and spontaneous ventilation is adequate. Cardiovascular function is usually maintained.³

Note: In accord with this particular definition, the drugs and/or techniques used should carry a margin of safety wide enough to render unintended loss of consciousness unlikely. Repeated dosing of an agent before the effects of previous dosing can be fully appreciated may result in a greater alteration of the state of consciousness than is the intent of the dentist. Further, a patient whose only response is reflex withdrawal from a painful stimulus is not considered to be in a state of moderate sedation.

The following definition applies to the administration of moderate or greater sedation:

titration - administration of incremental doses of an intravenous or inhalation drug until a desired effect is reached. Knowledge of each drug's time of onset, peak response and duration of action is essential to avoid over sedation. Although the concept of titration of a drug to effect is critical for patient safety, when the intent is moderate sedation one must know whether the previous dose has taken full effect before administering an additional drug increment.

deep sedation - a drug-induced depression of consciousness during which patients cannot be easily aroused but respond purposefully following repeated or painful stimulation. The ability to independently maintain ventilatory function may be impaired. Patients may require assistance in maintaining a patent airway, and spontaneous ventilation may be inadequate. Cardiovascular function is usually maintained.³

general anesthesia - a drug-induced loss of consciousness during which patients are not arousable, even by painful stimulation. The ability to independently maintain ventilatory function is often impaired. Patients often require assistance in maintaining a patent airway, and positive pressure ventilation may be required because of depressed spontaneous ventilation or drug-induced depression of neuromuscular function. Cardiovascular function may be impaired.

Because sedation and general anesthesia are a continuum, it is not always possible to predict how an individual patient will respond. Hence, practitioners intending to produce a given level of sedation should be able to diagnose and manage the physiologic consequences (rescue) for patients whose level of sedation becomes deeper than initially intended.³

For all levels of sedation, the qualified dentist practitioner must have the training, skills, drugs and equipment to identify and manage such an occurrence until either assistance arrives (emergency medical service) or the patient returns to the intended level of sedation without airway or cardiovascular complications.

Routes of Administration

enteral - any technique of administration in which the agent is absorbed through the gastrointestinal (GI) tract or oral mucosa [i.e., oral, rectal, sublingual].

³ Excerpted from *Continuum of Depth of Sedation: Definition of General Anesthesia and Levels of Sedation/Analgesia, 2004*, of the American Society of Anesthesiologists (ASA). A copy of the full text can be obtained from ASA, 520 N. Northwest Highway, Park Ridge, IL 60068-2573.

parenteral - a technique of administration in which the drug bypasses the gastrointestinal (GI) tract [i.e., intramuscular (IM), intravenous (IV), intranasal (IN), submucosal (SM), subcutaneous (SC), intraosseous (IO)].

transdermal - a technique of administration in which the drug is administered by patch or iontophoresis through skin.

transmucosal - a technique of administration in which the drug is administered across mucosa such as intranasal, sublingual, or rectal.

inhalation - a technique of administration in which a gaseous or volatile agent is introduced into the lungs and whose primary effect is due to absorption through the gas/blood interface.

Terms

analgesia – the diminution or elimination of pain [Moved from Definitions section]

local anesthesia - the elimination of sensation, especially pain, in one part of the body by the topical application or regional injection of a drug. [Moved from Definitions section]

Note: Although the use of local anesthetics is the foundation of pain control in dentistry and has a long record of safety, dentists must be aware of the maximum, safe dosage limits for each patient. Large doses of local anesthetics in themselves may result in central nervous system depression, especially in combination with sedative agents. [Moved from Definitions section]

qualified dentist - meets the educational requirements for the appropriate level of sedation in accordance with Section III of these *Guidelines*, or a dentist providing sedation and anesthesia in compliance with their state rules and/or regulations prior to adoption of this document.

operating dentist – dentist with primary responsibility for providing operative dental care while a qualifying dentist or independently practicing qualified anesthesia healthcare provider administers minimal, moderate or deep sedation or general anesthesia.

competency – displaying special skill or knowledge derived from training and experience

must/shall - indicates an imperative need and/or duty; an essential or indispensable item; mandatory.

should - indicates the recommended manner to obtain the standard; highly desirable.

may - indicates freedom or liberty to follow a reasonable alternative.

continual - repeated regularly and frequently in a steady succession.

continuous - prolonged without any interruption at any time.

time-oriented anesthesia record - documentation at appropriate time intervals of drugs, doses and physiologic data obtained during patient monitoring.

immediately available – on site in the facility and available for immediate use.

American Society of Anesthesiologists (ASA) Patient Physical Status Classification⁴

ASA I - A normal healthy patient.

ASA II - A patient with mild systemic disease.

ASA III - A patient with severe systemic disease.

ASA IV - A patient with severe systemic disease that is a constant threat to life.

ASA V - A moribund patient who is not expected to survive without the operation.

ASA VI - A declared brain-dead patient whose organs are being removed for donor purposes.

E - Emergency operation of any variety (used to modify one of the above classifications, i.e., ASA III-E).

American Society of Anesthesiologists Fasting Guidelines*

Ingested Material	Minimum Fasting Period
Clear liquids	2 hours
Breast milk	4 hours
Infant formula	6 hours
Nonhuman milk	6 hours
Light meal	6 hours
Fatty meal	8 hours

*American Society of Anesthesiologists: Practice Guidelines for preoperative fasting and the use of pharmacologic agents to reduce the risk of pulmonary aspiration: application to healthy patients undergoing elective procedures. *Anesthesiology* 114:495. 2011. Reprinted with permission.

III. Educational Requirements

A. Minimal Sedation

1. To administer minimal sedation the dentist must demonstrate competency by having ~~have~~ successfully completed:

a. training to the level of competency in minimal sedation consistent with that prescribed in the *ADA Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students*,

or

b. a comprehensive training program in moderate sedation that satisfies the requirements described in the Moderate Sedation section of the *ADA Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students* at the time training was commenced,

or

c. ~~b.~~ an advanced education program accredited by the ADA Commission on Dental Accreditation that affords comprehensive and appropriate training necessary to administer and manage minimal sedation commensurate with these guidelines;

and

c. a current certification in Basic Life Support for Healthcare Providers.

2. Administration of minimal sedation by another qualified dentist or independently practicing qualified anesthesia healthcare provider requires the operating dentist and his/her clinical staff to maintain current certification in Basic Life Support for Healthcare Providers.

B. Moderate Sedation

1. To administer moderate sedation, the dentist must demonstrate competency by having ~~have~~ successfully completed:

⁴ ASA Physical Status Classification System is reprinted with permission of the American Society of Anesthesiologists, 520 N. Northwest Highway, Park Ridge, IL 60068-2573.

- a. a comprehensive training program in moderate sedation that satisfies the requirements described in the Moderate Sedation section of the ADA *Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students* at the time training was commenced,
- or
- b. an advanced education program accredited by the ADA Commission on Dental Accreditation that affords comprehensive and appropriate training necessary to administer and manage moderate sedation commensurate with these guidelines;
- and
- c. 1) a current certification in Basic Life Support for Healthcare Providers and 2) either current certification in Advanced Cardiac Life Support (ACLS or equivalent, e.g., Pediatric Advanced Life Support) or completion of an appropriate dental sedation/anesthesia emergency management course on the same recertification cycle that is required for ACLS.
2. Administration of moderate sedation by another qualified dentist or independently practicing qualified anesthesia healthcare provider requires the operating dentist and his/her clinical staff to maintain current certification in Basic Life Support for Healthcare Providers.

C. Deep Sedation or General Anesthesia

1. To administer deep sedation or general anesthesia, the dentist must demonstrate competency by having ~~have completed~~:
- a. an advanced education program accredited by the ADA Commission on Dental Accreditation that affords comprehensive and appropriate training necessary to administer and manage deep sedation or general anesthesia, commensurate with Part IV.C of these guidelines;
- and
- b. 1) a current certification in Basic Life Support for Healthcare Providers and 2) either current certification in Advanced Cardiac Life Support (ACLS or equivalent, e.g., Pediatric Advanced Life Support) or completion of an appropriate dental sedation/anesthesia emergency management course on the same re-certification cycle that is required for ACLS.
2. Administration of deep sedation or general anesthesia by another qualified dentist or independently practicing qualified anesthesia healthcare provider requires the operating dentist and his/her clinical staff to maintain current certification in Basic Life Support (BLS) Course for the Healthcare Provider.

For all levels of sedation and anesthesia, dentists, who are currently providing sedation and anesthesia in compliance with their state rules and/or regulations prior to adoption of this document, are not subject to these educational requirements. However, all dentists providing sedation and general anesthesia in their offices or the offices of other dentists should comply with the Clinical Guidelines in this document.

IV. Clinical Guidelines

A. Minimal sedation

1. Patient Evaluation

Patients considered for minimal sedation must be suitably evaluated prior to the start of any sedative procedure. In healthy or medically stable individuals (ASA I, II) this ~~should~~ may consist of a review of their current medical history and medication use. ~~However,~~ In addition, patients with significant medical considerations (ASA III, IV) may require consultation with their primary care physician or consulting medical specialist.

2. Pre-Operative Preparation

- The patient, parent, guardian or care giver must be advised regarding the procedure associated with the delivery of any sedative agents and informed consent for the proposed sedation must be obtained.
- Determination of adequate oxygen supply and equipment necessary to deliver oxygen under positive pressure must be completed.
- Baseline vital signs (blood pressure, pulse and respiration rates) must be obtained unless invalidated by the nature of the patient, procedure or equipment ~~the patient's behavior prohibits such determination.~~
- A focused physical evaluation must be performed as deemed appropriate, including recording the patient's body weight and BMI. In addition, body temperature should be measured when clinically indicated.
- Preoperative dietary restrictions must be considered based on the sedative technique prescribed.
- Pre-operative verbal and written instructions must be given to the patient, parent, escort, guardian or care giver.

3. Personnel and Equipment Requirements

Personnel:

- At least one additional person trained in Basic Life Support for Healthcare Providers must be present in addition to the dentist.

Equipment:

- A positive-pressure oxygen delivery system suitable for the patient being treated must be immediately available.
- A log of equipment maintenance, including monitors and anesthesia delivery system, must be maintained. A pre-procedural check of equipment for each administration of sedation must be performed.
- When inhalation equipment is used, it must have a fail-safe system that is appropriately checked and calibrated. The equipment must also have either (1) a functioning device that prohibits the delivery of less than 30% oxygen or (2) an appropriately calibrated and functioning in-line oxygen analyzer with audible alarm.
- An appropriate scavenging system must be available if gases other than oxygen or air are used.

4. Monitoring and Documentation

Monitoring: A dentist, or at the dentist's direction, an appropriately trained individual, must remain in the operatory during active dental treatment to monitor the patient continuously until the patient meets the criteria for discharge to the recovery area. The appropriately trained individual must be familiar with monitoring techniques and equipment. Monitoring must include:

Consciousness:

- Level of sedation (e.g., responsiveness to verbal commands) must be continually assessed.

Oxygenation:

- Color of mucosa, skin or blood must be evaluated continually.
- Oxygen saturation by pulse oximetry must be used unless precluded or invalidated by the nature of the patient, procedure, or equipment ~~may be clinically useful and should be considered.~~

Ventilation:

- The dentist and/or appropriately trained individual must observe chest excursions continually.

- The dentist and/or appropriately trained individual must verify respirations continually.

Circulation:

- Blood pressure and heart rate should be evaluated pre-operatively, post-operatively and intraoperatively as necessary (unless the patient is unable to tolerate such monitoring).

Documentation: An appropriate sedative record must be maintained, including the names of all drugs administered, time administered and route of administration, including local anesthetics, dosages, and monitored physiological parameters.

5. Recovery and Discharge

- Oxygen and suction equipment must be immediately available if a separate recovery area is utilized.
- The qualified dentist or appropriately trained clinical staff must monitor the patient during recovery until the patient is ready for discharge by the dentist.
- The qualified dentist must determine and document that level of consciousness, oxygenation, ventilation and circulation are satisfactory prior to discharge.
- Post-operative verbal and written instructions must be given to the patient, parent, escort, guardian or care giver.

6. Emergency Management

- If a patient enters a deeper level of sedation than the dentist is qualified to provide, the dentist must stop the dental procedure until the patient returns is returned to the intended level of sedation.
- The qualified dentist is responsible for the sedative management, adequacy of the facility and staff, diagnosis and treatment of emergencies related to the administration of minimal sedation and providing the equipment and protocols for patient rescue.

7. Management of Children

For children 12 years of age and under, the American Dental Association supports the use of the American Academy of Pediatrics/American Academy of Pediatric Dentistry *Guidelines for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures.*

B. Moderate Sedation

1. Patient Evaluation

Patients considered for moderate sedation must undergo a pre-anesthesia evaluation prior to the administration of any sedative. ~~be suitably evaluated prior to the start of any sedative procedure. In healthy or medically stable individuals (ASA I, II) This should consist of at least a review at an appropriate time (ideally within the previous 30 days) of their current medical history and medication use. However, p-~~ In addition, patients with significant medical considerations (e.g., ASA III, IV) may also require consultation with their primary care physician or consulting medical specialist.

2. Pre-operative Preparation

- The patient, parent, legal guardian or care giver must be advised regarding the procedure associated with the delivery of any sedative agents and informed consent for the proposed sedation must be obtained.

- Determination of adequate oxygen supply and equipment necessary to deliver oxygen under positive pressure must be completed.
- Baseline vital signs including blood pressure, pulse and respiration rates, and blood oxygen saturation by pulse oximetry must be obtained unless precluded by the nature of the patient, procedure or equipment the patient's behavior prohibits such determination.
- A focused physical evaluation must be performed, including recording the patient's body weight and BMI. In addition, body temperature should be measured when clinically indicated as deemed appropriate.
- ~~Preoperative dietary restrictions must be considered based on the sedative technique prescribed.~~
- Pre-operative verbal or written instructions must be given to the patient, parent, escort, guardian or care giver, including pre-operative fasting instructions based on the ASA Summary of Fasting and Pharmacologic Recommendations.

3. Personnel and Equipment Requirements

Personnel:

- At least one additional person trained in Basic Life Support for Healthcare Providers must be present in addition to the dentist.

Equipment:

- A positive-pressure oxygen delivery system suitable for the patient being treated must be immediately available.
- A log of equipment maintenance, including monitors and anesthesia delivery system, must be maintained. A pre-procedural check of equipment for each administration of sedation must be performed.
- When inhalation equipment is used, it must have a fail-safe system that is appropriately checked and calibrated. The equipment must also have either (1) a functioning device that prohibits the delivery of less than 30% oxygen or (2) an appropriately calibrated and functioning in-line oxygen analyzer with audible alarm.
- End tidal CO₂ must be monitored unless precluded or invalidated by the nature of the patient, procedure, or equipment. In addition, ventilation may be monitored by evaluation by continual observation of qualitative signs, including auscultation of breath sounds with a precordial or pretracheal stethoscope.
- An appropriate scavenging system must be available if gases other than oxygen or air are used.
- The equipment necessary to establish intravenous access must be available.
- If parenteral sedation is administered, a secure intravenous access site must be maintained until the patient meets discharge criteria.

4. Monitoring and Documentation

Monitoring: A qualified dentist administering moderate sedation must remain in the operatory room to monitor the patient continuously until the patient meets the criteria for recovery. When active treatment concludes and the patient recovers to a minimally sedated level a qualified auxiliary may be directed by the dentist to remain with the patient and continue to monitor them as explained in the guidelines until they are discharged from the facility. The dentist must not leave the facility until the patient meets the criteria for discharge and is discharged from the facility. Monitoring must include:

Consciousness:

- Level of sedation consciousness (e.g., responsiveness to verbal command) must be continually assessed.

Oxygenation:

- Color of mucosa, skin or blood must be evaluated continually.

- Oxygen saturation must be evaluated by pulse oximetry continuously.

Ventilation:

- The dentist must observe chest excursions continually.
- The dentist must monitor ventilation and/or breathing by monitoring end-tidal CO₂ unless precluded or invalidated by the nature of the patient, procedure or equipment. In addition, ventilation may be monitored by continual observation of qualitative signs, including chest excursion and auscultation of breath sounds with a precordial or pretracheal stethoscope. ~~This can be accomplished by auscultation of breath sounds, monitoring end-tidal CO₂ or by verbal communication with the patient.~~

Circulation:

- The dentist must continually evaluate blood pressure and heart rate (unless invalidated by the nature of the patient, procedure or equipment). ~~the patient is unable to tolerate and this is noted in the time-oriented anesthesia record).~~
- Continuous ECG monitoring of patients with significant cardiovascular disease should be considered.

Documentation:

- Appropriate time-oriented anesthetic record must be maintained, including the names of all drugs, dosages and their administration times, including local anesthetics, dosages and monitored physiological parameters. (See Additional Sources of Information for sample of a time-oriented anesthetic record).
- Pulse oximetry, heart rate, respiratory rate, blood pressure and level of consciousness must be recorded continually.

5. Recovery and Discharge

- Oxygen and suction equipment must be immediately available if a separate recovery area is utilized.
- The qualified dentist or appropriately trained clinical staff must continually monitor the patient's blood pressure, heart rate, oxygenation and level of consciousness.
- The qualified dentist must determine and document that level of consciousness; oxygenation, ventilation and circulation are satisfactory for discharge.
- Post-operative verbal and written instructions must be given to the patient, and parent, escort, guardian or care giver.
- If a pharmacological reversal agent is administered before discharge criteria have been met, the patient must be monitored for a longer period than usual before discharge, since re-sedation may occur once the effects of the reversal agent have waned.

6. Emergency Management

- If a patient enters a deeper level of sedation than the dentist is qualified to provide, the dentist must stop the dental procedure until the patient ~~returns~~ is returned to the intended level of sedation.
- The qualified dentist is responsible for the sedative management, adequacy of the facility and staff, diagnosis and treatment of emergencies related to the administration of moderate sedation and providing the equipment, drugs and protocol for patient rescue.

7. Management of Children

For children 12 years of age and under, the American Dental Association supports the use of the American Academy of Pediatrics/American Academy of Pediatric Dentistry *Guidelines for*

C. Deep Sedation or General Anesthesia

1. Patient Evaluation

Patients considered for deep sedation or general anesthesia must undergo a pre-anesthesia evaluation prior to be suitably evaluated prior to the start the administration of any sedative procedure. In healthy or medically stable individuals (ASA I, II) This must consist of at least a review of their current medical history and medication use and NPO status. In addition, However, patients with significant medical considerations (e.g., ASA III, IV) may also require consultation with their primary care physician or consulting medical specialist.

2. Pre-operative Preparation

- The patient, parent, guardian or care giver must be advised regarding the procedure associated with the delivery of any sedative or anesthetic agents and informed consent for the proposed sedation/anesthesia must be obtained.
- Determination of adequate oxygen supply and equipment necessary to deliver oxygen under positive pressure must be completed.
- Baseline vital signs (including body weight, blood pressure, pulse rate, respiration rate, and blood oxygen saturation) must be obtained unless invalidated by the patient, procedure or equipment the patient's behavior prohibits such determination. In addition, body temperature should be measured when clinically appropriate.
- A focused physical evaluation must be performed including recording the patient's body weight and BMI. as deemed appropriate. In addition, body temperature should be measured when clinically indicated.
- ~~Preoperative dietary restrictions must be considered based on the sedative/anesthetic technique prescribed.~~
- Pre-operative verbal and written instructions must be given to the patient, parent, escort, guardian or care giver, including pre-operative fasting instructions based on the ASA Summary of Fasting and Pharmacologic Recommendations.
- An intravenous line, which is secured throughout the procedure, must be established except as provided in part IV. C.6. Pediatric and Special Needs Patients.

3. Personnel and Equipment Requirements

Personnel: A minimum of three (3) individuals must be present.

- A dentist qualified in accordance with part III. C. of these Guidelines to administer the deep sedation or general anesthesia.
- Two additional individuals who have current certification of successfully completing a Basic Life Support (BLS) Course for the Healthcare Provider.
- When the same individual administering the deep sedation or general anesthesia is performing the dental procedure, one of the additional appropriately trained team members must be designated for patient monitoring.

Equipment:

- A positive-pressure oxygen delivery system suitable for the patient being treated must be immediately available.
- A log of equipment maintenance, including monitors and anesthesia delivery systems, must be maintained. A pre-procedural check of equipment for each administration must be performed.

- When inhalation equipment is used, it must have a fail-safe system that is appropriately checked and calibrated. The equipment must also have either (1) a functioning device that prohibits the delivery of less than 30% oxygen or (2) an appropriately calibrated and functioning in-line oxygen analyzer with audible alarm.
- An appropriate scavenging system must be available if gases other than oxygen or air are used.
- The equipment necessary to establish intravenous access must be available.
- Equipment and drugs necessary to provide advanced airway management, and advanced cardiac life support must be immediately available.
- End tidal CO₂ must be monitored unless precluded or invalidated by the nature of the patient, procedure, or equipment. In addition, ventilation may be monitored and evaluated by continual observation of qualitative signs, including auscultation of breath sounds with a precordial or pretracheal stethoscope. If volatile anesthetic agents are utilized, a capnograph must be utilized and an inspired agent analysis monitor should be considered.
- Resuscitation medications and an appropriate defibrillator must be immediately available.

4. Monitoring and Documentation

Monitoring: A qualified dentist administering deep sedation or general anesthesia must remain in the operatory room to monitor the patient continuously until the patient meets the criteria for recovery. The dentist must not leave the facility until the patient meets the criteria for discharge and is discharged from the facility. Monitoring must include:

Oxygenation:

- Color of mucosa, skin or blood must be continually evaluated.
- Oxygenation saturation must be evaluated continuously by pulse oximetry.

Ventilation:

- Intubated patient: End-tidal CO₂ must be continuously monitored and evaluated.
- Non-intubated patient: ~~Breath sounds via auscultation and/or~~ End-tidal CO₂ must be continually monitored and evaluated unless precluded or invalidated by the nature of the patient, procedure, or equipment. In addition, ventilation may be monitored and evaluated by continual observation of qualitative signs, including auscultation of breath sounds with a precordial or pretracheal stethoscope.
- Respiration rate must be continually monitored and evaluated.

Circulation:

- The dentist must continuously evaluate heart rate and rhythm via ECG throughout the procedure, as well as pulse rate via pulse oximetry.
- The dentist must continually evaluate blood pressure.

Temperature:

- A device capable of measuring body temperature must be readily available during the administration of deep sedation or general anesthesia.
- The equipment to continuously monitor body temperature should be available and must be performed whenever triggering agents associated with malignant hyperthermia are administered.

Documentation:

- Appropriate time-oriented anesthetic record must be maintained, including the names of all drugs, dosages and their administration times, including local anesthetics and monitored physiological parameters. (See Additional Sources of Information for sample of a time-oriented anesthetic record)
- Pulse oximetry and end-tidal CO₂ measurements (if taken), heart rate, respiratory rate and blood pressure must be recorded continually.

5. Recovery and Discharge

- Oxygen and suction equipment must be immediately available if a separate recovery area is utilized.
- The dentist or clinical staff must continually monitor the patient's blood pressure, heart rate, oxygenation and level of consciousness.
- The dentist must determine and document that level of consciousness; oxygenation, ventilation and circulation are satisfactory for discharge.
- Post-operative verbal and written instructions must be given to the patient, and parent, escort, guardian or care giver.

6. Pediatric Patients and Those with Special Needs

Because many dental patients undergoing deep sedation or general anesthesia are mentally and/or physically challenged, it is not always possible to have a comprehensive physical examination or appropriate laboratory tests prior to administering care. When these situations occur, the dentist responsible for administering the deep sedation or general anesthesia should document the reasons preventing the recommended preoperative management.

In selected circumstances, deep sedation or general anesthesia may be utilized without establishing an indwelling intravenous line. These selected circumstances may include very brief procedures or periods of time, which, for example, may occur in some pediatric patients; or the establishment of intravenous access after deep sedation or general anesthesia has been induced because of poor patient cooperation.

7. Emergency Management

The qualified dentist is responsible for sedative/anesthetic management, adequacy of the facility and staff, diagnosis and treatment of emergencies related to the administration of deep sedation or general anesthesia and providing the equipment, drugs and protocols for patient rescue.

Note regarding Section V: Additional Sources of Information as well as references supporting the Guidelines will become available on the ADA's website and no longer listed within the policy document.

~~V. Additional Sources of Information~~

~~American Dental Association. Example of a time oriented anesthesia record at www.ada.org.~~

~~American Academy of Pediatric Dentistry (AAPD). *Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures: An Update*. Developed through a collaborative effort between the American Academy of Pediatrics and the AAPD. Available at <http://www.aapd.org/policies>.~~

~~American Academy of Periodontology (AAP). *Guidelines: In-Office Use of Conscious Sedation in Periodontics*. Available at <http://www.perio.org/resources-products/posppr3-1.html>. The AAP rescinded this policy in 2008.~~

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NOT adopted by the 2015 ADA House of Delegates

707
708 **Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students**

709 Underscore denotes proposed additions

710 ~~Strikethrough~~ denotes proposed deletions

711
712
713 **I. Introduction**

714
715 The administration of local anesthesia, sedation and general anesthesia is an integral part of the practice of
716 dentistry. The American Dental Association is committed to the safe and effective use of these modalities by
717 appropriately educated and trained dentists.

718
719 Anxiety and pain control can be defined as the application of various physical, chemical and psychological
720 modalities to the prevention and treatment of preoperative, operative and postoperative patient anxiety and
721 pain to allow dental treatment to occur in a safe and effective manner. It involves all disciplines of dentistry
722 and, as such, is one of the most important aspects of dental education. The intent of these *Guidelines* is to
723 provide direction for the teaching of pain control and sedation to dentists and can be applied at all levels of
724 dental education from predoctoral through continuing education. They are designed to teach initial
725 competency in pain control and minimal and moderate sedation techniques.

726
727 These *Guidelines* recognize that many dentists have acquired a high degree of competency in the use of
728 anxiety and pain control techniques through a combination of instruction and experience. It is assumed that
729 this has enabled these teachers and practitioners to meet the educational criteria described in this document.

730
731 It is not the intent of the *Guidelines* to fit every program into the same rigid educational mold. This is neither
732 possible nor desirable. There must always be room for innovation and improvement. They do, however,
733 provide a reasonable measure of program acceptability, applicable to all institutions and agencies engaged in
734 predoctoral and continuing education.

735
736 The curriculum in anxiety and pain control is a continuum of educational experiences that will extend over
737 several years of the predoctoral program. It should provide the dental student with the knowledge and skills
738 necessary to provide minimal sedation to alleviate anxiety and control pain without inducing detrimental
739 physiological or psychological side effects. Dental schools whose goal is to have predoctoral students achieve
740 competency in techniques such as local anesthesia and nitrous oxide inhalation and minimal sedation must
741 meet all of the goals, prerequisites, didactic content, clinical experiences, faculty and facilities, as described in
742 these *Guidelines*.

743
744 Techniques for the control of anxiety and pain in dentistry should include both psychological and
745 pharmacological modalities. Psychological strategies should include simple relaxation techniques for the
746 anxious patient and more comprehensive behavioral techniques to control pain. Pharmacological strategies
747 should include not only local anesthetics but also sedatives, analgesics and other useful agents. Dentists
748 should learn indications and techniques for administering these drugs enterally, parenterally and by inhalation
749 as supplements to local anesthesia.

750
751 The predoctoral curriculum should provide instruction, exposure and/or experience in anxiety and pain
752 control, including minimal and moderate sedation. The predoctoral program must also provide the knowledge
753 and skill to enable students to recognize and manage any emergencies that might arise as a consequence of

treatment. Predoctoral dental students must complete a course in Basic Life Support for the Healthcare Provider. Though Basic Life Support courses are available online, any course taken online should be followed up with a hands-on component and be approved by the American Heart Association or the American Red Cross.

Local anesthesia is the foundation of pain control in dentistry. Although the use of local anesthetics in dentistry has a long record of safety, dentists must be aware of the maximum safe dosage limit for each patient, since large doses of local anesthetics may increase the level of central nervous system depression with sedation. The use of minimal and moderate sedation requires an understanding of local anesthesia and the physiologic and pharmacologic implications of the local anesthetic agents when combined with the sedative agents

The knowledge, skill and clinical experience required for the safe administration of deep sedation and/or general anesthesia are beyond the scope of predoctoral and continuing education programs. Advanced education programs that teach deep sedation and/or general anesthesia to competency have specific teaching requirements described in the Commission on Dental Accreditation requirements for those advanced programs and represent the educational and clinical requirements for teaching deep sedation and/or general anesthesia in dentistry.

The objective of educating dentists to utilize pain control, sedation and general anesthesia is to enhance their ability to provide oral health care. The American Dental Association urges dentists to participate regularly in continuing education update courses in these modalities in order to remain current.

All areas in which local anesthesia and sedation are being used must be properly equipped with suction, physiologic monitoring equipment, a positive pressure oxygen delivery system suitable for the patient being treated and emergency drugs. Protocols for the management of emergencies must be developed and training programs held at frequent intervals.

II. Definitions

Methods of Anxiety and Pain Control

~~analgesia~~ — the diminution or elimination of pain. [Moved to Terms section]

~~conscious sedation[†]~~ — a minimally depressed level of consciousness that retains the patient's ability to independently and continuously maintain an airway and respond appropriately to physical stimulation or verbal command and that is produced by a pharmacological or non-pharmacological method or a combination thereof.

~~In accord with this particular definition, the drugs and/or techniques used should carry a margin of safety wide enough to render unintended loss of consciousness unlikely. Further, patients whose only response is reflex withdrawal from repeated painful stimuli would not be considered to be in a state of conscious sedation.~~

~~combination inhalation-enteral conscious sedation (combined conscious sedation)~~ — conscious sedation using inhalation and enteral agents.

~~When the intent is anxiolysis only, and the appropriate dosage of agents is administered, then the definition of enteral and/or combination inhalation-enteral conscious sedation (combined conscious sedation) does not apply.~~

~~local anesthesia~~ — the elimination of sensation, especially pain, in one part of the body by the topical application or regional injection of a drug. [Moved to Terms section]

[†]. ~~Parenteral conscious sedation may be achieved with the administration of a single agent or by the administration of more than one agent.~~

~~Note: Although the use of local anesthetics is the foundation of pain control in dentistry and has a long record of safety, dentists must always be aware of the maximum, safe dosage limits for each patient. Large doses of local anesthetics in themselves may result in central nervous system depression especially in combination with sedative agents.~~ [Moved to Terms section]

minimal sedation - a minimally depressed level of consciousness, produced by a pharmacological method, that retains the patient's ability to independently and continuously maintain an airway and respond *normally* to tactile stimulation and verbal command. Although cognitive function and coordination may be modestly impaired, ventilatory and cardiovascular functions are unaffected.²

Note: In accord with this particular definition, the drug(s) and/or techniques used should carry a margin of safety wide enough never to render unintended loss of consciousness. Further, patients whose only response is reflex withdrawal from repeated painful stimuli would not be considered to be in a state of minimal sedation.

When the intent is minimal sedation for adults, the appropriate initial dosing of a single enteral drug is no more than the maximum recommended dose (MRD) of a drug that can be prescribed for unmonitored home use.

~~For children age 12 and under, the use of preoperative sedatives for children (aged 12 and under) prior to arrival in the dental office, except in extraordinary situations, must be avoided due to the risk of unobserved respiratory obstruction during transport by untrained individuals.~~

Prescription medications intended to accomplish procedural sedation for children age 12 and under must not be administered without the benefit of direct supervision by a trained dental/medical provider. (Source: the American Academy of Pediatrics/American Academy of Pediatric Dentistry Guidelines for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures.

Children (aged 12 and under) can become moderately sedated despite the intended level of minimal sedation; should this occur, the guidelines for moderate sedation apply.

For children 12 years of age and under, the American Dental Association supports the use of the American Academy of Pediatrics/American Academy of Pediatric Dentistry *Guidelines for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures.*

~~Nitrous oxide/oxygen may be used in combination with a single enteral drug in minimal sedation.~~

Nitrous oxide/oxygen when used in combination with sedative agent(s) may produce minimal, moderate, deep sedation or general anesthesia.

The following definitions apply to administration of minimal sedation via an enteral route:

maximum recommended dose (MRD) - maximum FDA-recommended dose of a drug as printed in FDA-approved labeling for unmonitored home use.

incremental dosing - administration of multiple doses of a drug until a desired effect is reached, but not to exceed the maximum recommended dose (MRD).

supplemental dosing - during minimal sedation, supplemental dosing is a single additional dose of the initial dose of the initial drug that may be necessary for prolonged procedures. The supplemental dose should not exceed one-half of the initial total dose and should not be administered until the dentist has determined the clinical half-life of the initial dosing has passed. The total aggregate dose must not exceed 1.5x the MRD on the day of treatment. For the

² Portions excerpted from *Continuum of Depth of Sedation: Definition of General Anesthesia and Levels of Sedation/Analgesia, 2014* 2004, of the American Society of Anesthesiologists (ASA). A copy of the full text can be obtained from ASA, 520 N. Northwest Highway, Park Ridge, IL 60068-2573.

purpose of enteral or combination enteral/inhalation sedation, when the MRD of a drug is exceeded or more than one drug is used in combination, with or without the concomitant use of nitrous oxide, the guidelines for moderate sedation apply.

moderate sedation - a drug-induced depression of consciousness during which patients respond *purposefully* to verbal commands, either alone or accompanied by light tactile stimulation. No interventions are required to maintain a patent airway, and spontaneous ventilation is adequate. Cardiovascular function is usually maintained.³

Note: In accord with this particular definition, the drugs and/or techniques used should carry a margin of safety wide enough to render unintended loss of consciousness unlikely. Repeated dosing of an agent before the effects of previous dosing can be fully appreciated may result in a greater alteration of the state of consciousness than is the intent of the dentist. Further, a patient whose only response is reflex withdrawal from a painful stimulus is not considered to be in a state of moderate sedation.

The following definition applies to administration of moderate and deeper levels of sedation:

titration - administration of incremental doses of an intravenous or inhalation drug until a desired effect is reached. Knowledge of each drug's time of onset, peak response and duration of action is essential to avoid over sedation. Although the concept of titration of a drug to effect is critical for patient safety, when the intent is moderate sedation one must know whether the previous dose has taken full effect before administering an additional drug increment.

deep sedation - a drug-induced depression of consciousness during which patients cannot be easily aroused but respond purposefully following repeated or painful stimulation. The ability to independently maintain ventilatory function may be impaired. Patients may require assistance in maintaining a patent airway, and spontaneous ventilation may be inadequate. Cardiovascular function is usually maintained.³

general anesthesia – a drug-induced loss of consciousness during which patients are not arousable, even by painful stimulation. The ability to independently maintain ventilatory function is often impaired. Patients often require assistance in maintaining a patent airway, and positive pressure ventilation may be required because of depressed spontaneous ventilation or drug-induced depression of neuromuscular function. Cardiovascular function may be impaired.³

Because sedation and general anesthesia are a continuum, it is not always possible to predict how an individual patient will respond. Hence, practitioners intending to produce a given level of sedation should be able to diagnose and manage the physiologic consequences (rescue) for patients whose level of sedation becomes deeper than initially intended.³

For all levels of sedation, the qualified dentist practitioner must have the training, skills, drugs and equipment to identify and manage such an occurrence until either assistance arrives (emergency medical service) or the patient returns to the intended level of sedation without airway or cardiovascular complications.

Routes of Administration

enteral - any technique of administration in which the agent is absorbed through the gastrointestinal (GI) tract or oral mucosa [i.e., oral, rectal, sublingual].

parenteral - a technique of administration in which the drug bypasses the gastrointestinal (GI) tract [i.e., intramuscular (IM), intravenous (IV), intranasal (IN), submucosal (SM), subcutaneous (SC), intraosseous (IO)].

³ Excerpted from *Continuum of Depth of Sedation: Definition of General Anesthesia and Levels of Sedation/Analgesia, 2014 2004*, of the American Society of Anesthesiologists (ASA). A copy of the full text can be obtained from ASA, 520 N. Northwest Highway, Park Ridge, IL 60068-2573.

transdermal - a technique of administration in which the drug is administered by patch or iontophoresis through skin.

transmucosal – a technique of administration in which the drug is administered across mucosa such as intranasal, sublingual, or rectal.

inhalation - a technique of administration in which a gaseous or volatile agent is introduced into the lungs and whose primary effect is due to absorption through the gas/blood interface.

Terms

analgesia – the diminution or elimination of pain [Moved from Definitions section]

local anesthesia - the elimination of sensation, especially pain, in one part of the body by the topical application or regional injection of a drug. [Moved from Definitions section]

Note: Although the use of local anesthetics is the foundation of pain control in dentistry and has a long record of safety, dentists must always be aware of the maximum, safe dosage limits for each patient. Large doses of local anesthetics in themselves may result in central nervous system depression especially in combination with sedative agents. [Moved from Definitions section]

qualified dentist – meets the educational requirements for the appropriate level of sedation in accordance with Section III of these *Guidelines*, or a dentist providing sedation and anesthesia in compliance with their state rules and/or regulations prior to adoption of this document.

must/shall - indicates an imperative need and/or duty; an essential or indispensable item; mandatory.

should - indicates the recommended manner to obtain the standard; highly desirable.

may - indicates freedom or liberty to follow a reasonable alternative.

continual - repeated regularly and frequently in a steady succession.

continuous - prolonged without any interruption at any time.

time-oriented anesthesia record - documentation at appropriate time intervals of drugs, doses and physiologic data obtained during patient monitoring.

immediately available – on site in the facility and available for immediate use.

Levels of Knowledge

familiarity - a simplified knowledge for the purpose of orientation and recognition of general principles.

in-depth - a thorough knowledge of concepts and theories for the purpose of critical analysis and the synthesis of more complete understanding (highest level of knowledge).

Levels of Skill

exposed - the level of skill attained by observation of or participation in a particular activity.

competent - displaying special skill or knowledge derived from training and experience.

proficient – the level of skill attained when a particular activity is accomplished with repeated quality and a more efficient utilization of time (highest level of skill).

American Society of Anesthesiologists (ASA) Patient Physical Status Classification⁴

ASA I - A normal healthy patient.

ASA II - A patient with mild systemic disease.

ASA III - A patient with severe systemic disease.

ASA IV - A patient with severe systemic disease that is a constant threat to life.

ASA V - A moribund patient who is not expected to survive without the operation.

ASA VI - A declared brain-dead patient whose organs are being removed for donor purposes.

E - Emergency operation of any variety (used to modify one of the above classifications, i.e., ASA III-E).

American Society of Anesthesiologists' Fasting Guidelines*

Ingested Material	Minimum Fasting Period
Clear liquids	2 hours
Breast milk	4 hours
Infant formula	6 hours
Nonhuman milk	6 hours
Light meal	6 hours
Fatty meal	8 hours

*American Society of Anesthesiologists: Practice Guidelines for preoperative fasting and the use of pharmacologic agents to reduce the risk of pulmonary aspiration: application to healthy patients undergoing elective procedures. *Anesthesiology* 114:495. 2011. Reprinted with permission.

Education Courses

Education may be offered at different levels (competency, update, survey courses and advanced education programs). A description of these different levels follows:

1. Competency Courses are designed to meet the needs of dentists who wish to become competent knowledgeable and proficient in the safe and effective administration of local anesthesia, minimal and moderate sedation. They consist of lectures, demonstrations and sufficient clinical participation to assure the faculty that the dentist understands the procedures taught and can safely and effectively apply them so that mastery of the subject is achieved. Faculty must assess and document the dentist's competency upon successful completion of such training. To maintain competency, periodic update courses must be completed.

2. Update Courses are designed for persons with previous training. They are intended to provide a review of the subject and an introduction to recent advances in the field. They should be designed didactically and clinically to meet the specific needs of the participants. Participants must have completed previous competency training (equivalent, at a minimum, to the competency course described in this document) and have current experience to be eligible for enrollment in an update course.

3. Survey Courses are designed to provide general information about subjects related to pain control and sedation. Such courses should be didactic and not clinical in nature, since they are not intended to develop clinical competency.

4. Advanced Education Courses are a component of an advanced dental education program, accredited by the ADA Commission on Dental Accreditation in accord with the *Accreditation Standards* for advanced dental

⁴ ASA Physical Status Classification System is reprinted with permission of the American Society of Anesthesiologists, 520 N. Northwest Highway, Park Ridge, IL 60068-2573.

education programs. These courses are designed to prepare the graduate dentist or postdoctoral student in the most comprehensive manner to be competent, knowledgeable and proficient in the safe and effective administration of minimal, moderate and deep sedation and general anesthesia.

III. Teaching Pain Control

These *Guidelines* present a basic overview of the recommendations for teaching pain control.

A. General Objectives: Upon completion of a predoctoral curriculum in pain control the dentist must:

1. have an in-depth knowledge of those aspects of anatomy, physiology, pharmacology and psychology involved in the use of various anxiety and pain control methods;
2. be competent in evaluating the psychological and physical status of the patient, as well as the magnitude of the operative procedure, in order to select the proper regimen;
3. be competent in monitoring vital functions;
4. be competent in prevention, recognition and management of related complications;
5. ~~be familiar with~~ have in-depth knowledge of the appropriateness of and the indications for medical consultation or referral;
6. be competent in the maintenance of proper records with accurate chart entries recording medical history, physical examination, vital signs, drugs administered and patient response.

B. Pain Control Curriculum Content:

1. Philosophy of anxiety and pain control and patient management, including the nature and purpose of pain
2. Review of physiologic and psychologic aspects of anxiety and pain
3. Review of airway anatomy and physiology
4. Physiologic monitoring
 - a. Observation
 - (1) Central nervous system
 - (2) Respiratory system
 - a. Oxygenation
 - b. Ventilation
 - (3) Cardiovascular system
 - b. Monitoring equipment
5. Pharmacologic aspects of anxiety and pain control
 - a. Routes of drug administration
 - b. Sedatives and anxiolytics
 - c. Local anesthetics
 - d. Analgesics and antagonists
 - e. Adverse side effects
 - f. Drug interactions
 - g. Drug abuse
6. Control of preoperative and operative anxiety and pain
 - a. Patient evaluation
 - (1) Psychological status
 - (2) ASA physical status
 - (3) Type and extent of operative procedure
 - b. Nonpharmacologic methods
 - (1) Psychological and behavioral methods

- 1065 (a) Anxiety management
- 1066 (b) Relaxation techniques
- 1067 (c) Systematic desensitization
- 1068 (2) Interpersonal strategies of patient management
- 1069 (3) Hypnosis
- 1070 (4) Electronic dental anesthesia
- 1071 (5) Acupuncture/Acupressure
- 1072 (6) Other
- 1073 c. Local anesthesia
- 1074 (1) Review of related anatomy, and physiology
- 1075 (2) Pharmacology
 - 1076 (i) Dosing
 - 1077 (ii) Toxicity
 - 1078 (iii) Selection of agents
- 1079 (3) Techniques of administration
 - 1080 (i) Topical
 - 1081 (ii) Infiltration (supraperiosteal)
 - 1082 (iii) Nerve block – maxilla-to include:
 - 1083 (aa) Posterior superior alveolar
 - 1084 (bb) Infraorbital
 - 1085 (cc) Nasopalatine
 - 1086 (dd) Greater palatine
 - 1087 (ee) Maxillary (2nd division)
 - 1088 (ff) Other blocks
 - 1089 (iv) Nerve block – mandible-to include:
 - 1090 (aa) Inferior alveolar-lingual
 - 1091 (bb) Mental-incisive
 - 1092 (cc) Buccal
 - 1093 (dd) Gow-Gates
 - 1094 (ee) Closed mouth
 - 1095 (v) Alternative injections-to include:
 - 1096 (aa) Periodontal ligament
 - 1097 (bb) Intraosseous
- 1098 d. Prevention, recognition and management of complications and emergencies
- 1099

C. Sequence of Pain Control Didactic and Clinical Instruction: Beyond the basic didactic instruction in local anesthesia, additional time should be provided for demonstrations and clinical practice of the injection techniques. The teaching of other methods of anxiety and pain control, such as the use of analgesics and enteral, inhalation and parenteral sedation, should be coordinated with a course in pharmacology. By this time the student also will have developed a better understanding of patient evaluation and the problems related to prior patient care. As part of this instruction, the student should be taught the techniques of venipuncture and physiologic monitoring. Time should be included for demonstration of minimal and moderate sedation techniques.

Following didactic instruction in minimal and moderate sedation, the student must receive sufficient clinical experience to demonstrate competency in those techniques in which the student is to be certified. It is understood that not all institutions may be able to provide instruction to the level of clinical competence in pharmacologic sedation modalities to all students. The amount of clinical experience required to achieve competency will vary according to student ability, teaching methods and the anxiety and pain control modality taught.

Clinical experience in minimal and moderate sedation techniques should be related to various disciplines of dentistry and not solely limited to surgical cases. Typically, such experience will be provided in managing healthy adult patients. The sedative care of pediatric patients and those with special needs requires advanced didactic and clinical training.

Throughout both didactic and clinical instruction in anxiety and pain control, psychological management of the patient should also be stressed. Instruction should emphasize that the need for sedative techniques is directly related to the patient's level of anxiety, cooperation, medical condition and the planned procedures.

D. Faculty: Instruction must be provided by qualified faculty for whom anxiety and pain control are areas of major proficiency, interest and concern.

E. Facilities: Competency courses must be presented where adequate facilities are available for proper patient care, including drugs and equipment for the management of emergencies.

IV. Teaching Administration of Minimal Sedation

The faculty responsible for curriculum in minimal sedation techniques must be familiar with the ADA Policy Statement: *Guidelines for the Use of Sedation and General Anesthesia by Dentists*, and the Commission on Dental Accreditation's *Accreditation Standards* for dental education programs.

These *Guidelines* present a basic overview of the recommendations for teaching minimal sedation. These include courses in nitrous oxide/oxygen sedation, enteral sedation, and combined inhalation/enteral techniques.

These *Guidelines* are not intended for the management of enteral and/or combination inhalation-enteral minimal sedation in children, which requires additional course content and clinical learning experience.

[Moved from Section C]

General Objectives: Upon completion of a competency course in minimal sedation, the dentist must be able to:

1. Describe the adult and pediatric anatomy and physiology of the respiratory, cardiovascular and central nervous systems, as they relate to the above techniques.
2. Describe the pharmacological effects of drugs.
3. Describe the methods of obtaining a medical history and conduct an appropriate physical examination.
4. Apply these methods clinically in order to obtain an accurate evaluation.
5. Use this information clinically for ASA classification and risk assessment, and pre-procedure fasting instructions.
6. Choose the most appropriate technique for the individual patient.
7. Use appropriate physiologic monitoring equipment.
8. Describe the physiologic responses that are consistent with minimal sedation.
9. Understand the sedation/general anesthesia continuum.
10. Demonstrate the ability to diagnose and treat emergencies related to the next deeper level of anesthesia than intended.

Inhalation Sedation (Nitrous Oxide/Oxygen)

A. Inhalation Sedation Course Objectives: Upon completion of a competency course in inhalation sedation techniques, the dentist must be able to:

1. Describe the basic components of inhalation sedation equipment.
2. Discuss the function of each of these components.
3. List and discuss the advantages and disadvantages of inhalation sedation.
4. List and discuss the indications and contraindications of inhalation sedation.
5. List the complications associated with inhalation sedation.
6. Discuss the prevention, recognition and management of these complications.
7. Administer inhalation sedation to patients in a clinical setting in a safe and effective manner.
8. Discuss the abuse potential, occupational hazards and other untoward effects of inhalation agents.

B. Inhalation Sedation Course Content:

1. Historical, philosophical and psychological aspects of anxiety and pain control.
2. Patient evaluation and selection through review of medical history taking, physical diagnosis and psychological considerations.
3. Definitions and descriptions of physiological and psychological aspects of anxiety and pain.
4. Description of the stages of drug-induced central nervous system depression through all levels of consciousness and unconsciousness, with special emphasis on the distinction between the conscious and the unconscious state.
5. Review of pediatric and adult respiratory and circulatory physiology and related anatomy.
6. Pharmacology of agents used in inhalation sedation, including drug interactions and incompatibilities.
7. Indications and contraindications for use of inhalation sedation.
8. Review of dental procedures possible under inhalation sedation.
9. Patient monitoring using observation and monitoring equipment (i.e., pulse oximetry), with particular attention to vital signs and reflexes related to pharmacology of nitrous oxide.
10. Importance of maintaining proper records with accurate chart entries recording medical history, physical examination, vital signs, drugs and doses administered and patient response.
11. Prevention, recognition and management of complications and life-threatening situations.
12. Administration of local anesthesia in conjunction with inhalation sedation techniques.
13. Description, maintenance and use of inhalation sedation equipment.
14. Introduction to potential health hazards of trace anesthetics and proposed techniques for limiting occupational exposure.
15. Discussion of abuse potential.

C. Inhalation Sedation Course Duration: While length of a course is only one of the many factors to be considered in determining the quality of an educational program, the course should be a minimum of 14 hours plus management of clinical dental cases, including a clinical component during which clinical competency in inhalation sedation technique is achieved. The inhalation sedation course most often is completed as a part of the predoctoral dental education program. However, the course may be completed in a postdoctoral continuing education competency course.

D. Participant Evaluation and Documentation of Inhalation Sedation Instruction: Competency courses in inhalation sedation techniques must afford participants with sufficient clinical experience to enable them to achieve competency. This experience must be provided under the supervision of qualified faculty and must be evaluated. The course director must certify the competency of participants upon satisfactory completion of training. Records of the didactic instruction and clinical experience, including the number of patients treated by each participant must be maintained and available.

E. Faculty: The course should be directed by a dentist or physician qualified by experience and training. This individual should possess an active permit or license to administer moderate sedation in at least one state, have had at least three years of experience, including the individual's formal postdoctoral training in anxiety and pain control. In addition, the participation of highly qualified individuals in related fields, such as anesthesiologists, pharmacologists, internists, and cardiologists and psychologists, should be encouraged.

A participant-faculty ratio of not more than ten-to-one when inhalation sedation is being used allows for adequate supervision during the clinical phase of instruction; a one-to-one ratio is recommended during the early state of participation.

The faculty should provide a mechanism whereby the participant can evaluate the performance of those individuals who present the course material.

F. Facilities: Competency courses must be presented where adequate facilities are available for proper patient care, including drugs and equipment for the management of emergencies.

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1228 **Enteral and/or Combination Inhalation-Enteral Minimal Sedation**

1229

1230 **A. Enteral and/or Combination Inhalation-Enteral Minimal Sedation Course Objectives: Upon**

1231 completion of a competency course in enteral and/or combination inhalation-enteral minimal sedation

1232 techniques, the dentist must be able to:

- 1233 1. Describe the basic components of inhalation sedation equipment.
- 1234 2. Discuss the function of each of these components.
- 1235 3. List and discuss the advantages and disadvantages of enteral and/or combination inhalation-enteral
- 1236 minimal sedation (combined minimal sedation).
- 1237 4. List and discuss the indications and contraindications for the use of enteral and/or combination
- 1238 inhalation-enteral minimal sedation (combined minimal sedation).
- 1239 5. List the complications associated with enteral and/or combination inhalation-enteral minimal sedation
- 1240 (combined minimal sedation).
- 1241 6. Discuss the prevention, recognition and management of these complications.
- 1242 7. Administer enteral and/or combination inhalation-enteral minimal sedation (combined minimal
- 1243 sedation) to patients in a clinical setting in a safe and effective manner.
- 1244 8. Discuss the abuse potential, occupational hazards and other effects of enteral and inhalation agents.
- 1245 9. Discuss the pharmacology of the enteral and inhalation drugs selected for administration.
- 1246 10. Discuss the precautions, contraindications and adverse reactions associated with the enteral and
- 1247 inhalation drugs selected.
- 1248 11. Describe a protocol for management of emergencies in the dental office and list and discuss the
- 1249 emergency drugs and equipment required for management of life-threatening situations.
- 1250 12. Demonstrate the ability to manage life-threatening emergency situations, including current
- 1251 certification in Basic Life Support for Healthcare Providers.
- 1252 13. Discuss the pharmacological effects of combined drug therapy, their implications and their
- 1253 management. Nitrous oxide/oxygen when used in combination with sedative agent(s) may produce
- 1254 minimal, moderate, deep sedation or general anesthesia.
- 1255

1256 **B. Enteral and/or Combination Inhalation-Enteral Minimal Sedation Course Content:**

1257

- 1258 1. Historical, philosophical and psychological aspects of anxiety and pain control.
- 1259 2. Patient evaluation and selection through review of medical history taking, physical diagnosis and
- 1260 psychological profiling.
- 1261 3. Definitions and descriptions of physiological and psychological aspects of anxiety and pain.
- 1262 4. Description of the stages of drug-induced central nervous system depression through all levels of
- 1263 consciousness and unconsciousness, with special emphasis on the distinction between the conscious
- 1264 and the unconscious state.
- 1265 5. Review of pediatric and adult respiratory and circulatory physiology and related anatomy.
- 1266 6. Pharmacology of agents used in enteral and/or combination inhalation-enteral minimal sedation,
- 1267 including drug interactions and incompatibilities.
- 1268 7. Indications and contraindications for use of enteral and/or combination inhalation-enteral minimal
- 1269 sedation (combined minimal sedation).
- 1270 8. Review of dental procedures possible under enteral and/or combination inhalation-enteral minimal
- 1271 sedation).
- 1272 9. Patient monitoring using observation, monitoring equipment, with particular attention to vital signs and
- 1273 reflexes related to consciousness.
- 1274 10. Maintaining proper records with accurate chart entries recording medical history, physical
- 1275 examination, informed consent, time-oriented anesthesia record, including the names of all drugs
- 1276 administered including local anesthetics, doses, and monitored physiological parameters.
- 1277 11. Prevention, recognition and management of complications and life-threatening situations.
- 1278 12. Administration of local anesthesia in conjunction with enteral and/or combination inhalation-enteral
- 1279 minimal sedation techniques.
- 1280 13. Description, maintenance and use of inhalation sedation equipment.

- 1281 14. Introduction to potential health hazards of trace anesthetics and proposed techniques for limiting
1282 occupational exposure.
1283 15. Discussion of abuse potential.
1284

1285 **C. Enteral and/or Combination Inhalation-Enteral Minimal Sedation Course Duration:** Participants must
1286 be able to document current certification in Basic Life Support for Healthcare Providers and have completed a
1287 nitrous oxide competency course to be eligible for enrollment in this course. While length of a course is only
1288 one of the many factors to be considered in determining the quality of an educational program, the course
1289 should include a minimum of *16 hours*, plus clinically-oriented experiences during which competency in
1290 enteral and/or combined inhalation-enteral minimal sedation techniques is demonstrated. Clinically-oriented
1291 experiences may include group observations on patients undergoing enteral and/or combination inhalation-
1292 enteral minimal sedation. Clinical experience in managing a compromised airway is critical to the prevention
1293 of life-threatening emergencies. The faculty should schedule participants to return for additional clinical
1294 experience if competency has not been achieved in the time allotted. The educational course may be
1295 completed in a predoctoral dental education curriculum or a postdoctoral continuing education competency
1296 course.
1297

1298 ~~These *Guidelines* are not intended for the management of enteral and/or combination inhalation-enteral~~
1299 ~~minimal sedation in children, which requires additional course content and clinical learning experience.~~
1300 [Moved to Section IV]
1301

1302 **D. Participant Evaluation and Documentation of Instruction:** Competency courses in combination
1303 inhalation-enteral minimal sedation techniques must afford participants with sufficient clinical understanding to
1304 enable them to achieve competency. The course director must certify the competency of participants upon
1305 satisfactory completion of the course. Records of the course instruction must be maintained and available.
1306

1307 **E. Faculty:** The course should be directed by a dentist or physician qualified by experience and training. This
1308 individual should possess a current permit or license to administer moderate sedation in at least one state,
1309 have had at least three years of experience, including the individual's formal postdoctoral training in anxiety
1310 and pain control. Dental faculty with broad clinical experience in the particular aspect of the subject under
1311 consideration should participate. In addition, the participation of highly qualified individuals in related fields,
1312 such as anesthesiologists, pharmacologists, internists, and cardiologists and psychologists, should be
1313 encouraged. The faculty should provide a mechanism whereby the participant can evaluate the performance
1314 of those individuals who present the course material.
1315

1316 **F. Facilities:** Competency courses must be presented where adequate facilities are available for proper
1317 patient care, including drugs and equipment for the management of emergencies.
1318

1319 V. Teaching Administration of Moderate Sedation

1320

1321 These *Guidelines* present a basic overview of the requirements for a competency course in moderate
1322 sedation. These include courses in enteral and parenteral moderate sedation ~~and parenteral moderate~~
1323 ~~sedation~~. The teaching guidelines contained in this section on moderate sedation differ slightly from
1324 documents in medicine to reflect the differences in delivery methodologies and practice environment in
1325 dentistry. ~~For this reason, separate teaching guidelines have been developed for moderate enteral and~~
1326 ~~moderate parenteral sedation.~~
1327

1328 Completion of a pre-requisite nitrous oxide-oxygen competency course is required for participants combining
1329 parenteral sedation with nitrous oxide-oxygen. [Moved from Section C]
1330

1331 **A. Course Objectives:** Upon completion of a course in moderate sedation, the dentist must be able to:
1332

- 1333 1. List and discuss the advantages and disadvantages of moderate sedation.
- 1334 2. Discuss the prevention, recognition and management of complications associated with moderate
1335 sedation.

3. Administer moderate sedation to patients in a clinical setting in a safe and effective manner.
4. Discuss the abuse potential, occupational hazards and other untoward effects of the agents utilized to achieve moderate sedation.
5. Describe and demonstrate the technique of intravenous access, intramuscular injection and other parenteral techniques.
6. Discuss the pharmacology of the drug(s) selected for administration.
7. Discuss the precautions, indications, contraindications and adverse reactions associated with the drug(s) selected.
8. Administer the selected drug(s) to dental patients in a clinical setting in a safe and effective manner.
9. List the complications associated with techniques of moderate sedation.
10. Describe a protocol for management of emergencies in the dental office and list and discuss the emergency drugs and equipment required for the prevention and management of emergency situations.
11. Discuss principles of advanced cardiac life support or an appropriate dental sedation/anesthesia emergency course equivalent.
12. Demonstrate the ability to manage emergency situations.
13. Demonstrate the ability to diagnose and treat emergencies related to the next deeper level of anesthesia than intended.

B. Moderate Sedation Course Content:

1. Historical, philosophical and psychological aspects of anxiety and pain control.
2. Patient evaluation and selection through review of medical history taking, physical diagnosis and psychological considerations.
3. Use of patient history and examination for ASA classification, risk assessment and pre-procedure fasting instructions.
4. Definitions and descriptions of physiological and psychological aspects of anxiety and pain.
5. Description of the sedation anesthesia continuum, with special emphasis on the distinction between the conscious and the unconscious state.
6. Review of pediatric and adult respiratory and circulatory physiology and related anatomy.
7. Pharmacology of local anesthetics and agents used in moderate sedation, including drug interactions and contraindications.
8. Indications and contraindications for use of moderate sedation.
9. Review of dental procedures possible under moderate sedation.
10. Patient monitoring using observation and monitoring equipment, with particular attention to vital signs, ventilation/breathing and reflexes related to consciousness.
11. Maintaining proper records with accurate chart entries recording medical history, physical examination, informed consent, time-oriented anesthesia record, including the names of all drugs administered including local anesthetics, doses, and monitored physiological parameters.
12. Prevention, recognition and management of complications and emergencies.
13. Description, maintenance and use of moderate sedation monitors and equipment.
14. Discussion of abuse potential.
15. Intravenous access: anatomy, equipment and technique.
16. Prevention, recognition and management of complications of venipuncture and other parenteral techniques.
17. Description and rationale for the technique to be employed.
18. Prevention, recognition and management of systemic complications of moderate sedation, with particular attention to airway maintenance and support of the respiratory and cardiovascular systems.

C. Moderate Enteral Sedation Course Duration: A minimum of 24 hours of instruction, plus management of at least 10 adult case experiences by the enteral and/or enteral-nitrous oxide/oxygen route are required to achieve competency. These ten cases must include at least three live clinical dental experiences managed by participants in groups no larger than five. The remaining cases may include simulations and/or video presentations, but must include one experience in returning (rescuing) a patient from deep to moderate

sedation. Participants combining enteral moderate sedation with nitrous oxide-oxygen must have first completed a nitrous oxide competency course.

Participants should be provided supervised opportunities for clinical experience to demonstrate competence in airway management. Clinical experience will be provided in managing healthy adult patients; **this course in moderate enteral sedation is not designed for the management of children (aged 12 and under).** Additional supervised clinical experience is necessary to prepare participants to manage medically compromised adults and special needs patients. This course in moderate enteral sedation does not result in competency in moderate parenteral sedation. The faculty should schedule participants to return for additional didactic or clinical exposure if competency has not been achieved in the time allotted.

Moderate Parenteral Sedation Course Duration: A minimum of 60 hours of didactic instruction, plus administration of sedation for management of at least 20 individually-managed dental patients by the intravenous any route per participant including intravenous administration, is required to demonstrate achieve competency in moderate sedation techniques. Of the 20 cases, all must be individually managed by the anesthesia operator dentist. Participants combining parenteral moderate sedation with nitrous oxide-oxygen must have first completed a nitrous oxide competency course.

Clinical experience in managing a compromised airway is critical to the prevention of emergencies. Participants should be provided supervised opportunities for clinical experience to demonstrate competence in management of the airway. Typically, clinical experience will be provided in managing healthy adult patients. **Additional supervised clinical experience is necessary to prepare participants to manage children (aged 12 and under) and medically compromised adults.** Successful completion of this course does result in clinical competency in moderate parenteral sedation. The faculty should schedule participants to return for additional clinical experience if competency has not been achieved in the time allotted.

D. Participant Evaluation and Documentation of Instruction: Competency courses in moderate sedation techniques must afford participants with sufficient clinical experience to enable them to achieve competency. This experience must be provided under the supervision of qualified faculty and must be evaluated. The course director must certify the competency of participants upon satisfactory completion of training in each moderate sedation technique, including instruction, clinical experience and airway management. Records of the didactic instruction and clinical experience, including the number of patients managed by each participant in each anxiety and pain control modality must be maintained and available for review.

E. Faculty: The course should be directed by a dentist or physician qualified by experience and training. This individual should possess a current permit or license to administer deep sedation and general anesthesia in at least one state, have had at least three years of experience, including formal postdoctoral training in anxiety and pain control. Dental faculty with broad clinical experience in the particular aspect of the subject under consideration should participate. In addition, the participation of highly qualified individuals in related fields, such as anesthesiologists, pharmacologists, internists, cardiologists and psychologists, should be encouraged.

A participant-faculty ratio of not more than ~~five-four~~ to-one when moderate enteral sedation is being taught allows for adequate supervision during the clinical phase of instruction. ~~A participant-faculty ratio of not more than three to one when moderate parenteral sedation is being taught allows for adequate supervision during the clinical phase of instruction;~~ a one-to-one ratio is recommended during the early stage of participation.

The faculty should provide a mechanism whereby the participant can evaluate the performance of those individuals who present the course material.

F. Facilities: Competency courses in moderate sedation must be presented where adequate facilities are available for proper patient care, including drugs and equipment for the management of emergencies. These facilities may include dental and medical schools/offices, hospitals and surgical centers.

Note regarding Section V: Additional Sources of Information as well as references supporting the Guidelines will become available on the ADA's website and no longer listed within the policy document.

VI. Additional Sources of Information

American Dental Association. Example of a time-oriented anesthesia record at www.ada.org.

American Academy of Pediatric Dentistry (AAPD). *Guidelines for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures: An Update*. Developed through a collaborative effort between the American Academy of Pediatrics and the AAPD. Available at <http://www.aapd.org/policies>

American Academy of Periodontology (AAP). *Guidelines: In-Office Use of Conscious Sedation in Periodontics*. Available at <http://www.perio.org/resources-products/posppr3-1.html>. The AAP rescinded this policy in 2008.

American Association of Oral and Maxillofacial Surgeons (AAOMS). *Parameters and Pathways: Clinical Practice Guidelines for Oral and Maxillofacial Surgery (AAOMS ParPath o1) Anesthesia in Outpatient Facilities*. Contact AAOMS at 1-847-678-6200 or visit <http://www.aaoms.org/index.php>

American Association of Oral and Maxillofacial Surgeons (AAOMS). *Office Anesthesia Evaluation Manual 7th Edition*. Contact AAOMS at 1-847-678-6200 or visit <http://www.aaoms.org/index.php>

American Society of Anesthesiologists (ASA). *Practice Guidelines for Preoperative Fasting and the Use of Pharmacological Agents to Reduce the Risk of Pulmonary Aspiration: Application to Healthy Patients Undergoing Elective Procedures*. Available at <https://ecommerce.asahq.org/p-178-practice-guidelines-for-preoperative-fasting.aspx>

American Society of Anesthesiologists (ASA). *Practice Guidelines for Sedation and Analgesia by Non-Anesthesiologists*. Available at <http://www.asahq.org/Home/For-Members/Practice-Management/Practice-Parameters#sedation>

The ASA has other anesthesia resources that might be of interest to dentists. For more information, go to <http://www.asahq.org/publicationsAndServices/sgstoc.htm>

Commission on Dental Accreditation (CODA). *Accreditation Standards for Predoctoral and Advanced Dental Education Programs*. Available at <http://www.ada.org/115.aspx>

National Institute for Occupational Safety and Health (NIOSH). *Controlling Exposures to Nitrous Oxide During Anesthetic Administration* (NIOSH Alert: 1994 Publication No. 94-100). Available at <http://www.cdc.gov/niosh/docs/94-100/>

Dionne, Raymond A.; Yagiola, John A., et al. Balancing efficacy and safety in the use of oral sedation in dental outpatients. JADA 2006;137(4):502-13. ADA members can access this article online at <http://jada.ada.org/cgi/content/full/137/4/502>



America's leading advocate for oral health

Council on Dental Education and Licensure

This PDF document includes written comments and correspondence received by the Council during March and April 2016 regarding 2015 proposed (but not adopted) revisions to the ADA *Guidelines for the Use of Sedation and General Anesthesia by Dentists* and the *Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students*.

American Association of Oral and Maxillofacial Surgeons (AAOMS)
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Testimony to the Council on Dental Education and Licensure
In Response to Proposed Revisions to the *ADA Guidelines for the Use of Sedation
and General Anesthesia by Dentists*
Presented by Louis K. Rafetto, DMD, President

The American Association of Oral and Maxillofacial Surgeons appreciates the opportunity to provide testimony to the Council on Dental Education and Licensure regarding the Proposed Revisions to the *ADA Guidelines for the Use of Sedation and General Anesthesia by Dentists*.

Dr. Phillip O. Bridenbaugh, recipient of the American Dental Society of Anesthesiology's 2005 Heidbrink Award, advised his audience, "It's all about the patient. Our social, political, and professional energies should be directed toward protecting our rights to give up-to-date safe patient care. We must remember that quality of care requires up-to-date physical resources and the knowledge to give our patients our best. Patient safety is an increasing part of that care."ⁱ

We at the AAOMS believe that the ability to provide dental sedation in an ambulatory or office setting is both a privilege and a profound responsibility. The recent deaths and adverse events resulting from anesthesia-related procedures in the dental office have generated national media attention and shaken the public's confidence in the degree of safety they have come to expect from their dental professional. Moreover, a number of state legislatures and regulatory boards are considering language that could severely limit the way in which dentists provide sedation in the office setting. This unpredictable environment underscores the importance of these guidelines and their possible consequence for patient safety and the future of dental sedation.

The AAOMS would like to address two key areas in the Guidelines:

Section 2. Pre-Operative Preparation, lines 317-319, state that a "focused physical evaluation must be performed as deemed appropriate, including recording the patient's body weight and BMI." The AAOMS strongly endorses this section, and commends the ADA for recognizing that a patient's BMI is essential to calculating and administering the appropriate dosage and level of anesthesia. As stated in the *Journal of Clinical Anesthesia*, "Patients with high BMI have a greater prevalence of comorbid conditions, require alterations in anesthetic and oocyte retrieval management, and more often experience intraoperative and postoperative events."ⁱⁱ

Section 2. Equipment, lines 332-336, calls for the immediate availability of a "positive-pressure oxygen delivery system" when anesthesia is administered during dental procedures. The AAOMS strongly supports *Section 2. Equipment*, and believes the use of capnography in all office-based procedures requiring moderate, deep or general anesthesia aids the provider and offers an important measure of safety for the patient.

The use of such capnography monitoring equipment for office-based anesthesia-related procedures has been shown to provide real benefits for the provider and a safer experience for patients. Capnography, long the standard of care in the hospital OR, has been greatly improved and is quickly becoming an important asset in the ambulatory surgical setting as well.

The American Society of Anesthesiologists, in their *Statement On Granting Privileges For Administration Of Moderate Sedation To Practitioners Who Are Not Anesthesia Professionals*, state that "During

moderate sedation the adequacy of ventilation shall be evaluated by continual observation of qualitative clinical signs and monitoring for the presence of exhaled carbon dioxide unless precluded or invalidated by the nature of the patient, procedure, or equipment.”ⁱⁱⁱ

Following the lead of the American Society of Anesthesiologists (ASA), the American Heart Association and other organizations that develop parameters of care and practice guidelines for their dental and medical surgical specialists, the AAOMS revised its *Parameters of Care* in 2014, to require oral and maxillofacial surgery practices to utilize capnography equipment for all procedures requiring moderate sedation, deep sedation and general anesthesia.^{iv}

Conclusion

Moderate and general sedation in the dental office are becoming widely available for patients who are considering lengthy procedures or who have a high level of anxiety. Its growing acceptance and availability, however, requires that we, as leaders of the profession, assure that those practitioners who administer sedation in their office are:

1. Trained to administer the anesthetic and committed to ongoing continuing education to assure they are aware of the latest equipment, drugs and techniques;
2. Knowledgeable about the importance of the physical evaluation and the relationship between the patients’ health and the type, level and dosage of the anesthetic they receive; and
3. Equipped with the appropriate monitoring and rescue equipment, including a positive-pressure oxygen delivery system, that the assisting staff knows how and when to use.

Providing patients with a safe and effective experience is every dental professional’s primary concern. It is vital that our practice guidelines assist them achieving this objective.

ⁱ Phillip O. Bridenbaugh. Office-Based Anesthesia: Requirements for Patient Safety. *Anesthesia Progress*: Fall 2005, Vol. 52, No. 3, pp. 86-90.

ⁱⁱ EganB et al. Anesthetic impact of body mass index in patients undergoing assisted reproductive technologies. *J Clin Anesth*. 2008 Aug;20(5):356-63. doi: 10.1016/j.jclinane.2008.03.003.

ⁱⁱⁱ Statement on Granting Privileges for Administration of Moderate Sedation to Practitioners Who are Not Anesthesia Professionals, American society of Anesthesiologists, Approved by the ASA House of Delegates on October 25, 2005, and last amended on October 19, 2011.

^{iv} *OMS Parameters of Care: Clinical Practice Guidelines for Oral and Maxillofacial Surgery*; J Oral Maxillofac Surg 70:e1-e11, 2012, Suppl 3

1. American Society of Anesthesiologists, STANDARDS FOR BASIC ANESTHETIC MONITORING, Committee of Origin: Standards and Practice Parameters (Approved by the ASA House of Delegates on October 21, 1986, and last amended on October 20, 2010 with an effective date of July 1, 2011)
2. Practice Guidelines for Sedation and Analgesia by Non-Anesthesiologists. *Anesthesiology* 2002; 96:1004–17
3. Reviews of Educational Material: Capnography, Second Edition. *Anesthesiology* 2012; 116:744 –5
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6. ADSA Pulse: Why Capnography, Summer 2014
7. Farish SE, Garcia PS. Capnography Primer for Oral and Maxillofacial Surgery: Review and Technical Considerations. *Journal of anesthesia & clinical research.* 2013;4(3):295-. doi:10.4172/2155-6148.1000295.
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12. Bennett J, Peterson T. Capnography and Ventilatory Assessment During Ambulatory Dentoalveolar Surgery. *J Oral Maxillofac Surg.* 1997 Sep;55(9):921-5
13. American Association of Oral and Maxillofacial Surgeons Parameters of Care, Anesthesia in Outpatient Facilities, 2012
14. American Association of Oral and Maxillofacial Surgeons Office Anesthesia Evaluation Manual, 2012



April 20, 2016

Council on Dental Education and Licensure
American Dental Association
211 East Chicago Avenue
Chicago, IL 60611

Dear Sirs/Madam:

As a member of the community of interest, the American Dental Society of Anesthesiology (ADSA) appreciates the opportunity to comment at the ADA Members' Hearing on the proposed revisions (Resolution 77H) adopted by the 2015 ADA House of Delegates to the *ADA Guidelines for the Use of Sedation and General Anesthesia by Dentists* and the *ADA Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students*.

1. Elimination of the mandate for monitoring end tidal CO₂ for moderate sedation to allow for the choice of options such as: continuous use of a precordial or pretracheal stethoscope, continuous monitoring of end tidal carbon dioxide, and continual verbal communication with the patient. [Lines 445-448, 472-477, 585-589, and 603-607]

The ADSA supports the position that the dentist must observe clinical signs of ventilation continually and must monitor ventilation via end-tidal CO₂. This should be augmented by auscultation of breath sounds.

2. Reconsideration of the section "Moderate Sedation Course Duration" (hours and content), as proposed by level of sedation, or a possible option of separate course requirements for enteral and parenteral routes of sedation. [Lines 1386-1415 and 1402-1407]

The ADSA believes that moderate sedation is moderate sedation regardless of the route of administration and that the training to manage a patient under that modality must be consistent whether the drug is given orally, rectally, intranasally, intramuscularly, intravenously or by any other route.

The ADA and ASA definition of moderate sedation is a clinical definition. It describes the clinical presentation of the patient. It makes no reference as to how the patient arrived at that state. Any reputable pharmacological textbook will detail the interaction between a drug and a specific receptor in the brain which, depending on the dose and the patient's individual tolerance, will have a particular effect. That particular effect, in this case moderate sedation, is what the dentist is taught to manage through the training course. The management of the patient is the same no matter how the drug gets to the receptor.



In conclusion, the ADSA believes that dentists providing moderate sedation should be trained to the same standard regardless of the route of administration of the sedative agents.

3. Making patient evaluation provisions consistent throughout the document, including but not limited to, rationale and guidelines for the use of Body Mass Index (BMI) and the timing of medical review. [Lines 314-319, 334-336, 403-408, 417-422, 438-440, 530-550, and 575-576]

As the ADSA opined last year, we strongly believe that consistency and clarity help ensure safety. For this reason, we believe the sections discussing patient evaluations for the various levels of sedation and/or anesthesia should read the same for consistency. In addition, we can find no literature supporting a pre-operative evaluation "within the previous 30 days". Our suggestion is to simply require an immediate pre-operative review prior to the administration of sedation and/or anesthesia.

The Body Mass Index (BMI) has become a standard measure of body mass for medicine in general and anesthesiology specifically. Weight alone is insufficient to judge body mass and anesthetic risk. ADSA feels these sections should be rewritten to include Body Mass Index (BMI). An example of such language might be: "A focused physical evaluation must be performed and recorded and must include the patient's Body Mass Index (BMI)."

The ADSA is grateful for the opportunity to comment and recommend possible changes to the ADA's Anesthesia Guidelines documents and would be happy to discuss any questions with the Council at their convenience.

Sincerely,

Kenneth L. Reed, DMD

Kenneth L. Reed, DMD
President, ADSA



Council on Dental Education and Licensure (CDEL)
ADA Members Open Hearing, April 20, 2016

Proposed Revisions to the Guidelines for the Use of Sedation and General Anesthesia by Dentists and Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students.

Linda J. Edgar, DDS, MAGD, MEd

TESTIMONY ON BEHALF OF THE ACADEMY OF GENERAL DENTISTRY (AGD)

April 20, 2016

Thank you for this opportunity to speak to CEDL on the topic of Resolution 77. My name is Dr. Linda Edgar, general dentist, Academy of General Dentistry (AGD) Past President, and ADA Delegate for the past 15 years. In my practice, I have provided oral moderate sedation for 23 years without incident. I was involved in accepted amendments to the 2007 ADA guidelines and I am also a member of the District XI, 8 person (5 state) committee on Resolution 77.

Today, I am speaking on behalf of the AGD to share our concerns regarding two of the three areas identified for comment by CDEL.

First, I will address our comments on the proposed combination of enteral and parenteral moderate sedation training requirements, specifically lines 1386 through 1415, and lines 1402 through 1407.

Second, I will address the addition of the end tidal CO₂ (capnography) requirement, specifically lines 445-448, 472-477, 585-589, and 603-607.

Please note that, on both of these issues, the positions of the AGD are aligned with the testimony of ADA District XI presented by District Chair, Dr. Mark Walker by phone today.

I. Combining Enteral and Parenteral Routes for Training in Moderate Sedation

The proposed combination of oral and IV moderate sedation training requirements is of concern to the AGD for two reasons.

First, it increases didactic hours by 250% and cases by 100% (live cases by 667%) including IV administration, for the practice of oral sedation, without presenting any evidence that the exponential increase in training will correlate to improved safety. It is also likely, in the very rare case that moderate oral sedation goes to deep, that a sublingual injection of reversal agent be done.

An advocate for this change might argue that IV sedation offers the ability to better control titration, reducing the risk of the patient becoming deeply sedated. However, IV administration requires a greater skillset than giving a pill. The 2006 JADA noted a significant decrease in

adverse events from enteral sedation over the last 20 years with the shift away from opioids.¹ The enteral administration of benzodiazepines has shown no evidence of lack of safety.

Second, by allowing for the 20 live cases to be “by any route,” “including intravenous administration,” you could have anywhere from one IV case and 19 enteral cases, to all 20 IV cases. The current training requirement for IV is that all 20 cases must be IV cases. So, this change inadvertently reduces the IV practitioner’s live-patient training requirement by as much as 95% (from 20 cases down to 1 case).

Just as there was no evidence presented to correlate the exponential increase in training for oral sedation with increased safety, there has been no evidence presented to justify up to a 95% decrease in live IV patient training for practitioners of IV sedation.

Finally, in that Supplemental Report, CDEL also noted that a reason for the proposed change is that the Course Objective and Course Content sections already included IV for all routes of moderate sedation. Course Objective 5 on line 1339 of Appendix 1, and Course Content 15 on line 1379 of Appendix 1, include IV. The fix for this is easy; add “for moderate parenteral sedation courses” after each of these items.

Conclusions:

IV administration and oral administration are far too distinct to combine simply for the sake of having a singular set of moderate sedation training requirements. We recommend staying with the current guideline recommendations of 24 hours for oral and 60 hours for IV. We would hate to see fewer patients receive dental care because fewer dentists chose to get trained in oral sedation since over 50% of the population is very fearful and is being helped.

II. End-tidal CO2 Mandate for Moderate Sedation (except when “precluded or invalidated by the nature of the patient, procedure or equipment”)

The science has shown that capnography may work well in complex airway systems, but it may create false-positives in an open airway system.

In January 2015, ADSA told CDEL unequivocally that visual changes in an end tidal CO2 waveform (or capnograph) might escape detection in the absence of an individual dedicated to continuously observing the monitors. ADSA informed CDEL that a precordial or pre-tracheal stethoscope is an acceptable option for moderate sedation and that it may be more practical.²

Studies have found that capnographs produce inaccurate data in an open airway system where the atmospheric air dilutes the expired CO2, or when the patient is a mouth-breather.³ A 2010 study also found that measurement of oxygen saturation with a pulse oximeter detects respiratory events in adults quicker than a capnography.⁴

After looking at the make-up of the anesthesia committee it appeared that no members were general practicing dentists that do moderate oral sedation. Neither ASA nor AAOMS are societies dedicated exclusively to *dental* pain and anxiety management. It is also important to note that the American Heart Association (AHA), which preceded ASA and AAOMS in requiring capnography, only required a capnograph in complex airway systems, during

placement of an endotracheal tube and to improve CPR quality; these are not applicable to an open airway system in moderate sedation in dentistry.⁵

The current science and practice indicate that, in an open airway system for dental moderate sedation, relying upon a capnograph could be an inaccurate proposition, and that pulse oximeters and precordial or pretracheal stethoscopes are often better solutions.

Accordingly, the AGD supports the *choice of options* such as: continuous use of a precordial or pretracheal stethoscope, continuous monitoring of end tidal carbon dioxide, and continual verbal communication with the patient.

Thank you again for this opportunity to provide testimony and for all your hard work on these guidelines.

Sources:

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ADA Members Hearing Sedation and Anesthesia Guidelines Resolution 77H-2015

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¹ No conflicts of interest, the opinions expressed do not represent ECU or any professional organization

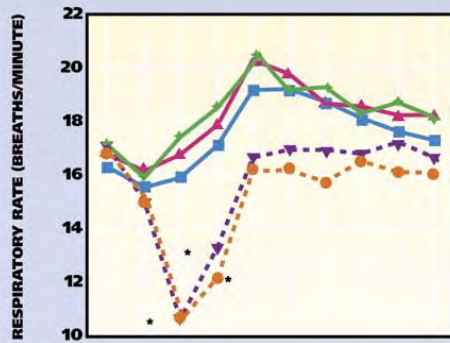
Lines 445-448, '...end tidal CO₂ must be monitored...'

Lines 472-476: '...the dentist must monitor ventilation and/or breathing by monitoring end tidal CO₂...'

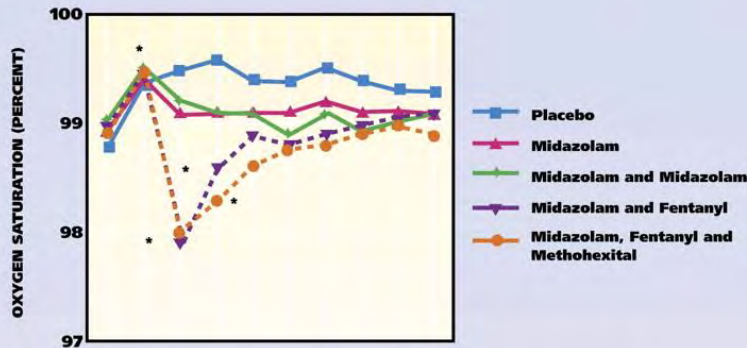
Respiratory depression causes most serious M&M

- **Opioids** produce dose-related decrease in respiration at therapeutic doses
- **General anesthetics** produce respiratory depression at therapeutic doses
- **Local anesthetics** produce respiratory depression at very high doses
- **Additive respiratory depression** can occur when combinations of drugs are given at individual maximal doses
- **Loss of consciousness** may result in airway obstruction
- **Benzodiazepines do not produce respiratory depression at therapeutic doses when administered as the sole anxiolytic drug**

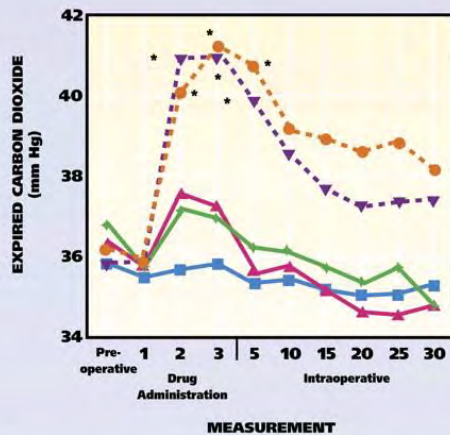
Respiration Rate



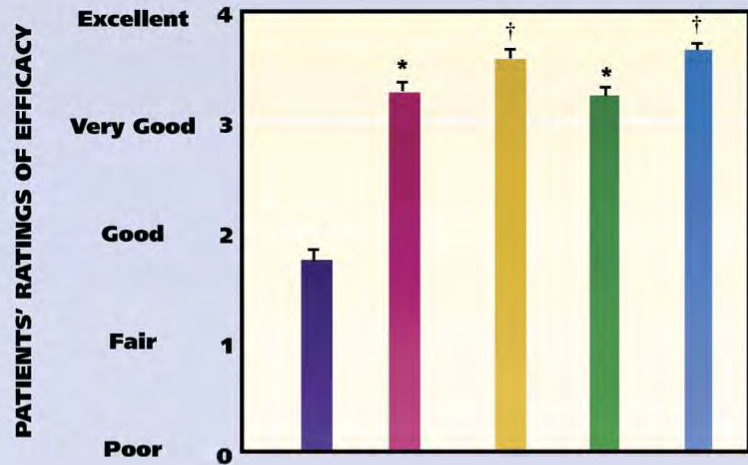
Oxygen Saturation



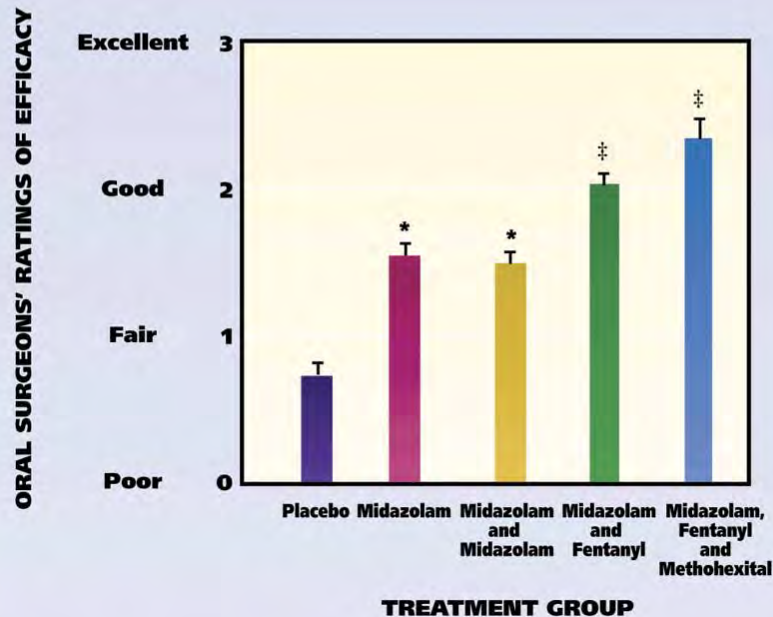
Expired Carbon Dioxide



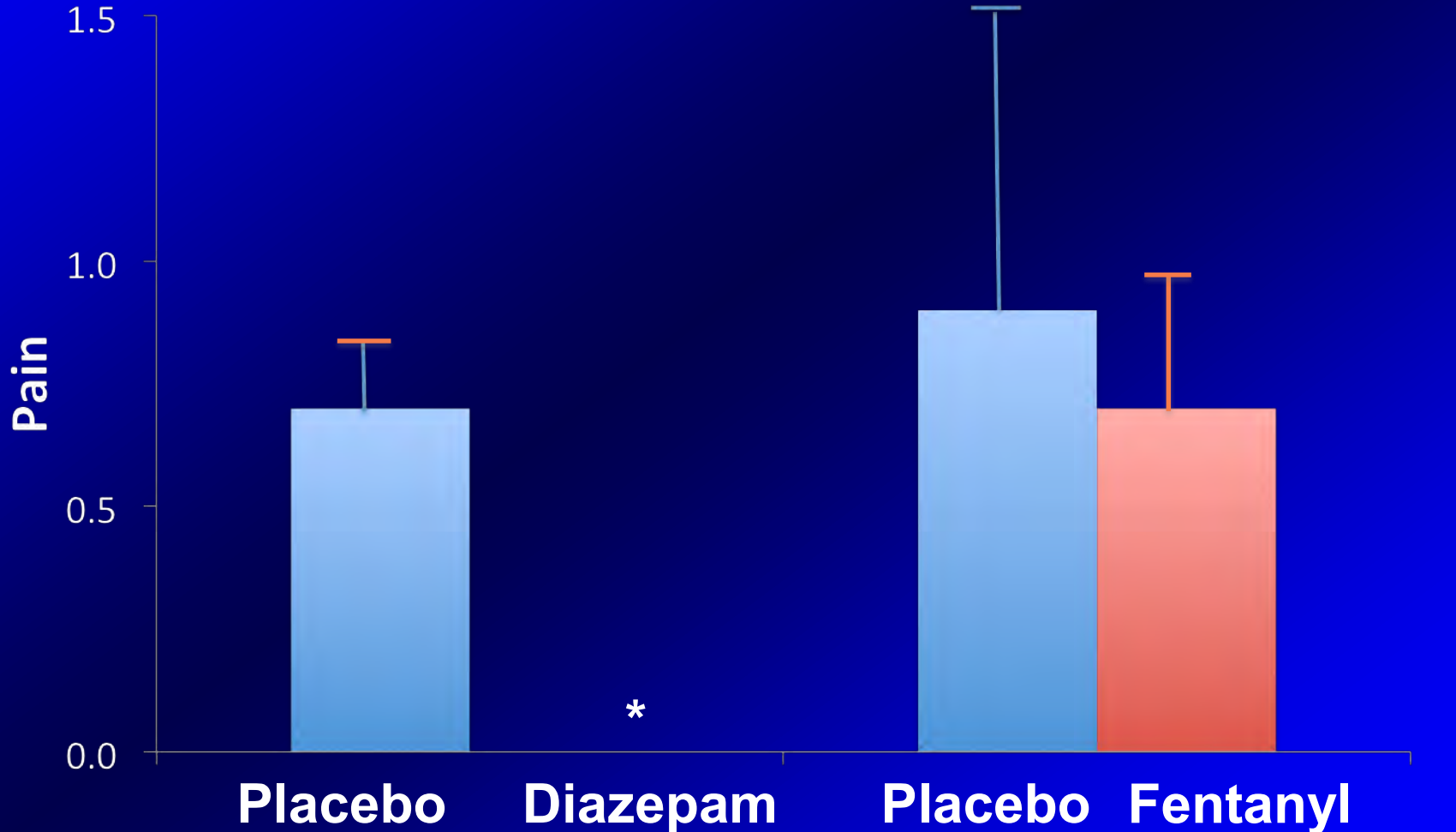
Patients' Evaluation of Efficacy



Surgeons' Evaluation of Efficacy



Benzodiazepine but not an opioid decreases self-reported pain during oral surgery using LA

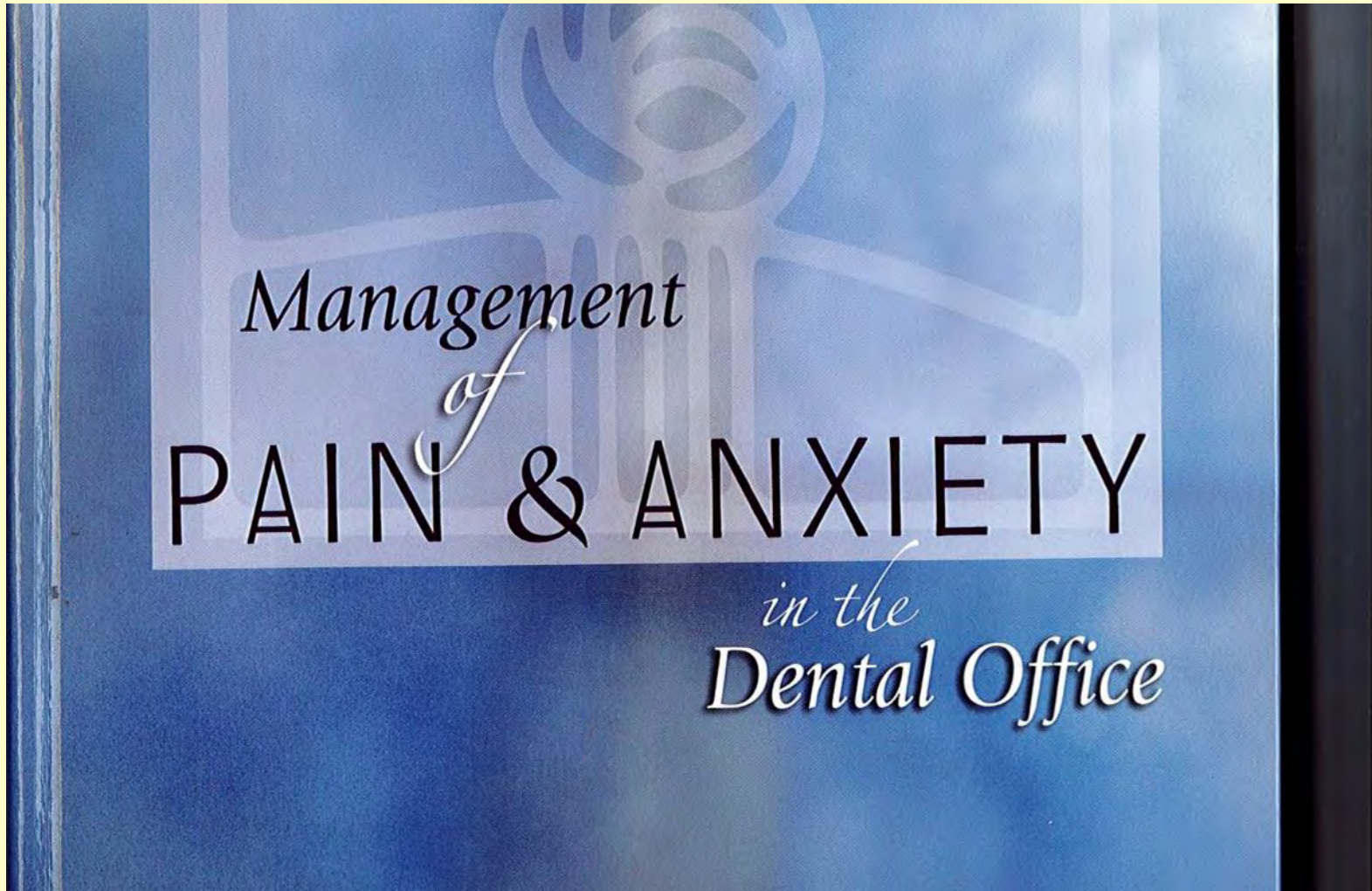


Dionne RA, J Dent Res 1984

Evidence – Based Implications

- Benzodiazepines not likely to cause respiratory depression
- Respiration rate and O₂ saturation are sensitive to changes in ventilation
- Monitoring expired CO₂ should be reserved for drugs that predictably cause respiratory depression
- Adjunctive administration of opioids does not reduce pain if patient has been adequately anesthetized
- Differentiating monitoring requirements between **anxiolytic** drugs that do **not** produce respiratory depression and **sedative** drugs that **depress** respiration without anxiolytic benefit **encourages safety**

Line 1402, Moderate Sedation course: ‘...60 hours of didactic instruction plus...’



**One page = 3 minutes. 400 pages in book, 60 hours = reading this book 3X
Medical pharmacology course ~ 120 hours
EMT training (NC) ~ 200 hours**

Line 1404: ‘...including intravenous administration...’

IV	60
Oral	37
Rectal	9
Nasal	4
IM	31
Inhalation	13

Cote et. Pediatrics 105:805-814, 2000

***Parenteral routes of administration most likely to result
In serious morbidity and mortality – why encourage its use?***

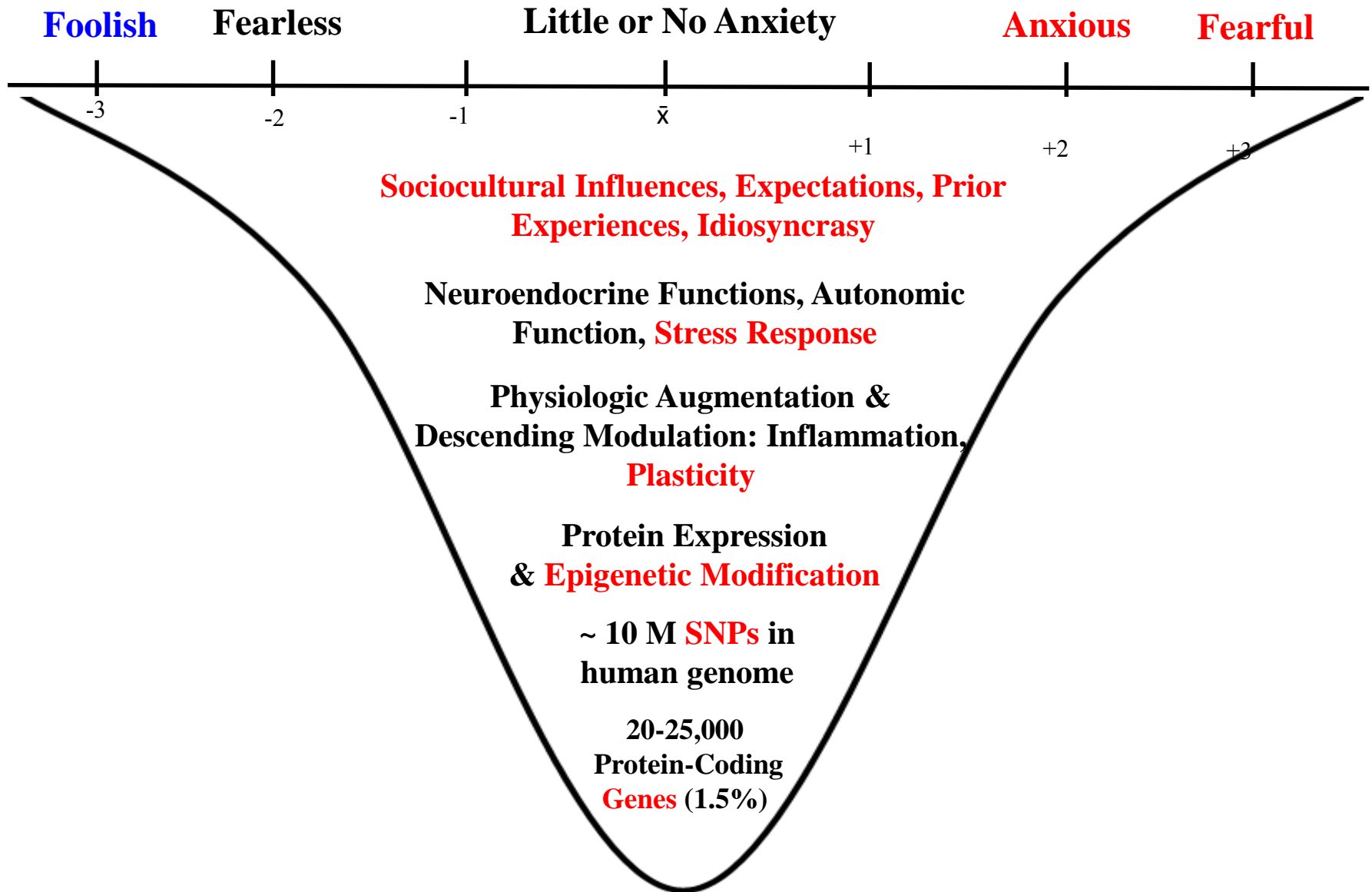
Why is Sedation Needed?

Prevalence of Dental Fear and Anxiety in Population

- Well documented by 19 studies
- Common to all cultures
- ***Originates in childhood***
- Persists throughout life
- Leads to ***avoidance of dental care***
- Has remained stable over the **past 50 years**

Haas D, Workshop on Enteral Sedation in Dentistry
In Dionne et al, JADA 137:502 - 513, 2006

Basis for Wide Variation in Patient Presentation



Recommendations for Revising Res. 77H-2015

- Anxiety level **varies widely** across patients
- General dentists and most specialists can **safely** and **effectively** treat anxious patients with an **enteral administration of a benzodiazepine**
- Should **increase access to care** for anxious and fearful patients by improving sedation training and safety based on scientific evidence:
 - End-tidal CO₂ not needed for benzodiazepine sedation
 - Proposed N of didactic hours is excessive
 - Encourage enteral sedation training and clinical use without requiring IV access for continuing education courses

Good afternoon,

Thank you for this opportunity to speak to the Council on Dental Education and Licensure on the topic of resolution 77. I am Dr. Mark Walker; Chair of an 8-member task force organized by Dr. Laura Williams and composed of representatives from each of the 5 states in District XI. I want to address our concerns about the proposed changes to the anesthesiology education guidelines

In particular there are two areas of great concern that our district would like to address.

The first is with regard to increasing the education requirement to 60 hours and eliminating the distinction between enteral and parenteral training thus creating one moderate sedation permit category. For patient safety, we must recognize the distinction between enteral and parental routes of administration, as we currently have with the existing ADA Guidelines.

It is essential to understand that the different route of the administration of a sedative agent is important. The educational guidelines for training should recognize these differences and that the guidelines are commensurate with the level of training indicated for that specific route of administration.

Looking at current state dental practice acts, only eleven states have an educational requirement that does not differentiate between routes of administration of a sedative agent. On the other hand, thirty-nine states recognize the inherent differences that the route of administration, enteral v. parental, make and thus mandate separate training and permit process commensurate and applicable to that route of administration. Of these thirty-nine states that recognize the differences between enteral and parenteral routes of administration, only seven states require the increased educational hours (60 hours) for both modes as proposed by resolution 77.ⁱ There is little if any data published to suggest that states requiring 60 hours training for enteral sedation results in a lower mortality rate than those requiring 24 hours as current ADA guidelines recommend.

In fact according to Raymond Dionne et al, in a 2006 JADA article titled, ***"Balancing efficacy and safety in the use of oral sedation in dental patients"*** their study of dentists trained under the 24 hours guidelines reported that in a 12 month period, and I quote, "A total of 613 dentists administering incremental triazolam reported 85 adverse reactions in 28,881 cases (0.3% incidence). None of the instances resulted in the need for hospitalization, and the administering dentists managed all of the instances in the dental office."ⁱⁱ End quote.

An orally administered drug is exposed to metabolic clearance mechanisms in the intestine and liver before it gets into the circulatory system. By comparison, an intravenously administered drug is deposited directly into the circulatory system. Factors such as gastric emptying, GI absorption, GI inactivation, first-pass hepatic metabolism and variability in patient response associated with using fixed doses raises patient safety concerns that can only be addressed by having training specific to the route of administration. The argument that "sedation is sedation" simply doesn't hold true.

As stated in the aforementioned JADA study, "The oral route is inherently the safest route for drug administration."ⁱⁱⁱ

Stanley Malamed, in his book, ***“Sedation- A Guide to Patient Management”***, states “Drug-related side effects are less likely to develop following enteral drug administration (i.e., oral, rectal) than they are following parenteral drug administration. In addition, adverse reactions developing following oral administration are often much less intense than noted following parenteral administration of the same drug”.^{iv}

Increasing the educational requirement for enteral sedation would add additional time and expense to our members without sufficient evidence that this would increase patient safety and may adversely impact access to care.

Our second concern is in regards to the use capnography for moderate sedation.

In the proposed new guidelines it states that there should be an end tidal CO₂ (capnography) requirement except when “precluded or invalidated by the nature of the patient, procedure or equipment.”

We are opposed to the addition of this requirement for the following reasons:

The current guidelines fail to explain more fully the statement, “except when precluded or invalidated by the nature of the procedure or equipment.” Failure to provide clear direction for this topic leads to inconsistent interpretations by state boards as to what constitutes appropriate justification for use of capnography.

In a report to The Royal College of Physicians and Surgeons of Edinburgh and Glasgow entitled;

“Standards for Conscious Sedation in the Provision of Dental Care Report of the Intercollegiate Advisory Committee for Sedation in Dentistry” states;

“Sampled exhaled gas or transcutaneous capnography may be appropriate for some ‘at risk’ ASA grade III/IV dental patients, particularly those receiving supplemental oxygen, during sedation”, and it goes on to state, “until results of dentistry-specific research are available, its routine use for ASA grade I and II dental patients lacks high level scientific validation and cannot be recommended.”^v

Another study done in Canada in 2010 entitled ***“A comparative evaluation of capnography versus pulse oximetry during procedural sedation and analgesia on room air”*** by Sivilotti et al, concluded that *“During PSA in adults breathing room air desaturation detectable by pulse oximetry usually occurs before overt changes in capnography are identified. Moreover, substantial variation among and within participants in the end-tidal carbon dioxide values at baseline hampers the identification of clinically important changes in capnography.”*^{vi}

District XI, the ADA, and its member dentists pride themselves on using accurate data to determine what guidelines are best for their patients’ safety. The general lack of research regarding patient safety in a dental setting in regards to monitoring of end tidal CO₂ during moderate sedation makes it difficult to suggest this added requirement of the use of capnography is needed. We do feel that the use of capnography in general anesthesia and deep sedation cases is important. We do recommend that the use of a precordial

stethoscope as well as monitoring equipment that records blood pressure, oxygen saturation and heart rate be used during moderate sedation.

In addition it is our conclusion that there is no evidence to support increasing the continuing education hours to 60 hours for the eternal route of administration of sedative agents. We recommend that the CE hours required stay at the current 24.

The members of District XI respectfully point to the fact that the majority of the Anesthesia Committee practice deep sedation techniques in a closed system and their guideline recommendations are drawn from that perspective. The open system that occurs during a moderate sedation gives rise to the aforementioned variables that do not occur during deep sedation.

ⁱ ADA District XI workgroup own research, April, 2016

ⁱⁱ Raymond A. Dionne, DDS, PhD; John A. Yagiela, DDS, PhD; Charles J. Cote, MD; Mark Donaldson, PharmD; Michael Edwards, DMD; David J. Greenblatt, MD; Daniel Hass, DDS, PhD; Shobha Malviya MD; Peter Milgrom, DDS; Paul A. Moore, DMD, PhD, MPH; Guy Shampaine, DDS; Michael Silverman, DMD; Roger L. Williams, MD; Stephen Wilson, DMD, MA, PhD. Balancing efficacy and safety in the use of oral sedation in dental outpatients. JADA 2006;137:502-513

ⁱⁱⁱ Ibid

^{iv} Stanley F. Malamed, DDS, *Sedation: A Guide to Patient Management*, 5th Edition (St. Louis, Mosby Elsevier, 2010)

^v The Dental Faculties of the Royal Colleges of Surgeons and Royal College of Anaesthetists, *Standards for Conscious Sedation in Provision of Dental Care; Report of the Intercollegiate Advisory Committee for Sedation in Dentistry*, 2015; (p.28)

^{vi} Marco L.A. Sivilotti, MD, MSc; David W. Messenger, MD; Janet van Vlymen, MD; Paul E. Dungey, MD; Heather E. Murray, MD, MSc. A comparative evaluation of capnometry versus pulse oximetry during procedural sedation and analgesia on room air. Canadian Journal of Emergency Medicine. 2010;12(5):397-404



IDAHO STATE DENTAL ASSOCIATION

To: Council on Dental Education and Licensure (CDEL)
From: the Idaho State Board of Dentistry (IBOD) and the Idaho State Dental Association (ISDA)
Re: ADA Resolution 77, Sedation Guidelines

Dear Council Members,

Both the Idaho State Board of Dentistry and the Idaho State Dental Association have significant concerns over the proposed changes to sedation guidelines that CDEL is considering. We consider safeguarding our patients and improving the oral health of all Idahoans as the top imperatives for our organizations and we embrace actions that have a meaningful impact on these goals. In Idaho we believe that Resolution 77 as presented at the ADA 2015 House of Delegates, rather than having a meaningful impact is actually a step backwards.

Resolution 77, by eliminating the separate permit process commensurate with the low risks of enteral sedation, will deter dentists from seeking sedation permits, and likely will result in dentists failing to obtain appropriate education, patient monitoring equipment, and emergency medical training. Since Idaho recognized enteral sedation as distinct from parenteral sedation, seventy-six Idaho dentists have obtained permits (received training, patient monitors, emergency training, and passed office sedation evaluations). During this time, the number of patients suffering adverse effects due to enteral sedation has remained at zero. Clearly, this is an indication that current guidelines adequately protect patient safety when proper procedures are followed.

The current guidelines, while not only maintaining patient safety, have increased the access to care for countless Idahoans. We know that many patients cannot or will not take advantage of dental care without the aid of enteral sedation. Increasing the demands on training for enteral sedation will drastically increase the cost of obtaining a permit, and will therefore reduce the number of dentists with permits. This will in turn decrease the access to care for those who need it, which goes directly against one of the key callings of the dental profession.

It is our understanding that there are 39 states whose dental practice acts regarding sedation are not in compliance with the guidelines as proposed by Resolution 77. If CDEL and the ADA House of Delegates were to adopt Resolution 77, it is likely that a plaintiff's attorney in a malpractice litigation would raise the question of compliance, even if a dentist is in compliance with their state dental practice act. In short, adopting Resolution 77 would likely put the dentists in these 39 states at a medical-legal risk.

We have not found evidence that suggests adverse effects of sedation are a result of inadequate guidelines and training. In fact, the evidence indicates that adverse effects are the result of a select few not following the existing guidelines. This would indicate the issue is one of compliance, not of education. Increasing educational requirements will not increase compliance, and in fact will likely result in a decrease. When we consider the overwhelming success and increased care provided under the current guidelines, we have to ask why the change is being considered. Unfortunately, our conclusion is that this is the result of a desire to create competitive barriers by a select few in the profession. This action does not benefit the ADA, its members, or the patients of the communities we serve.

On behalf of both the ISDA and the IBOD we ask that you carefully reconsider the impact of adopting Resolution 77, and together we recommend rejecting this resolution.

Respectfully,

Susan Miller
Executive Director
Idaho State Board of Dentistry

John E. Hisel Jr., DDS
President
Idaho State Dental Association

Board Members

John Hisel Jr., DDS
Boise
President

Brian Crawford, DDS
Pocatello
President Elect

Jim Miller, DDS
Coeur d'Alene
Vice President

John Staley, DDS
Boise
Secretary/Treasurer

John Blaisdell, DDS
Caldwell
Immediate Past President

Kory Wilson, DDS
Hayden
Trustee, Idaho Panhandle

Mark Sheppard, DDS
Lewiston
Trustee, Lewis-Clark

Lynn Gurney, DDS, MS
Boise
Trustee, Southwest

Scott Alexander, DMD
Boise
Trustee, Southwest

Steve Garn, DDS
Burley
Trustee, South Central

Kim Smith, DDS
Pocatello
Trustee, Southeast

Michael Elison, DMD
Idaho Falls
Trustee, Upper Snake River

Kim Keller, DDS
Nampa
Trustee, Western Treasure Valley

ADA Delegates

Gregory Bengtson, DDS
Lewiston

Joel Newton, DDS
Twin Falls

Scott Kido, DMD
Nampa

Executive Director
Linda Swanstrom

ISDA Vision Statement:

To be the oral health authority committed to the profession and the public through education, advocacy, and the application of science and ethics.

ISDA Mission Statement:

Improving and protecting the profession of dentistry.

4/20/2016

Revised 6/7/2016 - Due to the fact that one dentist was initially reported as a general dentist, but was actually a pediatric dentist. Revisions are in red.

Dr. Daniel Gesek, Chair, Council on Dental Education and Licensure
American Dental Association
211 East Chicago Ave
Chicago, IL 60611

Submitted via email to:

Jasekj@ada.org

RE: Comments on the ADA's 2015 Proposed Anesthesia Guidelines

Dear Dr. Gesek and Committee Members,

Thank you for the opportunity to testify. My comments will be emailed to you today, including my media references.

I am a general dentist that has been in practice for 17 years. My philosophy of dentistry allows me to take time with my patients, getting to know them and striving to meet their individual needs as we work together to improve their oral health. Because of my patient centered approach, I have had many patients with high anxiety come to see me for treatment. For years, I treated them when they would come to see me, but often that was after they had put off their treatment until there was a dental emergency. I would treat them very gently, sometimes using anxiolytic agents such as diazepam or nitrous oxide, both of which had less than satisfactory results in controlling the anxiety of these high fear patients. In 2010, I decided to receive training in moderate enteral sedation. I received education, bought the equipment necessary to safely administer moderate sedation and to treat medical emergencies should they arise, and have been treating patients with high fear with moderate enteral sedation since that time. I am very careful to follow protocols to prevent oversedation and to avoid medical emergencies. I have treated over 50 patients with moderate enteral sedation in that time, with more scheduled this year. I have NEVER once had a medical emergency while administering moderate enteral sedation because I have followed the protocols of careful patient selection and careful sedation administration. Because I have been able to offer this to my patients, I have been able to change the lives of patients who have now been able to receive general dental procedures that they otherwise would not have received. I have been able to prevent financially and emotionally costly dental emergencies by treating dental problems in high fear patients before they have symptoms.

The changes to the educational recommendations that you propose in Resolution 77H-2015 [Lines 1386-1415 and 1402-1407] (i.e. requiring ALL practitioners of moderate sedation, enteral or parenteral, to take a courses involving IV sedation) will result in most practitioners discontinuing the practice of moderate sedation because of cost. The courses for IV sedation are highly expensive and require a large amount of time away from the office. It would require a dramatic increase in cost to the patients in order to cover the increased cost that the practitioner would incur through having to take these courses. Many of my high fear patients already have a difficult time with the small fee that I charge to administer enteral sedation because their insurance doesn't cover that cost. Therefore these new requirements would leave them with no option for general dentistry other than going to a hospital setting to receive their needed fillings, crowns, root canals, etc.... routine general dental care.

I believe that the motivations for changing the educational requirements are because of concerns over patient safety, and I agree that patient safety is of the utmost importance. In fact, I am concerned enough about it that I served the Idaho State Board of Dentistry as an In-Office Evaluator for Oral Sedation, until this year when I was appointed as a member of the Board. In my duties as an evaluator, I performed reviews of the offices and dentists in Idaho that carry Moderate –Enteral Sedation Permits. I reviewed equipment, records, training of dentist and staff, and observed a live sedation case in each office visit. The reviews that I participated in have shown me that oral sedation is largely practiced in a safe and effective manner. Any loss of life or injury to patients is a gravely serious matter, and a tragedy. The committee asked for scientific reference to any comments. However, there are no studies indicating the need for a change in the educational requirements proposed. We are therefore left to observe the cases that have been reported in the media and review what the outcomes of those cases are. My own personal review of the cases making the news shows that most of these cases have been pediatric deaths, although adult deaths have certainly occurred. These deaths have occurred at the hands of general dentists, pediatric dentists, and oral surgeons. I found 29 reported deaths in recent news. Of those deaths, the outstanding majority occurred with IV sedation or general anesthesia. Of the practitioners involved 3 were general dentists, 4 were general dentists operating with an anesthesiologist present, 21 were specialists (oral surgeons, pediatric dentists, endodontists, anesthesiologists, with 1 practitioner whose specialty I could not find listed. These specialists would have received training in IV parenteral sedation. In ALL of the cases that I read, the deaths did not occur because of the sedation protocol. They occurred because the practitioners were **NOT** following protocol. **Changing educational requirements which already teach a safe and effective protocol will NOT change the fact that some practitioners will not follow those safe protocols. It will only make it harder for those who do follow the protocols to practice safe and effective dentistry for their anxious patients.**

In summary,

I do not agree with or support the proposed change in educational requirements because they do not address patient safety, but instead create more barriers to practitioners practicing already safe protocols. This in turn will create more barriers to high fear patients receiving the care that they need, and will induce practitioners to avoid getting the training that they need due to cost. This will make the safe treatment of patients seeking sedation less available.

Respectfully submitted,

Spencer J. Lloyd DMD, MAGD, FICOI

Pearl Dentistry

4012 Brian Ave.

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yodadmd@gmail.com

<http://www.rdhmag.com/articles/print/volume-29/issue-2/feature/child-deaths-from-anesthesia.html>

<http://interactives.dallasnews.com/2015/deadly-dentistry/part1.html>

<http://abcnews.go.com/Blotter/death-greed-dentist-american-children-risk/story?id=16763109>

<http://www.click2houston.com/news/investigates/deaths-related-to-dental-procedures-not-tracked-in-texas>

<http://www.drbcuspids.com/index.aspx?sec=ser&sub=def&pag=dis&ItemID=304905>

Salomon Barahona Junior – Pediatric Dentist – oral sedation

Raven Maria Blanco – Pediatric Dentist – oral sedation

4 developmental disabled deaths in 2005 – oral surgeons (deaths at home after likely IV sedation)

2 deaths – developmental disabled 2013 – oral surgeons (deaths at home after likely IV sedation)

Rose Tecumseh – pediatric dentist w/ anesthetist – oral sedation

Rena Suba – Oral Surgeon – IV sedation

Kimberly Ortiz – Oral Surgeon – IV sedation

Billy Lee Hatcher – Oral Surgeon – IV sedation

Patrick Clare – General Dentist – oral sedation

Three Deaths - Oral surgeon – Protopappas – sedation type unknown – likely IV

One death in Connecticut – General Dentist – Rashmi Patel – sedation type unknown – likely oral

One death in Texas – Oral Surgeon/Periodontist – James Michael Davis – sedation type unknown – likely IV

Girl Death in Los Angeles – Tae Joo Lee – Specialty unknown? – sedation type unknown?

Marcus Gressett – Endodontist w/ Anesthesiologist present – IV sedation

Diamond Brownridge – **Pediatric Dentist** - IV sedation

Darren Denholm – General Dentist w/ Anesthetist - General Anesthesia

Karla Selley – General Dentist w/ Anesthetist - General Anesthesia

Katie Dougal – General Dentist w/ Anesthetist - General Anesthesia

Bradley Legge – General Dentist w/ Anesthetist – General Anesthesia

Suzanne Johnson – Hospital Dentist – General Anesthesia

Yair Lupolianski – Pediatric Dentist – oral sedation

Dasia Washington – General Dentist – nitrous oxide

AZ death – Dr. Glen Doyon – Endodontist - IV sedation

29 deaths – **3** General Dentists – 4 General Dentists w/ anesthetist – **5** pediatric dentists – 13 oral surgeons – 1 Endodontist – 1 Endodontist w/ Anesthesiologist – 1 Hospital Dentist General Anesthesia - 1 unknown dentist

29 deaths – 1 nitrous oxide, 5 oral sedation, 1 “likely” oral sedation, 6 IV sedation, 10 “likely” IV sedation, 5 General Anesthesia, 1 sedation type unknown

- “likely” – inferred by type of dentist performing the procedure. Oral surgeons are most likely to use IV sedation. General dentists are most likely to use oral sedation.

Jasek, Jane F.

From: DrRocky@aol.com
Sent: Tuesday, April 19, 2016 10:59 PM
To: Jasek, Jane F.
Subject: Sedation and Anesthesia Guidelines Under Review

04/19/2016

To: Dr. Daniel Gesek, CDEL Chair
Dr. David Sarrett, CDEL Anesthesiology Committee Chair

Via: Jasekj@ada.org

Re: Resolution 77H-2015 and the following:
ADA Policy Statement: The Use of Sedation and General Anesthesia by Dentists (2007)
Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students (2012)
Guidelines for the Use of Sedation and General Anesthesia by Dentists(2012)
ADA Sample (Filled-in) Sedation - Anesthesia Record (PDF)

To Whom It May Concern:

I am writing you to express my individual sincere concerns in how this debate over sedation has somehow lost its way over time in a very disconcerting way.

The ADA Clinical Practice Guidelines Handbook - 2013, page 5, Section 1.1 clearly states:

“1.1 Purpose of ADA Clinical Practice Guidelines (page 5)

The ADA Clinical Practice Guidelines provide clinicians with tools to help them implement evidence-based interventions. The American Dental Association defines Evidence-Based Dentistry as “an approach to oral health care that requires the judicious integration of systematic assessments of clinically relevant scientific evidence, relating to the patient's oral and medical condition and history, with the dentist's clinical judgment and the patient's treatment needs and preferences.” This definition acknowledges that treatment recommendations should be individualized for each patient by his or her dentist, and that the clinician's judgment and patient preferences should be considered while planning treatment. Evidence-based clinical practice guidelines are intended to provide guidance and should be integrated with a practitioner's professional judgment and a patient's needs and preferences. They are not standards of care, requirements, or regulations. They represent the best judgment of a team of experienced clinicians, researchers and methodologists interpreting the scientific evidence on a particular topic.”

As you can see from the above, key words and terms are noted such as tools, help, evidence-based, judicious integration, the patient's oral and medical condition and history, dentist clinical judgement, patient's treatment needs and preferences, individualized, clinician's judgement, patient preferences, and practitioner's professional judgement. These thoughts are then further emphasized in the end with the phrases like “**not standards of care, requirements, or regulations** **best judgement of a team of experienced clinicians**, researchers, and methodologists interpreting the scientific evidence on a particular topic.”

As I review the 2007 and the 2012 documents noted above, every single thing the ADA states that it stands for in its EBD Clinical Practice Guidelines and recommendations is overridden or completely ignored with numerous elementary and arbitrary statements.

Evidence based tools and help are now arbitrary statements and subsequent mandates that totally ignore the patient's individualized oral and medical conditions and history, the clinician's professional judgement, and the preferences of the patient.

Without ever seeing the patient, while classifying any and all sedative medications as having the same level of sedative effect on a patient, the guidelines state you are intending to do a level of sedation you are not and classifying a patient to be in a given sedative state, without consideration of the real-time physiologic monitoring of the patient by a trained professional. For example, classifying nitrous plus any one oral drug as minimal sedation, and while classifying nitrous plus any two or more drugs as moderate sedation, without any consideration for the specific drug, dosage level, or projected response of the patient based on their tolerance levels, anxiety levels, and/or extent of treatment is very elementary and arbitrary at best.

Likewise, the misuse of the terms like MRD dosage levels and applying them to a professional monitored clinical setting is elementary and arbitrary at best. What physicians call unmonitored at-home in the living room pain control, we are now calling moderate sedation, even without the application of nitrous, if it occurs in a dental office. Nothing could be further from the truth and further shows the world our apparent complete lack of understanding of the subject matter at hand.

MRD levels of a certain drug carry a very wide margin of safety, are set for unmonitored at-home use, and have been misused and misrepresented in the ADA documents. Everyone knows that low dosages of multiple drugs can most times be more predictable, more likely to reach an intended level of sedation, less likely to have an adverse effect on the patient, and/or more easily reversible than high doses of a single medication, especially when these medications are administered at mere fractions of MRD recommendations. Yet, our teaching and clinical guidelines are written to the contrary.

Sedation levels are determined by patient response as monitored by a professional, a doctor, a clinician, not arbitrary caveats as stated in the ADA guidelines. In our guidelines the ADA has historically tried to assign level of sedation by route of administration. Today, the ADA is using arbitrary statements about MRD levels and the number of drugs administered. Again, these are arbitrary and elementary statements at best.

More pertinent to the current considerations at hand, I find it interesting that the clinical use of sealants topical fluorides by dentists, two of the most innocuous procedures ever known in the 9000 plus year history of dentistry have undergone more evidence based scrutiny than the teaching and clinical use of sedation and anesthesia in dentistry has to date, which happens to be the most dangerous, life-threatening procedure of physicians and dentists alike. Why would the ADA ever give more systemic analysis to the evidence for sealants and topical fluoride than it has for sedation and anesthesia? Why would it not give preference to professional judgement and individual patient needs?

I say this because it doesn't matter how voluminous you make the guidelines, those practitioners who aren't reading them now, will still not be reading them then. Furthermore, those practitioners who do follow the current guidelines, whether ADA or AAPD, they have not had a problem of any significance with sedation. My main concern here is the demonization of minimal sedation, arbitrarily calling it moderate sedation when it is not, and creating a world where one of the most needed procedures in dentistry is no longer available to the public due to over-reaching and arbitrary regulation. Please note the reports below.

Evidence-based clinical recommendations for the use of pit-and-fissure sealants

A report of the American Dental Association Council on Scientific Affairs - March, 2008

Jean Beauchamp, DDS; Page W. Caufield, DDS, PhD; James J. Crall, DDS, ScD; Kevin Donly, DDS, MS; Robert Feigal, DDS, PhD; Barbara Gooch, DMD, MPH; Amid Ismail, BDS, MPH, MBA, DrPH; William Kohn, DDS; Mark Siegal, DDS, MPH; Richard Simonsen, DDS, MS

Topical fluoride for caries prevention

Executive summary of the updated clinical recommendations and supporting systematic review - November, 2013

Robert J. Weyant, DMD, DrPH; Sharon L. Tracy, PhD; Theresa (Tracy) Anselmo, MPH, BSDH, RDH; Eugenio D. Beltrán-Aguilar, DMD, MPH, MS, DrPH; Kevin J. Donly, DDS, MS; William A. Frese, MD; Philippe P. Hujoel, MSD, PhD; Timothy Iafolla, DMD, MPH; William Kohn, DDS; Jayanth Kumar, DDS, MPH; Steven M. Levy, DDS, MPH; Norman Tinanoff, DDS, MS; J. Timothy Wright, DDS, MS; Domenick Zero, DDS, MS; Krishna Aravamudhan, BDS, MS; Julie Frantsve-Hawley RDH, PhD; Daniel M. Meyer, DDS; for the American Dental Association Council on Scientific Affairs Expert Panel on Topical Fluoride Caries Preventive Agents

With specific comment to capnography, we all know that in open-airway anesthetic systems this monitor can be highly unreliable giving practitioner's a false sense of security or via repeatedly unnecessarily interrupting a procedure with false alarms that may have a limited time window for successful completion.

With respect to excessive requirements for patient evaluations in patients undergoing minimal and moderate sedation, they should be eliminated. Likewise, timing of medical history and the use of BMI needs to be given more discretion.

With respect to educational requirements, the 2015 proposal was excessive, yet the language in the document reduced the requirement for conducting IV moderate sedations from several to a minimum of one. More reasonable consideration needs to be given to that language, including a return to the previous IV moderate sedation requirements.

Having sat as a liaison on the topical fluoride panel a few years back, I do not envy the task you have at hand. However, I think it is important to remember what you do here should not have an adverse impact on the availability of minimal sedation to the public in any way. Millions of patients avoid dental care annually due to their perceived fear of pain. Minimal sedation should not be demonized or over-regulated in any way. Rather, its availability to the public, especially children, should be noted as one of the greatest advances in the delivery of dentistry to the public achieved in the 21st century.

I sincerely appreciate all you do and the time you donate to our profession.

And, thanks again from

*Where it's an access day every day we're open!
More than \$644,617 of free and uncompensated care in 2015 alone!!*

Talk with you later,

Until then.....

DOCERE ! - DOCTOR !! - TEACH !!!

Rocky

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Jasek, Jane F.

From: Fred Quarnstrom <fredq@comcast.net>
Sent: Monday, February 29, 2016 12:53 AM
To: Jasek, Jane F.
Subject: ADA Resolution 77H-2015 as it relates to minimal and moderate sedation
Attachments: CURRICULUM VITAE.doc

Dear Sirs and Madams,

In reference to the ADA Resolution 77H-2015 in the Feb. 12 issue of ADA News p. 13. The present definition of **Minimal** sedation and **Moderate** sedation are identical with the exception of the words normally vs. purposefully from the Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students 2012.

Functionally there is no difference in the two definitions. (see below) The problem is some states have requirements for moderate sedation that require doing 20 live cases and 18 hour of lecture. For minimal sedation most states require a 21 hour course. This would make a course to do moderate sedation, the patient is conscious a 13 day course with a price tag of \$5,000 to \$7,000.

There have been multiple incidents of State Boards and Provincial Colleges deciding a practice was doing **moderate sedation** when patients were lightly sedated, completely conscious, in control of all their protective vital reflexes and they fit the definition of **minimal sedation**. The confusion exists because there is no difference in the definitions as published in the ADA guidelines for Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students 2012.

If I could be so bold as to make a suggestion, if you define **minimal sedation** as responding normally to verbal command (stimulation) without tactile stimulation and keeping the present definition of **moderate sedation** - respond purposefully to verbal commands accompanied by light tactile stimulation. By these definitions there is a distinct difference between **minimal** and **moderate sedation**. Moderate sedation would be a deeper level of sedation and could require more training.

Why do I feel qualified to make such suggestions. I have taught 253 nitrous oxide oxygen sedation courses and 117 oral conscious sedation courses with or without nitrous oxide oxygen sedation. I have published over 50 papers on sedation and written chapters in 3 books on fear and pain control. I have attached my resume to better introduce myself.

Please feel free to call if I can be of any assistance.

Fred

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Recommendations Concerning Sedation and Anesthesia Guidelines

ADA Sedation and Anesthesia 4.20.2016

- I. Capnography should be mandatory for monitoring of moderate sedation. Other options (use of pretracheal stethoscope and continuous verbal monitoring) are just not sufficient and are not in agreement with other national professional anesthesia organizations. Support is provided below.
- II. Moderate sedation course duration hours should be 60 hours with both for both IV and nonparenteral routes with a minimum of 20 cases. Emphasis should be placed on interpretation of physiologic monitoring and airway management techniques.
- III. Patient evaluation (i.e. history and physical examination) should be consistently employed for all sedation modalities. Provisions should include use of body mass index (BMI) and timing of medical history review. With the increased awareness of sleep apnea and BMI as markers for airway compromise, this portion of the patient evaluation should be included.

SUPPORT FOR CAPNOGRAPHY DURING MODERATE SEDATION

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Introduction, History

Beginning with the introduction of nitrous oxide and continuing with the development of outpatient anesthesia techniques, dentistry, and the American Dental Association (ADA) has historically always been a vital force in anesthesia. Although various groups and organizations attempt to delineate physiologic distinctions between anxiolysis, procedural sedation, conscious sedation, moderate sedation, twilight sleep, deep sedation, and general anesthesia, the distinctions between various levels of sedation and anesthesia are oftentimes blurred making a determination of a defined level of sedation or anesthesia not always possible. For the purposes of the discussion to follow, moderate sedation is defined as: a drug-induced depression of consciousness during which patients respond purposefully to verbal commands, either alone or accompanied by light tactile stimulation. No interventions are required to maintain a patent airway, and spontaneous ventilation is adequate. Cardiovascular function is usually maintained.¹

Sedation levels and the definitions that surround them, are dynamic, not static, and may change in an instant due to drug administration, absorption of oral medications, ventilation, and other medical conditions. This makes sedation a continuum, not a staircase, of effects. This continuum philosophy is supported by the fact that up to 68% of patients planned for a moderate sedation, may temporarily enter a deep sedation state in which ventilatory function is impaired.²

³ Patients may be asleep, yet sleep may mimic deep sedation. Patients may become apneic, yet be easily arousable. Patients may be awake, yet hypoxic. All of these factors may be due to a patient's sensitivity to anesthesia medications and their pharmacologic response, their age, the medications patients take on a daily basis, their recreational drug habits, and their medical problems (especially undiagnosed sleep apnea); some more challenging than others.

The current training dogma is that anesthesia providers should be able to "rescue" (usually via airway maneuvers) any patient that progresses to the next level of anesthesia. This usually means maintaining the airway, blood pressure, and cardiovascular function. The truth is that a

patient's level of sedation is: 1) impossible to accurately determine using physical examination, 2) not continually measurable, 3) is difficult to determine when a patient transitions from one level of sedation to another, and 4) bears no relationship to the method of monitoring.

Monitoring should be a universal modality to insure safety for all levels of sedation and anesthesia.⁴

Why Pulse Oximetry is Not Sufficient!

Pulse oximetry was developed to measure blood oxygenation using infrared sensors. It is believed that if a pulse oximeter measurement is elevated that patients must: 1) be ventilating properly, 2) have sufficient oxygenation in their blood to be maintain cardiovascular function, and 3) can tolerate additional sedative medications if necessary. Pulse oximetry does not directly measure ventilation or apnea. However, when patients develop hypoventilation or apnea, the oxygenation can continue to remain within the normal range for some time. The pulse oximeter does not reveal downward trends in PaO₂ at levels greater than 100 mm Hg.^{5,6} In patients receiving supplemental oxygen, where the PAO₂ can be elevated to 600 mm Hg, this lag can be even longer.⁷ Contrary to popular belief, adding supplement oxygen can doesn't prevent apnea, but masks it's detection by artificially increasing the pulse oximetry readings. Without some way to measure breathing and ventilation, the patient's may be evaluated, as under-sedated and apneic episodes may not be detected. If a patient is evaluated and found to have an elevated pulse oximeter reading, sedative medications may inadvertently be administered to deep the anesthesia contributing to continued apnea⁸

Capnography Use During Sedation

Because there exists a spectrum between conscious sedation and general anesthesia, loss of consciousness and respiratory depression can occur in any patient and at any time regardless of age, medical problem, and doses of drugs used. Recognition of these events and maneuvers to eliminate them is vital to preventing untoward anesthetic events. The current technology to continually monitor sedation is pulse oximetry. Most providers will interpret an elevated pulse oximeter reading as a direct minute-to-minute measure of adequate ventilation. However, pulse oximetry measures oxygenation and supplemental oxygen via nasal mask or cannula can mask hypoventilation and apnea. However, the newest technology used to measure of ventilation is capnography.

Capnography is the most recent advance in sedation monitoring standards, but has been used in the operating room for more than 35 years.⁹ Monitors currently available use infrared spectrography technology to measure carbon dioxide in respired gases, then give a numerical reading (capnometry) and a waveform (capnography). The capnogram provides information about respiratory rate and effectiveness, and end-tidal carbon dioxide values. It has been mandated for use in moderate sedation by: the American Society of Anesthesiologists, the American Association of Nurse Anesthetists, the American Association of Oral and Maxillofacial Surgeons, the Society of Interventional Radiology, the Canadian Anesthesiologists Society, and the Association of Anaesthetists of Great Britain and Ireland.^{2, 10, 11} Most recently, the Oregon Board of Dentistry mandated capnography for moderate sedation effective 1 Jan. 2016.¹² It is also used in cardiac resuscitation as an indicator of return of spontaneous circulation (ROSC).¹³ It is anticipated that the Centers for Medicare and Medicaid Services (CMS) will mandate a capnography requirement for moderate sedation in the near future.

Capnography involves the monitoring of CO₂ in a patient's expired gases. The end-tidal CO₂ (ETCO₂) is roughly equivalent to a patient's arterial blood CO₂ and has been validated as a method to monitor a patient's hypoventilation and apnea; events which can precede hypoxia by being an early detector of ETCO₂ and downward pulse oximetry changes.¹⁴ Hand-held and integrated vital signs monitors are available for in-office use, have been available for several years, and are quite economical. Capnography can also be used to detect disordered breathing 30-90 sec. earlier than pulse oximetry.^{15, 16} Apnea or downward trends in ETCO₂ suggest that airway maneuvers (chin lift, jaw thrusts, airway devices, laryngeal mask airways or endotracheal intubation, etc.) can then be used to improve and optimize ventilation in a timely fashion.

The Value Capnography in Sedation

There are oftentimes pros and cons during the introduction of any new monitoring method in anesthesia. However, several studies have validated the importance of capnography during moderate sedation. The fact that ETCO₂ monitoring of ventilation during sedation has several studies supporting its use underlies its importance in providing safe sedation and anesthesia. Early detection of respiratory changes by capnography was improved in children having GI procedures with moderate sedation.¹⁷ In a meta-analysis of studies conducted during procedural sedation, respiratory depression was 17.6 times more likely to be detected in cases using capnography.¹⁸ Hart et al. showed that when using drugs commonly used for conscious

sedation, a high incidence of subclinical depression was produced.¹⁹ ETCO₂ monitoring provided an earlier indicator of respiratory depression and pulse oximetry and respiratory rate alone. Waugh, Khodneva, and Epps concluded in a meta-analysis that during procedural analgesia and anesthesia, respiratory depression was 28 times more likely to be detected using capnography than by traditional methods.²⁰ A randomized, controlled study of 132 patients receiving procedural sedation in an emergency department, showed that adding capnography resulted in identifying all hypoxic events before onset.¹⁶ In 247 patients having elective endoscopic retrograde cholangiopancreatography and endoscopic ultrasonography with moderate sedation, capnography reduced the frequency and severity of hypoxemia and apnea.²¹

Other Methods to Monitor Ventilation

There also exist other alternative methods for monitoring ventilation. These include: 1) patient communication, 2) visual assessment of chest wall motion, 3) use of an earpiece pre-cordial stethoscope for auscultation of breath sounds, or 4) use of a wireless pre-cordial stethoscope for amplified auscultation.²² Patient communication is oftentimes not a measure of ventilation as patients can speak or babble continuously, but then immediately drift off into sleep where they may become apneic.²³ Given the current technology for patient monitoring, visual methods can also have major shortcomings.^{22, 24-28} Observation of chest wall motion does not measure gas exchange or depth of inspiration and expiration, only the movement of the chest wall. During any procedure, patient drapes, throat packs, nasal masks or cannulas, dental equipment, and instruments trays placed anywhere around a patient's face or chest, can obscure visual observation of the patient. Relying on clinical observation to recognize gas exchange, ventilation, and hypoxemia is not optimal as changes which detect disordered or apnea do not occur in relation to oxygenation.²⁵

Pre-cordial stethoscopes use tubing or amplification of lung sounds to monitor ventilation. These devices can give varying and unreliable results depending on the size of the bell, length of the tubing, and ambient room noise.²⁸ Sound amplification of breath sounds can be monitored using an earpiece or amplified sound via a speaker or ear piece; usually by only one provider, the anesthetist. In a study of 520 anesthetics, anesthesia providers were listening via an anesthesia stethoscope in only 28% of cases.²⁹ Additionally, earpieces are detrimental to communication in the treatment room, and are subject to amplification of ambient sounds in their vicinity as they are placed in the pre-tracheal region. Background sounds including staff

communication, suctioning, high-speed handpieces, monitoring devices, monitor alarms, and instruments placement may camouflage monitoring of breathing. The newer precordial stethoscopes utilize wireless earpieces, are usually connected to a single dedicated channel in the stethoscope and have to be re-synchronized if moving to a different room on a different channel. There are few studies comparing traditional monitoring using visual assessment and auscultation of breath sounds versus electronic monitoring using capnography and pulse oximetry. This study evaluated 39 pediatric dental sedations using an oral narcotic, hydroxyzine, chloral hydrate combination. The results showed 10 confirmed episodes of respiratory compromise which were identified electronically by capnography; none were detected by pulse oximetry.²⁴

Enthusiasm of Capnography Monitoring For All Sedation

In summary, capnography has been mandated for use in moderate sedation by numerous professional organizations as a monitoring modality for improving patient safety. The value of capnography for detecting apnea and ventilation is well documented. Since dentistry has made significant contributions to anesthesia, the time has come for the ADA to mandate capnography as a monitoring requirement for moderate sedation and anesthesia. Even in the best of circumstances, sedation may cause untoward events. In Texas, there have been anesthetic deaths in the last several months, even when dental anesthesiologists managed the patients. These events likely get reported to state legislators who then mandate requirements to the state dental board. Many times the fallout includes unreasonable and financial requirements (e.g. continuing education requirements) to individual practitioners. It behooves the ADA that dentists are practicing at or above the standard of care for out-of-hospital anesthesia. Capnography is now that standard of care. Failure of the ADA to support capnography for moderate sedation will leave ADA members in a difficult position should anesthesia complications occur. If these events proceed to lawsuits, expert witnesses will likely be anesthesiologists who will ask why capnography was not used as this is the standard of care in anesthesiology.

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Prepared Remarks: Dr. Michael D. Silverman
ADA Members Hearing: Sedation and Anesthesia Guidelines Res. 77H-2015
April 20, 2016 - Chicago

There are profound questions facing the dental profession and the American Dental Association.

The stakes are high. Very high.

The core issue is much bigger than Resolution 77 and which guidelines the ADA sets for sedation dentistry.

The ultimate question is whether we will be a profession guided by science or by emotion and/or politics.

The answer is not nearly as obvious as you might think.

Caleb Sears, six years old, was a first grader in Northern California who loved climbing trees, singing, and playing with his little sister. In March 2015, his parents took Caleb to an oral surgeon to have a tooth extracted. The little boy never returned home.

Caleb's tragic death – resulting from massive anesthesia-related injuries – is a black mark on our profession, as is the injury of every single patient – young or old – who visits an oral surgeon or pediatric or general dentist for care, and leaves in an ambulance or a hearse.

What are we, as dedicated dentists, to do about Caleb Sears and the handful of other widely publicized cases such as his that arise each year?

To do nothing is inhuman. It's not right, and it doesn't feel right.

In California, the response to Caleb's death was Caleb's Law, a legislative proposal that its supporters hope will improve patient safety in dental offices.

One provision of the proposed legislation would require dentists to inform the parents and guardians of child patients of the increased risk that occurs when general anesthesia or deep sedation is provided without a separate anesthesia provider, or without specific monitoring equipment.

As the backers of Caleb's law point out, general medicine surgeons must rely on a separate anesthesia provider, so isn't it *logical* that oral surgeons, at the very least, ought to inform parents of the heightened risk of extracting a tooth without having a separate anesthesia provider in the room?

Who would argue against that provision of Caleb's Law? Legislators and regulators in other states, undoubtedly, are asking themselves the same question: Why not?

Indeed. Why not require all oral surgeons, nationally, to either use a separate anesthesia provider or, at least, inform their patients of the heightened risk of proceeding without a separate provider?

Perhaps this year the ADA should revise its guidelines as they pertain to anesthesia and oral surgery to endorse Caleb's Law?

It certainly seems logical. Having the ADA endorse Caleb's Law would be an appropriate tribute to Caleb Sears and the others who've died or been injured by an oral surgeon. And it would clearly demonstrate to the public, legislators, and the media that the ADA really, truly, cares.

Or would it?

As a professional organization that first endorsed Evidence-Based Dentistry in 2000 and established its own Center for Evidence-Based Dentistry in 2007, should we base our guidelines for dentistry on emotion – Caleb's Law, or on scientific evidence?

Where is the science that justifies Caleb's Law?

Does the fact that general medical surgeons use a separate anesthesia provider make it proven science that oral surgeons are putting *their* patients at greater risk if they don't rely on a separate provider? Where is the science? Where is the empirical data that Evidence-Based Dentistry is supposed to be built upon?

There are untold numbers of victims of bad public health policy and misguided ADA guidelines that rarely make news headlines.

We don't see the uncounted children who die each year, or have their oral and general health severely compromised, because they don't visit an oral surgeon or a pediatric or general dentist.

If oral surgeons were required to have a separate anesthesia provider present when they administer general anesthesia or deep sedation, is there science to show that it would actually be safer than current guidelines? Would there still be oral surgeons, even in the company of a separate provider, who screw up and injure their patients?

Would the added cost of having a second health professional in the room raise the cost of treatment so high that many patients would be priced out of the market – and suffer the health consequences?

How do we, and the ADA, decide such questions? Based on emotion? Based on news coverage? Based on "best intentions?"

If there is a means, through guidelines and regulations, to prevent all tragic and senseless deaths at the dentist office, who would vote against it?

There is, of course, one obvious way. Outlaw all dentistry. If we do that, at least no one will suffer tragically because some oral surgeon or pediatric or general dentist fails to follow protocols.

Just how far will we let emotion and fear carry us before reason and science prevail?

When we set our guidelines based, not on science or empirical data, but on emotion and fear, we open a Pandora's box of consequences.

Today we are talking about guidelines for general dentists who use oral sedation in their practices. In the foreground, is a growing movement to change the way that oral surgeons treat and inform their patients. In both instances, there is a glaring, overwhelming, lack of science to support the proposed changes.

Will we be seduced into abandoning our long commitment to Evidence-Based Dentistry in exchange for the false comfort that "at least we're taking action?"

Will Caleb Sears's death be a motivation for our profession to actually improve patient safety, or will it cause us to act precipitously – mistakenly – to soothe our broken hearts?

If there is evidence – scientific evidence, that clearly demonstrates the changes proposed in Resolution 77 will make our patients safer, then show it to us. We are an evidence-based organization. Where is the evidence?

If dentistry need not do its own studies and due diligence, relying instead on the way physicians and general medical surgeons practice, then produce the evidence that convincingly demonstrates that what is right for general medicine is always right for dentistry, too.

I haven't seen any such evidence – and believe me, I've looked.

The ADA Center for Evidence-Based Dentistry currently includes 89 critical summaries and systematic reviews in its evidence database pertaining to Anesthesia, Oral Sedation, and Pain Control. None of the articles offer a scintilla of evidence to support the changes embodied in Resolution 77. Not a one of them.

By contrast, there are dozens – perhaps hundreds, of peer-reviewed Journal articles and studies that reinforce the need and efficacy of oral sedation in treating fearful

and anxious patients, and the safety of oral sedation when administered in accordance with the existing ADA guidelines and state regulations. A sampling of these studies can be found at www.GetTheScience.com.

The true question facing the ADA and its members is NOT simply to approve or kill Resolution 77. That is only a skirmish in a much larger, more profound battle. The real question is whether the ADA and its members will abandon Evidence-Based Dentistry and, in its place, pass guidelines that make us *feel* like we're preventing tragedies, when in fact, we have nothing to base such changes on other than wishful thinking.

In summary: If the ADA reintroduces Resolution 77 – without the evidence-based dentistry such changes demand – it will be endorsing a Pandora's box of uncontrolled emotion that will ultimately consume all of professional dentistry.

The future of every dentist in this country, and all of our patients, is at stake.

7:24 seconds

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Council on Dental Education and Licensure

This PDF document includes written comments received during June and July 2016 in response to a request from the Council inviting input on June 2016 proposed revisions to the ADA *Guidelines for the Use of Sedation and General Anesthesia by Dentists* and the *Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students*.

From: Sullivan, Steven M. (HSC) [<mailto:Steven-Sullivan@ouhsc.edu>]
Sent: Wednesday, June 08, 2016 8:54 AM
To: Jasek, Jane F.
Subject: Revisions on the Use of Sedation and General Anesthesia by Dentists

I would like to enter these remarks on behalf of the University of Oklahoma College of Dentistry Department of Oral and Maxillofacial Surgery who is responsible for the teaching of local anesthesia and pain/anxiety control, including IV sedation and general anesthesia for oral and maxillofacial surgery residents.

I strongly support the use of end tidal CO2 monitoring during the course of moderate sedation as we all know well this is the standard of care with our anesthesia colleagues, and there is no reason to set ourselves apart by dumbing down this particular recommendation. It is clear that this is being promulgated by those who are too cheap to spend the money in the name of good patient care to get monitors that provide important information during the process of an anesthesia.

Additionally, I believe that moderate sedation can occur, as well as general anesthesia, regardless of the route of administration and can be drug-dependent as well as dose-dependent. With that in mind, I think that everyone should have a maximal number of hours of course content as well as hands-on exposure and experience before being permitted to treat patients. Keep in mind this is about patients and not about providers.

Furthermore, it is important that all patients have an appropriate updated medical history prior to any type of sedation or anesthetic and that all ASA 3 and 4 patients realistically should not be done in a dental office but taken to a hospital where potential complications due to their comorbidities can be managed. Additionally, it is important to realize patients with an elevated BMI pose additional risks that a poorly trained dentist may have difficulty dealing with.

I appreciate the opportunity to enter these remarks on behalf of the University of Oklahoma.

Steven M. Sullivan, DDS
Professor and Chairman
Department of Oral and Maxillofacial Surgery

University of Oklahoma
405-271-4955
www.oralfacialsurgeons.com

Sent from my iPhone please excuse typographical errors





American Academy of Periodontology

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June 24, 2016

Dr. Daniel J. Gesek, Jr., Chair
Council on Dental Education and Licensure
American Dental Association
211 East Chicago Avenue
Chicago, IL 60611

Dear Dr. Gesek:

The American Academy of Periodontology is pleased to provide comments on the proposed changes to the American Dental Association (ADA) *Guidelines for the Use of Sedation and General Anesthesia by Dentists* and the *ADA Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students*.

Lines 468-472 and 595-598: Elimination of the mandate for monitoring end tidal CO₂ for moderate sedation to allow for the choice of options such as continuous use of a precordial or pretracheal stethoscope, continuous monitoring of end tidal carbon dioxide, and continual verbal communication with the patient.

The Academy **supports** the mandate for end-tidal CO₂ monitoring.

Lines 1362-1365 and 1366-1372: Reconsideration of the section "Moderate Sedation Course Duration" (hours and content), as proposed by level of sedation, or a possible option of separate course requirements for enteral and parenteral routes of sedation.

The Academy **does not support** two separate training requirements, one for parenteral and a lesser one for enteral, if the level of sedation is the same. Training should prepare dentists to competency in intravenous moderate sedation, titration of drugs, and rescuing the patient from the next level of sedation. The Academy recommends lines 1364-1365 be modified as follows, with additions noted in red:

- A minimum of 60 hours of instruction plus administration of sedation for at least 20 individually managed patients **by intravenous route.**

Lines 302-322; 397-409; and 518-550: Making patient evaluation provisions consistent throughout the document, including but not limited to, rationale and guidelines for the use of Body Mass Index (BMI) and the timing of medical history review.

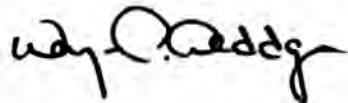
The Academy believes the Guidelines should state the necessity for a recent medical history (without specific time frame) and prior to administration of sedation an assessment of changes with a pre-operative assessment. In regard to BMI, the Academy does not believe a specific BMI number is an appropriate way to assess if a patient is a candidate for sedation. Each patient must be assessed on their entire medical history including condition of airway. The Academy **recommends that lines 404-409 be deleted.**

Lines 107-112; 389-393; 510-514; 549-550; 627; 637; and 1097: Because of reference to and support of the American Academy of Pediatrics and American Association of Pediatric Dentist's Guidelines for management of pediatric patients undergoing sedation, the CDEL is recommending that the ADA Guidelines apply to the adult patient population only.

The Academy **supports** that the ADA Guidelines apply to patients who are 18 and over.

If you have any questions or need additional information, please contact Cheryl Parker at 312-573-3231 or cheryl@perio.org.

Sincerely,

A handwritten signature in black ink, appearing to read "Wayne Aldredge". The signature is fluid and cursive, with the first name "Wayne" and last name "Aldredge" clearly distinguishable.

Wayne Aldredge, DMD
President

c: Board of Trustees



AMERICA'S PEDIATRIC DENTISTS
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June 28, 2016

Dr. David Sarrett
Chair, Council on Dental Education and Licensure
American Dental Association
211 E. Chicago Ave.
Chicago, IL 60611

Dear Dr. Sarrett:

Thank you for the opportunity to provide comments to the proposed ADA *Guidelines for the Use of Sedation and General Anesthesia by Dentists*.

These comments are predicated on the differences between the proposed ADA guidelines and the American Academy of Pediatrics and American Academy of Pediatric Dentistry *Guidelines for Monitoring and Management of Pediatric Patients Before, During and After Sedation for Diagnostic and Therapeutic Procedures: Update 2016* (AAP/AAPD Guidelines) with regards to the role of capnography during moderate sedation.

The AAP/AAPD Guidelines states that moderate sedation is a '*...drug-induced depression of consciousness during which patients respond purposefully to verbal commands or after light tactile stimulation. No interventions are required to maintain a patent airway, and spontaneous ventilation is adequate...*'¹ Assessment of ventilation is understood to be key to prevent respiratory compromise / distress. The AAP/AAPD Guidelines outline monitoring based on bidirectional verbal communication with the patient.

1. When bidirectional verbal communication is appropriate monitoring of ventilation by (1) capnography (preferred) or (2) amplified, audible pretracheal stethoscope (e.g., Bluetooth technology) or precordial stethoscope is strongly recommended.²

It is the intent of this statement is to reinforce to the provider the critical nature of assessing ventilation, while at the same time providing multiple avenues when bidirectional verbal communication is appropriate.

¹ Cote, C. J., Wilson, S. American Academy of Pediatrics, American Academy of Pediatric Dentistry. Guidelines for monitoring and management of pediatric patients before, during and after sedation for diagnostic and therapeutic procedures: update 2016. *Pediatrics* (2016) 138(1): e20161212

² Ibid., e10

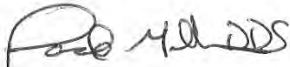
2. When bidirectional verbal communication is not appropriate or possible, then ventilation is to be assessed as a requirement by capnography (preferred), amplified, audible pretracheal stethoscope, or precordial stethoscope.³

The AAPD understands that sedation exists on a continuum; and a patient intended for moderate sedation may proceed into deep sedation. Deep sedation is defined as “*drug-induced depression of consciousness during which patients cannot be easily aroused but respond purposefully after repeated verbal or painful stimulation.*” These patients are required by the AAPD/AAP to be assessed by capnography/end-tidal carbon dioxide assessment until they return to a state defined by moderate sedation.⁴

The AAPD respectfully requests the ADA to consider making an option for ventilation assessment when bidirectional verbal communication is appropriate.

Should you have any questions, please direct them to Dr. John S. Rutkauskas, CEO of the AAPD at jrutkauskas@aapd.org.

Sincerely,



Jade A. Miller, DDS
President

cc: AAPD Board of Trustees
John R. Liu, Chair, AAPD Committee on Sedation and Anesthesia
Sarat A. Thikkurissy
Karen Hart

³ Ibid., e11

⁴ Ibid., e11



Guidelines for Monitoring and Management of Pediatric Patients Before, During, and After Sedation for Diagnostic and Therapeutic Procedures: Update 2016

Charles J. Coté, MD, FAAP, Stephen Wilson, DMD, MA, PhD, AMERICAN ACADEMY OF PEDIATRICS, AMERICAN ACADEMY OF PEDIATRIC DENTISTRY

The safe sedation of children for procedures requires a systematic approach that includes the following: no administration of sedating medication without the safety net of medical/dental supervision, careful presedation evaluation for underlying medical or surgical conditions that would place the child at increased risk from sedating medications, appropriate fasting for elective procedures and a balance between the depth of sedation and risk for those who are unable to fast because of the urgent nature of the procedure, a focused airway examination for large (kissing) tonsils or anatomic airway abnormalities that might increase the potential for airway obstruction, a clear understanding of the medication's pharmacokinetic and pharmacodynamic effects and drug interactions, appropriate training and skills in airway management to allow rescue of the patient, age- and size-appropriate equipment for airway management and venous access, appropriate medications and reversal agents, sufficient numbers of staff to both carry out the procedure and monitor the patient, appropriate physiologic monitoring during and after the procedure, a properly equipped and staffed recovery area, recovery to the presedation level of consciousness before discharge from medical/dental supervision, and appropriate discharge instructions. This report was developed through a collaborative effort of the American Academy of Pediatrics and the American Academy of Pediatric Dentistry to offer pediatric providers updated information and guidance in delivering safe sedation to children.

abstract



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The guidance in this report does not indicate an exclusive course of treatment or serve as a standard of medical/dental care. Variations, taking into account individual circumstances, may be appropriate.

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INTRODUCTION

The number of diagnostic and minor surgical procedures performed on pediatric patients outside of the traditional operating room setting has increased in the past several decades. As a consequence of this change and the increased awareness of the importance of providing analgesia and anxiolysis, the need for sedation for procedures in physicians' offices, dental offices, subspecialty procedure suites, imaging facilities, emergency departments, other inpatient hospital settings, and ambulatory surgery centers also has increased markedly.¹⁻⁵² In recognition of this need for both elective and emergency use of sedation in nontraditional settings, the American Academy of Pediatrics (AAP) and the American Academy of Pediatric Dentistry (AAPD) have published a series of guidelines for the monitoring and management of pediatric patients during and after sedation for a procedure.⁵³⁻⁵⁸ The purpose of this updated report is to unify the guidelines for sedation used by medical and dental practitioners; to add clarifications regarding monitoring modalities, particularly regarding continuous expired carbon dioxide measurement; to provide updated information from the medical and dental literature; and to suggest methods for further improvement in safety and outcomes. This document uses the same language to define sedation categories and expected physiologic responses as The Joint Commission, the American Society of Anesthesiologists (ASA), and the AAPD.^{56,57,59-61}

This revised statement reflects the current understanding of appropriate monitoring needs of pediatric patients both during and after sedation for a procedure.^{3,4,11,18,20,21,23,24,33,39,41,44,47,51,62-73} The monitoring and care outlined may be exceeded at any time on the basis of the judgment of the

responsible practitioner. Although intended to encourage high-quality patient care, adherence to the recommendations in this document cannot guarantee a specific patient outcome. However, structured sedation protocols designed to incorporate these safety principles have been widely implemented and shown to reduce morbidity.^{11,23,24,27,30-33,35,39,41,44,47,51,74-84} These practice recommendations are proffered with the awareness that, regardless of the intended level of sedation or route of drug administration, the sedation of a pediatric patient represents a continuum and may result in respiratory depression, laryngospasm, impaired airway patency, apnea, loss of the patient's protective airway reflexes, and cardiovascular instability.^{38,43,45,47,48,59,62,63,85-112}

Procedural sedation of pediatric patients has serious associated risks.^{2,5,38,43,45,47,48,62,63,71,83,85,88-105,107-138} These adverse responses during and after sedation for a diagnostic or therapeutic procedure may be minimized, but not completely eliminated, by a careful preprocedure review of the patient's underlying medical conditions and consideration of how the sedation process might affect or be affected by these conditions: for example, children with developmental disabilities have been shown to have a threefold increased incidence of desaturation compared with children without developmental disabilities.^{74,78,103} Appropriate drug selection for the intended procedure, a clear understanding of the sedating medication's pharmacokinetics and pharmacodynamics and drug interactions, as well as the presence of an individual with the skills needed to rescue a patient from an adverse response are critical.^{42,48,62,63,92,97,99,125-127,132,133,139-158}

Appropriate physiologic monitoring and continuous observation by personnel not directly involved with

the procedure allow for the accurate and rapid diagnosis of complications and initiation of appropriate rescue interventions.^{44,63,64,67,68,74,90,96,110,159-174} The work of the Pediatric Sedation Research Consortium has improved the sedation knowledge base, demonstrating the marked safety of sedation by highly motivated and skilled practitioners from a variety of specialties practicing the above modalities and skills that focus on a culture of sedation safety.^{45,83,95,128-138} However, these groundbreaking studies also show a low but persistent rate of potential sedation-induced life-threatening events, such as apnea, airway obstruction, laryngospasm, pulmonary aspiration, desaturation, and others, even when the sedation is provided under the direction of a motivated team of specialists.¹²⁹ These studies have helped define the skills needed to rescue children experiencing adverse sedation events.

The sedation of children is different from the sedation of adults. Sedation in children is often administered to relieve pain and anxiety as well as to modify behavior (eg, immobility) so as to allow the safe completion of a procedure. A child's ability to control his or her own behavior to cooperate for a procedure depends both on his or her chronologic age and cognitive/emotional development. Many brief procedures, such as suture of a minor laceration, may be accomplished with distraction and guided imagery techniques, along with the use of topical/local anesthetics and minimal sedation, if needed.¹⁷⁵⁻¹⁸¹ However, longer procedures that require immobility involving children younger than 6 years or those with developmental delay often require an increased depth of sedation to gain control of their behavior.^{86,87,103} Children younger than 6 years (particularly those younger than 6 months) may be at greatest risk of an adverse event.¹²⁹ Children in this age group are particularly vulnerable

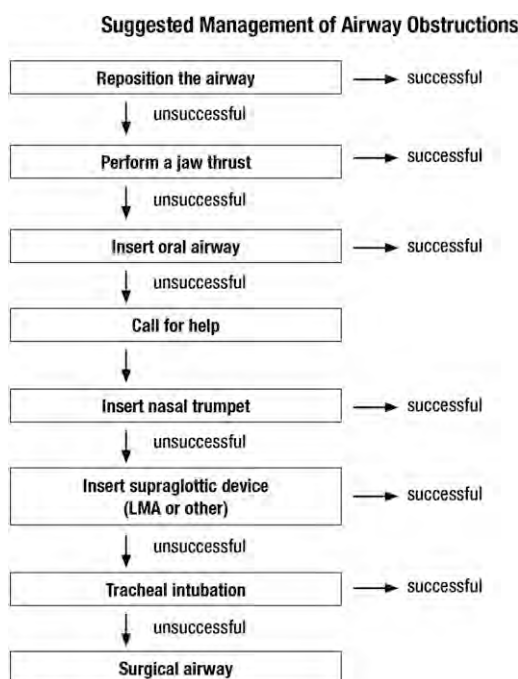


FIGURE 1
Suggested management of airway obstruction.

to the sedating medication's effects on respiratory drive, airway patency, and protective airway reflexes.^{62,63} Other modalities, such as careful preparation, parental presence, hypnosis, distraction, topical local anesthetics, electronic devices with age-appropriate games or videos, guided imagery, and the techniques advised by child life specialists, may reduce the need for or the needed depth of pharmacologic sedation.^{29,46,49,182–211}

Studies have shown that it is common for children to pass from the intended level of sedation to a deeper, unintended level of sedation,^{85,88,212,213} making the concept of rescue essential to safe sedation. Practitioners of sedation must have the skills to rescue the patient from a deeper level than that intended for the procedure. For example, if the intended level of sedation is "minimal," practitioners must be able to rescue from "moderate sedation"; if the intended level of sedation is "moderate," practitioners must have the skills to rescue from "deep sedation"; if the

intended level of sedation is "deep," practitioners must have the skills to rescue from a state of "general anesthesia." The ability to rescue means that practitioners must be able to recognize the various levels of sedation and have the skills and age- and size-appropriate equipment necessary to provide appropriate cardiopulmonary support if needed.

These guidelines are intended for all venues in which sedation for a procedure might be performed (hospital, surgical center, freestanding imaging facility, dental facility, or private office). Sedation and anesthesia in a nonhospital environment (eg, private physician's or dental office, freestanding imaging facility) historically have been associated with an increased incidence of "failure to rescue" from adverse events, because these settings may lack immediately available backup. Immediate activation of emergency medical services (EMS) may be required in such settings, but the practitioner is responsible for life-support measures while awaiting

EMS arrival.^{63,214} Rescue techniques require specific training and skills.^{63,74,215,216} The maintenance of the skills needed to rescue a child with apnea, laryngospasm, and/or airway obstruction include the ability to open the airway, suction secretions, provide continuous positive airway pressure (CPAP), perform successful bag-valve-mask ventilation, insert an oral airway, a nasopharyngeal airway, or a laryngeal mask airway (LMA), and, rarely, perform tracheal intubation. These skills are likely best maintained with frequent simulation and team training for the management of rare events.^{128,130,217–220} Competency with emergency airway management procedure algorithms is fundamental for safe sedation practice and successful patient rescue (see Figs 1, 2, and 3).^{215,216,221–223}

Practitioners should have an in-depth knowledge of the agents they intend to use and their potential complications. A number of reviews and handbooks for sedating pediatric patients are available.^{30,39,65,75,171,172,201,224–233} There are specific situations that are beyond the scope of this document. Specifically, guidelines for the delivery of general anesthesia and monitored anesthesia care (sedation or analgesia), outside or within the operating room by anesthesiologists or other practitioners functioning within a department of anesthesiology, are addressed by policies developed by the ASA and by individual departments of anesthesiology.²³⁴ In addition, guidelines for the sedation of patients undergoing mechanical ventilation in a critical care environment or for providing analgesia for patients postoperatively, patients with chronic painful conditions, and patients in hospice care are beyond the scope of this document.

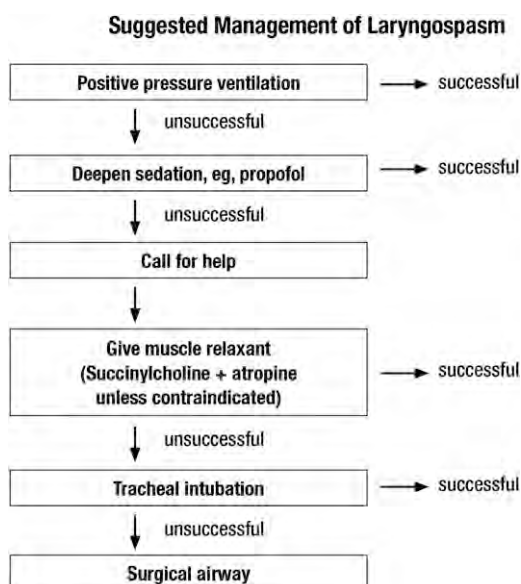


FIGURE 2
Suggested management of laryngospasm.

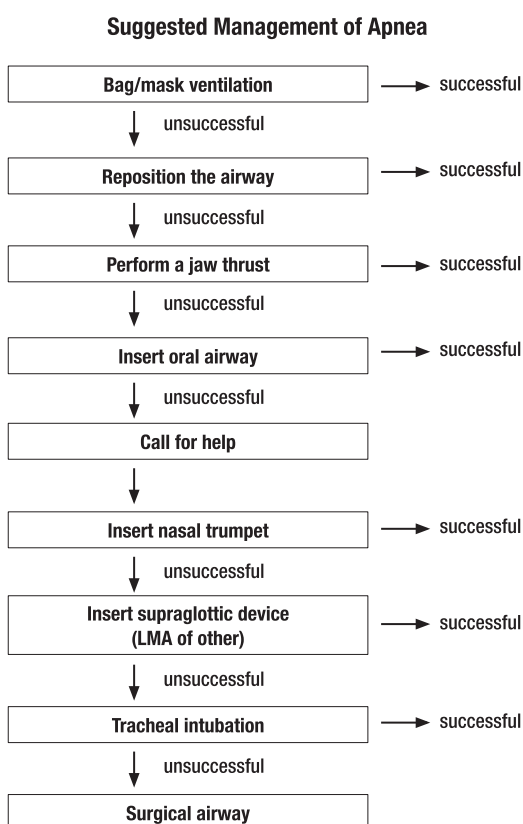


FIGURE 3
Suggested management of apnea.

GOALS OF SEDATION

The goals of sedation in the pediatric patient for diagnostic and therapeutic

procedures are as follows: (1) to guard the patient's safety and welfare; (2) to minimize physical discomfort and pain; (3) to control

anxiety, minimize psychological trauma, and maximize the potential for amnesia; (4) to modify behavior and/or movement so as to allow the safe completion of the procedure; and (5) to return the patient to a state in which discharge from medical/dental supervision is safe, as determined by recognized criteria (Supplemental Appendix 1).

These goals can best be achieved by selecting the lowest dose of drug with the highest therapeutic index for the procedure. It is beyond the scope of this document to specify which drugs are appropriate for which procedures; however, the selection of the fewest number of drugs and matching drug selection to the type and goals of the procedure are essential for safe practice. For example, analgesic medications, such as opioids or ketamine, are indicated for painful procedures. For nonpainful procedures, such as computed tomography or magnetic resonance imaging (MRI), sedatives/hypnotics are preferred. When both sedation and analgesia are desirable (eg, fracture reduction), either single agents with analgesic/sedative properties or combination regimens are commonly used. Anxiolysis and amnesia are additional goals that should be considered in the selection of agents for particular patients. However, the potential for an adverse outcome may be increased when 2 or more sedating medications are administered.^{62,127,136,173,235} Recently, there has been renewed interest in noninvasive routes of medication administration, including intranasal and inhaled routes (eg, nitrous oxide; see below).²³⁶

Knowledge of each drug's time of onset, peak response, and duration of action is important (eg, the peak electroencephalogram [EEG] effect of intravenous midazolam occurs at ~4.8 minutes, compared with that of diazepam at ~1.6 minutes²³⁷⁻²³⁹). Titration of drug to effect is an important concept;

one must know whether the previous dose has taken full effect before administering additional drugs.²³⁷ Drugs that have a long duration of action (eg, intramuscular pentobarbital, phenothiazines) have fallen out of favor because of unpredictable responses and prolonged recovery. The use of these drugs requires a longer period of observation even after the child achieves currently used recovery and discharge criteria.^{62,238–241} This concept is particularly important for infants and toddlers transported in car safety seats; re-sedation after discharge attributable to residual prolonged drug effects may lead to airway obstruction.^{62,63,242} In particular, promethazine (Phenergan; Wyeth Pharmaceuticals, Philadelphia, PA) has a “black box warning” regarding fatal respiratory depression in children younger than 2 years.²⁴³ Although the liquid formulation of chloral hydrate is no longer commercially available, some hospital pharmacies now are compounding their own formulations. Low-dose chloral hydrate (10–25 mg/kg), in combination with other sedating medications, is used commonly in pediatric dental practice.

GENERAL GUIDELINES

Candidates

Patients who are in ASA classes I and II are frequently considered appropriate candidates for minimal, moderate, or deep sedation (Supplemental Appendix 2). Children in ASA classes III and IV, children with special needs, and those with anatomic airway abnormalities or moderate to severe tonsillar hypertrophy present issues that require additional and individual consideration, particularly for moderate and deep sedation.^{68,244–249} Practitioners are encouraged to consult with

appropriate subspecialists and/or an anesthesiologist for patients at increased risk of experiencing adverse sedation events because of their underlying medical/surgical conditions.

Responsible Person

The pediatric patient shall be accompanied to and from the treatment facility by a parent, legal guardian, or other responsible person. It is preferable to have 2 adults accompany children who are still in car safety seats if transportation to and from a treatment facility is provided by 1 of the adults.²⁵⁰

Facilities

The practitioner who uses sedation must have immediately available facilities, personnel, and equipment to manage emergency and rescue situations. The most common serious complications of sedation involve compromise of the airway or depressed respirations resulting in airway obstruction, hypoventilation, laryngospasm, hypoxemia, and apnea. Hypotension and cardiopulmonary arrest may occur, usually from the inadequate recognition and treatment of respiratory compromise.^{42,48,92,97,99,125,132,139–155} Other rare complications also may include seizures, vomiting, and allergic reactions. Facilities providing pediatric sedation should monitor for, and be prepared to treat, such complications.

Back-up Emergency Services

A protocol for immediate access to back-up emergency services shall be clearly outlined. For nonhospital facilities, a protocol for the immediate activation of the EMS system for life-threatening complications must be established and maintained.⁴⁴ It should be understood that the availability of EMS does not replace the practitioner’s responsibility to

provide initial rescue for life-threatening complications.

On-site Monitoring, Rescue Drugs, and Equipment

An emergency cart or kit must be immediately accessible. This cart or kit must contain the necessary age- and size-appropriate equipment (oral and nasal airways, bag-valve-mask device, LMAs or other supraglottic devices, laryngoscope blades, tracheal tubes, face masks, blood pressure cuffs, intravenous catheters, etc) to resuscitate a nonbreathing and unconscious child. The contents of the kit must allow for the provision of continuous life support while the patient is being transported to a medical/dental facility or to another area within the facility. All equipment and drugs must be checked and maintained on a scheduled basis (see Supplemental Appendices 3 and 4 for suggested drugs and emergency life support equipment to consider before the need for rescue occurs). Monitoring devices, such as electrocardiography (ECG) machines, pulse oximeters with size-appropriate probes, end-tidal carbon dioxide monitors, and defibrillators with size-appropriate patches/paddles, must have a safety and function check on a regular basis as required by local or state regulation. The use of emergency checklists is recommended, and these should be immediately available at all sedation locations; they can be obtained from <http://www.pedsanesthesia.org/>.

Documentation

Documentation prior to sedation shall include, but not be limited to, the following recommendations:

1. Informed consent: The patient record shall document that appropriate informed consent was obtained according to local, state, and institutional requirements.^{251,252}
2. Instructions and information provided to the responsible

person: The practitioner shall provide verbal and/or written instructions to the responsible person. Information shall include objectives of the sedation and anticipated changes in behavior during and after sedation.^{163,253–255} Special instructions shall be given to the adult responsible for infants and toddlers who will be transported home in a car safety seat regarding the need to carefully observe the child's head position to avoid airway obstruction. Transportation in a car safety seat poses a particular risk for infants who have received medications known to have a long half-life, such as chloral hydrate, intramuscular pentobarbital, or phenothiazine because deaths after procedural sedation have been reported.^{62,63,238,242,256,257} Consideration for a longer period of observation shall be given if the responsible person's ability to observe the child is limited (eg, only 1 adult who also has to drive). Another indication for prolonged observation would be a child with an anatomic airway problem, an underlying medical condition such as significant obstructive sleep apnea (OSA), or a former preterm infant younger than 60 weeks' postconceptional age. A 24-hour telephone number for the practitioner or his or her associates shall be provided to all patients and their families. Instructions shall include limitations of activities and appropriate dietary precautions.

Dietary Precautions

Agents used for sedation have the potential to impair protective airway reflexes, particularly during deep sedation. Although a rare occurrence, pulmonary aspiration may occur if the child regurgitates and cannot protect his or her airway.^{95,127,258} Therefore, the practitioner should

evaluate preceding food and fluid intake before administering sedation. It is likely that the risk of aspiration during procedural sedation differs from that during general anesthesia involving tracheal intubation or other airway manipulations.^{259,260} However, the absolute risk of aspiration during elective procedural sedation is not yet known; the reported incidence varies from ~1 in 825 to ~1 in 30 037.^{95,127,129,173,244,261} Therefore, standard practice for fasting before elective sedation generally follows the same guidelines as for elective general anesthesia; this requirement is particularly important for solids, because aspiration of clear gastric contents causes less pulmonary injury than aspiration of particulate gastric contents.^{262,263}

For emergency procedures in children undergoing general anesthesia, the reported incidence of pulmonary aspiration of gastric contents from 1 institution is ~1 in 373 compared with ~1 in 4544 for elective anesthetics.²⁶² Because there are few published studies with adequate statistical power to provide guidance to the practitioner regarding the safety or risk of pulmonary aspiration of gastric contents during procedural sedation,^{95,127,129,173,244,259–261,264–268} it is unknown whether the risk of aspiration is reduced when airway manipulation is not performed/anticipated (eg, moderate sedation). However, if a deeply sedated child requires intervention for airway obstruction, apnea, or laryngospasm, there is concern that these rescue maneuvers could increase the risk of pulmonary aspiration of gastric contents. For children requiring urgent/emergent sedation who do not meet elective fasting guidelines, the risks of sedation and possible aspiration are as-yet unknown and must be balanced against the benefits of performing the procedure promptly. For example, a prudent practitioner would be unlikely

to administer deep sedation to a child with a minor condition who just ate a large meal; conversely, it is not justifiable to withhold sedation/analgesia from the child in significant pain from a displaced fracture who had a small snack a few hours earlier. Several emergency department studies have reported a low to zero incidence of pulmonary aspiration despite variable fasting periods^{260,264,268}; however, each of these reports has, for the most part, clearly balanced the urgency of the procedure with the need for and depth of sedation.^{268,269} Although emergency medicine studies and practice guidelines generally support a less restrictive approach to fasting for brief urgent/emergent procedures, such as care of wounds, joint dislocation, chest tube placement, etc, in healthy children, further research in many thousands of patients would be desirable to better define the relationships between various fasting intervals and sedation complications.^{262–270}

Before Elective Sedation

Children undergoing sedation for elective procedures generally should follow the same fasting guidelines as those for general anesthesia (Table 1).²⁷¹ It is permissible for routine necessary medications (eg, antiseizure medications) to be taken with a sip of clear liquid or water on the day of the procedure.

For the Emergency Patient

The practitioner must always balance the possible risks of sedating nonfasted patients with the benefits of and necessity for completing the procedure. In particular, patients with a history of recent oral intake or with other known risk factors, such as trauma, decreased level of consciousness, extreme obesity (BMI $\geq 95\%$ for age and sex), pregnancy, or bowel motility dysfunction, require careful evaluation before the administration of sedatives. When proper fasting has not been ensured,

the increased risks of sedation must be carefully weighed against its benefits, and the lightest effective sedation should be used. In this circumstance, additional techniques for achieving analgesia and patient cooperation, such as distraction, guided imagery, video games, topical and local anesthetics, hematoma block or nerve blocks, and other techniques advised by child life specialists, are particularly helpful and should be considered.^{29,49,182–201, 274,275}

The use of agents with less risk of depressing protective airway reflexes, such as ketamine, or moderate sedation, which would also maintain protective reflexes, may be preferred.²⁷⁶ Some emergency patients requiring deep sedation (eg, a trauma patient who just ate a full meal or a child with a bowel obstruction) may need to be intubated to protect their airway before they can be sedated.

Use of Immobilization Devices (Protective Stabilization)

Immobilization devices, such as papoose boards, must be applied in such a way as to avoid airway obstruction or chest restriction.^{277–281} The child's head position and respiratory excursions should be checked frequently to ensure airway patency. If an immobilization device is used, a hand or foot should be kept exposed, and the child should never be left unattended. If sedating medications are administered in conjunction with an immobilization device, monitoring must be used at a level consistent with the level of sedation achieved.

Documentation at the Time of Sedation

1. Health evaluation: Before sedation, a health evaluation shall be performed by an appropriately licensed practitioner and reviewed by the sedation team at the time of treatment for possible interval changes.²⁸² The purpose of this evaluation is not only to document baseline status

TABLE 1 Appropriate Intake of Food and Liquids Before Elective Sedation

Ingested Material	Minimum Fasting Period, h
Clear liquids: water, fruit juices without pulp, carbonated beverages, clear tea, black coffee	2
Human milk	4
Infant formula	6
Nonhuman milk: because nonhuman milk is similar to solids in gastric emptying time, the amount ingested must be considered when determining an appropriate fasting period.	6
Light meal: a light meal typically consists of toast and clear liquids. Meals that include fried or fatty foods or meat may prolong gastric emptying time. Both the amount and type of foods ingested must be considered when determining an appropriate fasting period.	6

Source: American Society of Anesthesiologists. Practice guidelines for preoperative fasting and the use of pharmacologic agents to reduce the risk of pulmonary aspiration: application to healthy patients undergoing elective procedures. An updated report by the American Society of Anesthesiologists Committee on Standards and Practice Parameters. Available at: <https://www.asahq.org/For-Members/Practice-Management/Practice-Parameters.aspx>. For emergent sedation, the practitioner must balance the depth of sedation versus the risk of possible aspiration; see also Mace et al²⁷² and Green et al.²⁷³

but also to determine whether the patient has specific risk factors that may warrant additional consultation before sedation. This evaluation also facilitates the identification of patients who will require more advanced airway or cardiovascular management skills or alterations in the doses or types of medications used for procedural sedation.

An important concern for the practitioner is the widespread use of medications that may interfere with drug absorption or metabolism and therefore enhance or shorten the effect time of sedating medications. Herbal medicines (eg, St John's wort, ginkgo, ginger, ginseng, garlic) may alter drug pharmacokinetics through inhibition of the cytochrome P450 system, resulting in prolonged drug effect and altered (increased or decreased) blood drug concentrations (midazolam, cyclosporine, tacrolimus).^{283–292} Kava may increase the effects of sedatives by potentiating γ -aminobutyric acid inhibitory neurotransmission and may increase acetaminophen-induced liver toxicity.^{293–295} Valerian may itself produce sedation that apparently is mediated through the modulation of γ -aminobutyric acid neurotransmission and receptor function.^{291,296–299} Drugs such as erythromycin, cimetidine, and others may also inhibit the cytochrome

P450 system, resulting in prolonged sedation with midazolam as well as other medications competing for the same enzyme systems.^{300–304} Medications used to treat HIV infection, some anticonvulsants, immunosuppressive drugs, and some psychotropic medications (often used to treat children with autism spectrum disorder) may also produce clinically important drug-drug interactions.^{305–314} Therefore, a careful drug history is a vital part of the safe sedation of children. The practitioner should consult various sources (a pharmacist, textbooks, online services, or handheld databases) for specific information on drug interactions.^{315–319} The US Food and Drug Administration issued a warning in February 2013 regarding the use of codeine for postoperative pain management in children undergoing tonsillectomy, particularly those with OSA. The safety issue is that some children have duplicated cytochromes that allow greater than expected conversion of the prodrug codeine to morphine, thus resulting in potential overdose; codeine should be avoided for postprocedure analgesia.^{320–324}

The health evaluation should include the following:

- age and weight (in kg) and gestational age at birth (preterm infants may have associated

sequelae such as apnea of prematurity); and

- health history, including (1) food and medication allergies and previous allergic or adverse drug reactions; (2) medication/drug history, including dosage, time, route, and site of administration for prescription, over-the-counter, herbal, or illicit drugs; (3) relevant diseases, physical abnormalities (including genetic syndromes), neurologic impairments that might increase the potential for airway obstruction, obesity, a history of snoring or OSA,^{325–328} or cervical spine instability in Down syndrome, Marfan syndrome, skeletal dysplasia, and other conditions; (4) pregnancy status (as many as 1% of menarchal females presenting for general anesthesia at children's hospitals are pregnant)^{329–331} because of concerns for the potential adverse effects of most sedating and anesthetic drugs on the fetus^{329,332–338}; (5) history of prematurity (may be associated with subglottic stenosis or propensity to apnea after sedation); (6) history of any seizure disorder; (7) summary of previous relevant hospitalizations; (8) history of sedation or general anesthesia and any complications or unexpected responses; and (9) relevant family history, particularly related to anesthesia (eg, muscular dystrophy, malignant hyperthermia, pseudocholinesterase deficiency).

The review of systems should focus on abnormalities of cardiac, pulmonary, renal, or hepatic function that might alter the child's expected responses to sedating/analgesic medications. A specific query regarding signs and symptoms of sleep-disordered breathing and OSA may be helpful. Children with severe OSA who have experienced repeated episodes of desaturation will likely have altered mu receptors and be

analgesic at opioid levels one-third to one-half those of a child without OSA^{325–328,339,340}; lower titrated doses of opioids should be used in this population. Such a detailed history will help to determine which patients may benefit from a higher level of care by an appropriately skilled health care provider, such as an anesthesiologist. The health evaluation should also include:

- vital signs, including heart rate, blood pressure, respiratory rate, room air oxygen saturation, and temperature (for some children who are very upset or noncooperative, this may not be possible and a note should be written to document this circumstance);
- physical examination, including a focused evaluation of the airway (tonsillar hypertrophy, abnormal anatomy [eg, mandibular hypoplasia], high Mallampati score [ie, ability to visualize only the hard palate or tip of the uvula]) to determine whether there is an increased risk of airway obstruction^{74,341–344};
- physical status evaluation (ASA classification [see Appendix 2]); and
- name, address, and telephone number of the child's home or parent's, or caregiver's cell phone; additional information such as the patient's personal care provider or medical home is also encouraged.

For hospitalized patients, the current hospital record may suffice for adequate documentation of presedation health; however, a note shall be written documenting that the chart was reviewed, positive findings were noted, and a management plan was formulated. If the clinical or emergency condition of the patient precludes acquiring complete information before sedation, this health evaluation should be obtained as soon as feasible.

2. Prescriptions. When prescriptions are used for sedation, a copy of the prescription or a note describing the content of the prescription should be in the patient's chart along with a description of the instructions that were given to the responsible person. **Prescription medications intended to accomplish procedural sedation must not be administered without the safety net of direct supervision by trained medical/dental personnel.** The administration of sedating medications at home poses an unacceptable risk, particularly for infants and preschool-aged children traveling in car safety seats because deaths as a result of this practice have been reported.^{63,257}

Documentation During Treatment

The patient's chart shall contain a time-based record that includes the name, route, site, time, dosage/kilogram, and patient effect of administered drugs. Before sedation, a "time out" should be performed to confirm the patient's name, procedure to be performed, and laterality and site of the procedure.⁵⁹ During administration, the inspired concentrations of oxygen and inhalation sedation agents and the duration of their administration shall be documented. Before drug administration, special attention must be paid to the calculation of dosage (ie, mg/kg); for obese patients, most drug doses should likely be adjusted lower to ideal body weight rather than actual weight.³⁴⁵ When a programmable pump is used for the infusion of sedating medications, the dose/kilogram per minute or hour and the child's weight in kilograms should be double-checked and confirmed by a separate individual. The patient's chart shall contain documentation at the time of treatment that the patient's level of consciousness and responsiveness, heart rate, blood pressure, respiratory rate, expired carbon dioxide values, and oxygen saturation

were monitored. Standard vital signs should be further documented at appropriate intervals during recovery until the patient attains predetermined discharge criteria (Appendix 1). A variety of sedation scoring systems are available that may aid this process.^{212,238,346–348} Adverse events and their treatment shall be documented.

Documentation After Treatment

A dedicated and properly equipped recovery area is recommended (see Appendices 3 and 4). The time and condition of the child at discharge from the treatment area or facility shall be documented, which should include documentation that the child's level of consciousness and oxygen saturation in room air have returned to a state that is safe for discharge by recognized criteria (see Appendix 1). Patients receiving supplemental oxygen before the procedure should have a similar oxygen need after the procedure. Because some sedation medications are known to have a long half-life and may delay a patient's complete return to baseline or pose the risk of re-sedation^{62,104,256,349,350} and because some patients will have complex multiorgan medical conditions, a longer period of observation in a less intense observation area (eg, a step-down observation area) before discharge from medical/dental supervision may be indicated.²³⁹ Several scales to evaluate recovery have been devised and validated.^{212,346–348,351,352} A simple evaluation tool may be the ability of the infant or child to remain awake for at least 20 minutes when placed in a quiet environment.²³⁸

CONTINUOUS QUALITY IMPROVEMENT

The essence of medical error reduction is a careful examination of index events and root-cause analysis of how the event could be avoided in the future.^{353–359}

Therefore, each facility should maintain records that track all adverse events and significant interventions, such as desaturation; apnea; laryngospasm; need for airway interventions, including the need for placement of supraglottic devices such as an oral airway, nasal trumpet, or LMA; positive-pressure ventilation; prolonged sedation; unanticipated use of reversal agents; unplanned or prolonged hospital admission; sedation failures; inability to complete the procedure; and unsatisfactory sedation, analgesia, or anxiolysis.³⁶⁰ Such events can then be examined for the assessment of risk reduction and improvement in patient/family satisfaction.

PREPARATION FOR SEDATION PROCEDURES

Part of the safety net of sedation is using a systematic approach so as to not overlook having an important drug, piece of equipment, or monitor immediately available at the time of a developing emergency. To avoid this problem, it is helpful to use an acronym that allows the same setup and checklist for every procedure. A commonly used acronym useful in planning and preparation for a procedure is **SOAPME**, which represents the following:

- S** = Size-appropriate suction catheters and a functioning suction apparatus (eg, Yankauer-type suction)
- O** = an adequate Oxygen supply and functioning flow meters or other devices to allow its delivery
- A** = size-appropriate Airway equipment (eg, bag-valve-mask or equivalent device [functioning]), nasopharyngeal and oropharyngeal airways, LMA, laryngoscope blades (checked and functioning), endotracheal tubes, stylets, face mask
- P** = Pharmacy: all the basic drugs needed to support life during an

emergency, including antagonists as indicated

M = Monitors: functioning pulse oximeter with size-appropriate oximeter probes,^{361,362} end-tidal carbon dioxide monitor, and other monitors as appropriate for the procedure (eg, noninvasive blood pressure, ECG, stethoscope)

E = special Equipment or drugs for a particular case (eg, defibrillator)

SPECIFIC GUIDELINES FOR INTENDED LEVEL OF SEDATION

Minimal Sedation

Minimal sedation (old terminology, “anxiolysis”) is a drug-induced state during which patients respond normally to verbal commands. Although cognitive function and coordination may be impaired, ventilatory and cardiovascular functions are unaffected. Children who have received minimal sedation generally will not require more than observation and intermittent assessment of their level of sedation. Some children will become moderately sedated despite the intended level of minimal sedation; should this occur, then the guidelines for moderate sedation apply.^{85,363}

Moderate Sedation

Moderate sedation (old terminology, “conscious sedation” or “sedation/analgesia”) is a drug-induced depression of consciousness during which patients respond purposefully to verbal commands or after light tactile stimulation. No interventions are required to maintain a patent airway, and spontaneous ventilation is adequate. Cardiovascular function is usually maintained. The caveat that loss of consciousness should be unlikely is a particularly important aspect of the definition of moderate sedation; drugs and techniques used should carry a margin of safety wide enough to render unintended loss of consciousness unlikely. Because the patient who

receives moderate sedation may progress into a state of deep sedation and obtundation, the practitioner should be prepared to increase the level of vigilance corresponding to what is necessary for deep sedation.⁸⁵

Personnel

THE PRACTITIONER. The practitioner responsible for the treatment of the patient and/or the administration of drugs for sedation must be competent to use such techniques, to provide the level of monitoring described in these guidelines, and to manage complications of these techniques (ie, to be able to rescue the patient). Because the level of intended sedation may be exceeded, the practitioner must be sufficiently skilled to rescue a child with apnea, laryngospasm, and/or airway obstruction, including the ability to open the airway, suction secretions, provide CPAP, and perform successful bag-valve-mask ventilation should the child progress to a level of deep sedation. Training in, and maintenance of, advanced pediatric airway skills is required (eg, pediatric advanced life support [PALS]); regular skills reinforcement with simulation is strongly encouraged.^{79,80,128,130,217–220, 364}

SUPPORT PERSONNEL. The use of moderate sedation shall include the provision of a person, in addition to the practitioner, whose responsibility is to monitor appropriate physiologic parameters and to assist in any supportive or resuscitation measures, if required. This individual may also be responsible for assisting with interruptible patient-related tasks of short duration, such as holding an instrument or troubleshooting equipment.⁶⁰ This individual should be trained in and capable of providing advanced airway skills (eg, PALS). The support person shall have specific assignments in the event of an emergency and current knowledge of the emergency cart inventory. The practitioner and all ancillary personnel should participate

in periodic reviews, simulation of rare emergencies, and practice drills of the facility's emergency protocol to ensure proper function of the equipment and coordination of staff roles in such emergencies.^{133,365–367} It is recommended that at least 1 practitioner be skilled in obtaining vascular access in children.

Monitoring and Documentation

BASELINE. Before the administration of sedative medications, a baseline determination of vital signs shall be documented. For some children who are very upset or uncooperative, this may not be possible, and a note should be written to document this circumstance.

DURING THE PROCEDURE The physician/dentist or his or her designee shall document the name, route, site, time of administration, and dosage of all drugs administered. If sedation is being directed by a physician who is not personally administering the medications, then recommended practice is for the qualified health care provider administering the medication to confirm the dose verbally before administration. There shall be continuous monitoring of oxygen saturation and heart rate; when bidirectional verbal communication between the provider and patient is appropriate and possible (ie, patient is developmentally able and purposefully communicates), monitoring of ventilation by (1) capnography (preferred) or (2) amplified, audible pretracheal stethoscope (eg, Bluetooth technology)^{368–371} or precordial stethoscope is strongly recommended. If bidirectional verbal communication is not appropriate or not possible, monitoring of ventilation by capnography (preferred), amplified, audible pretracheal stethoscope, or precordial stethoscope is required. Heart rate, respiratory rate, blood pressure, oxygen saturation, and

expired carbon dioxide values should be recorded, at minimum, every 10 minutes in a time-based record. Note that the exact value of expired carbon dioxide is less important than simple assessment of continuous respiratory gas exchange. In some situations in which there is excessive patient agitation or lack of cooperation or during certain procedures such as bronchoscopy, dentistry, or repair of facial lacerations capnography may not be feasible, and this situation should be documented. For uncooperative children, it is often helpful to defer the initiation of capnography until the child becomes sedated. Similarly, the stimulation of blood pressure cuff inflation may cause arousal or agitation; in such cases, blood pressure monitoring may be counterproductive and may be documented at less frequent intervals (eg, 10–15 minutes, assuming the patient remains stable, well oxygenated, and well perfused). Immobilization devices (protective stabilization) should be checked to prevent airway obstruction or chest restriction. If a restraint device is used, a hand or foot should be kept exposed. The child's head position should be continuously assessed to ensure airway patency.

AFTER THE PROCEDURE. The child who has received moderate sedation must be observed in a suitably equipped recovery area, which must have a functioning suction apparatus as well as the capacity to deliver >90% oxygen and positive-pressure ventilation (bag-valve mask) with an adequate oxygen capacity as well as age- and size-appropriate rescue equipment and devices. The patient's vital signs should be recorded at specific intervals (eg, every 10–15 minutes). If the patient is not fully alert, oxygen saturation and heart rate monitoring shall be used continuously until appropriate discharge criteria are met (see Appendix 1). Because sedation medications with a long half-life

may delay the patient's complete return to baseline or pose the risk of re-sedation, some patients might benefit from a longer period of less intense observation (eg, a step-down observation area where multiple patients can be observed simultaneously) before discharge from medical/dental supervision (see section entitled "Documentation Before Sedation" above).^{62,256,349,350} A simple evaluation tool may be the ability of the infant or child to remain awake for at least 20 minutes when placed in a quiet environment.²³⁸ Patients who have received reversal agents, such as flumazenil or naloxone, will require a longer period of observation, because the duration of the drugs administered may exceed the duration of the antagonist, resulting in re-sedation.

Deep Sedation/General Anesthesia

"Deep sedation" ("deep sedation/analgesia") is a drug-induced depression of consciousness during which patients cannot be easily aroused but respond purposefully after repeated verbal or painful stimulation (eg, purposefully pushing away the noxious stimuli). Reflex withdrawal from a painful stimulus is not considered a purposeful response and is more consistent with a state of general anesthesia. The ability to independently maintain ventilatory function may be impaired. Patients may require assistance in maintaining a patent airway, and spontaneous ventilation may be inadequate. Cardiovascular function is usually maintained. A state of deep sedation may be accompanied by partial or complete loss of protective airway reflexes. Patients may pass from a state of deep sedation to the state of general anesthesia. In some situations, such as during MRI, one is not usually able to assess responses to stimulation, because this would defeat the purpose of sedation, and one should assume that such patients are deeply sedated.

"General anesthesia" is a drug-induced loss of consciousness during which patients are not arousable, even by painful stimulation. The ability to independently maintain ventilatory function is often impaired. Patients often require assistance in maintaining a patent airway, and positive-pressure ventilation may be required because of depressed spontaneous ventilation or drug-induced depression of neuromuscular function. Cardiovascular function may be impaired.

Personnel

During deep sedation, there must be 1 person whose only responsibility is to constantly observe the patient's vital signs, airway patency, and adequacy of ventilation and to either administer drugs or direct their administration. This individual must, at a minimum, be trained in PALS and capable of assisting with any emergency event. At least 1 individual must be present who is trained in and capable of providing advanced pediatric life support and who is skilled to rescue a child with apnea, laryngospasm, and/or airway obstruction. Required skills include the ability to open the airway, suction secretions, provide CPAP, insert supraglottic devices (oral airway, nasal trumpet, LMA), and perform successful bag-valve-mask ventilation, tracheal intubation, and cardiopulmonary resuscitation.

Equipment

In addition to the equipment needed for moderate sedation, an ECG monitor and a defibrillator for use in pediatric patients should be readily available.

Vascular Access

Patients receiving deep sedation should have an intravenous line placed at the start of the procedure or

have a person skilled in establishing vascular access in pediatric patients immediately available.

Monitoring

A competent individual shall observe the patient continuously. Monitoring shall include all parameters described for moderate sedation. Vital signs, including heart rate, respiratory rate, blood pressure, oxygen saturation, and expired carbon dioxide, must be documented at least every 5 minutes in a time-based record. Capnography should be used for almost all deeply sedated children because of the increased risk of airway/ventilation compromise. Capnography may not be feasible if the patient is agitated or uncooperative during the initial phases of sedation or during certain procedures, such as bronchoscopy or repair of facial lacerations, and this circumstance should be documented. For uncooperative children, the capnography monitor may be placed once the child becomes sedated. Note that if supplemental oxygen is administered, the capnograph may underestimate the true expired carbon dioxide value; of more importance than the numeric reading of exhaled carbon dioxide is the assurance of continuous respiratory gas exchange (ie, continuous waveform). Capnography is particularly useful for patients who are difficult to observe (eg, during MRI or in a darkened room).^{64,67,72,90,96,110,159-162,164-166,167-170,372-375}

The physician/dentist or his or her designee shall document the name, route, site, time of administration, and dosage of all drugs administered. If sedation is being directed by a physician who is not personally administering the medications, then recommended practice is for the nurse administering the medication to confirm the dose verbally before administration. The inspired

concentrations of inhalation sedation agents and oxygen and the duration of administration shall be documented.

Postsedation Care

The facility and procedures followed for postsedation care shall conform to those described under “moderate sedation.” The initial recording of vital signs should be documented at least every 5 minutes. Once the child begins to awaken, the recording intervals may be increased to 10 to 15 minutes. Table 2 summarizes the equipment, personnel, and monitoring requirements for moderate and deep sedation.

Special Considerations

Neonates and Former Preterm Infants

Neonates and former preterm infants require specific management, because immaturity of hepatic and renal function may alter the ability to metabolize and excrete sedating medications,³⁷⁶ resulting in prolonged sedation and the need for extended postsedation monitoring. Former preterm infants have an increased risk of postanesthesia apnea,³⁷⁷ but it is unclear whether a similar risk is associated with sedation, because this possibility has not been systematically investigated.³⁷⁸

Other concerns regarding the effects of anesthetic drugs and sedating medications on the developing brain are beyond the scope of this document. At this point, the research in this area is preliminary and inconclusive at best, but it would seem prudent to avoid unnecessary exposure to sedation if the procedure is unlikely to change medical/dental management (eg, a sedated MRI purely for screening purposes in preterm infants).^{379–382}

Local Anesthetic Agents

All local anesthetic agents are cardiac depressants and may

TABLE 2 Comparison of Moderate and Deep Sedation Equipment and Personnel Requirements

	Moderate Sedation	Deep Sedation
Personnel	An observer who will monitor the patient but who may also assist with interruptible tasks; should be trained in PALS	An independent observer whose only responsibility is to continuously monitor the patient; trained in PALS
Responsible practitioner	Skilled to rescue a child with apnea, laryngospasm, and/or airway obstruction including the ability to open the airway, suction secretions, provide CPAP, and perform successful bag-valve-mask ventilation; recommended that at least 1 practitioner should be skilled in obtaining vascular access in children; trained in PALS	Skilled to rescue a child with apnea, laryngospasm, and/or airway obstruction, including the ability to open the airway, suction secretions, provide CPAP, perform successful bag-valve-mask ventilation, tracheal intubation, and cardiopulmonary resuscitation; training in PALS is required; at least 1 practitioner skilled in obtaining vascular access in children immediately available
Monitoring	Pulse oximetry ECG recommended Heart rate Blood pressure Respiration Capnography recommended	Pulse oximetry ECG required Heart rate Blood pressure Respiration Capnography required
Other equipment	Suction equipment, adequate oxygen source/supply	Suction equipment, adequate oxygen source/supply, defibrillator required
Documentation	Name, route, site, time of administration, and dosage of all drugs administered Continuous oxygen saturation, heart rate, and ventilation (capnography recommended); parameters recorded every 10 minutes	Name, route, site, time of administration, and dosage of all drugs administered; continuous oxygen saturation, heart rate, and ventilation (capnography required); parameters recorded at least every 5 minutes
Emergency checklists	Recommended	Recommended
Rescue cart properly stocked with rescue drugs and age- and size-appropriate equipment (see Appendices 3 and 4)	Required	Required
Dedicated recovery area with rescue cart properly stocked with rescue drugs and age- and size-appropriate equipment (see Appendices 3 and 4) and dedicated recovery personnel; adequate oxygen supply	Recommended; initial recording of vital signs may be needed at least every 10 minutes until the child begins to awaken, then recording intervals may be increased	Recommended; initial recording of vital signs may be needed for at least 5-minute intervals until the child begins to awaken, then recording intervals may be increased to 10–15 minutes
Discharge criteria	See Appendix 1	See Appendix 1

cause central nervous system excitation or depression. Particular weight-based attention should be paid to cumulative dosage in all children.^{118,120,125,383–386} To ensure that the patient will not receive an excessive dose, the maximum allowable safe dosage (eg, mg/kg) should be calculated before

administration. There may be enhanced sedative effects when the highest recommended doses of local anesthetic drugs are used in combination with other sedatives or opioids (see Tables 3 and 4 for limits and conversion tables of commonly used local anesthetics).^{118,125,387–400} In general, when administering local

TABLE 3 Commonly Used Local Anesthetic Agents for Nerve Block or Infiltration: Doses, Duration, and Calculations

Local Anesthetic	Maximum Dose With Epinephrine, ^a mg/kg		Maximum Dose Without Epinephrine, mg/kg		Duration of Action, ^b min
	Medical	Dental	Medical	Dental	
Esters					
Procaine	10.0	6	7	6	60–90
Chloroprocaine	20.0	12	15	12	30–60
Tetracaine	1.5	1	1	1	180–600
Amides					
Lidocaine	7.0	4.4	4	4.4	90–200
Mepivacaine	7.0	4.4	5	4.4	120–240
Bupivacaine	3.0	1.3	2.5	1.3	180–600
Levobupivacaine ^c	3.0	2	2	2	180–600
Ropivacaine	3.0	2	2	2	180–600
Articaine ^d	—	7	—	7	60–230

Maximum recommended doses and durations of action are shown. Note that lower doses should be used in very vascular areas.

^a These are maximum doses of local anesthetics combined with epinephrine; lower doses are recommended when used without epinephrine. Doses of amides should be decreased by 30% in infants younger than 6 mo. When lidocaine is being administered intravascularly (eg, during intravenous regional anesthesia), the dose should be decreased to 3 to 5 mg/kg; long-acting local anesthetic agents should not be used for intravenous regional anesthesia.

^b Duration of action is dependent on concentration, total dose, and site of administration; use of epinephrine; and the patient's age.

^c Levobupivacaine is not available in the United States.

^d Use in pediatric patients under 4 years of age is not recommended.

TABLE 4 Local Anesthetic Conversion Chart

Concentration, %	mg/mL
4.0	40
3.0	30
2.5	25
2.0	20
1.0	10
0.5	5
0.25	2.5
0.125	1.25

anesthetic drugs, the practitioner should aspirate frequently to minimize the likelihood that the needle is in a blood vessel; lower doses should be used when injecting into vascular tissues.⁴⁰¹ If high doses or injection of amide local anesthetics (bupivacaine and ropivacaine) into vascular tissues is anticipated, then the immediate availability of a 20% lipid emulsion for the treatment of local anesthetic toxicity is recommended (Tables 3 and 5).^{402–409} Topical local anesthetics are commonly used and encouraged, but the practitioner should avoid applying excessive doses to mucosal surfaces where systemic uptake and possible toxicity (seizures, methemoglobinemia) could result and to remain within the manufacturer's recommendations regarding allowable surface area application.^{410–415}

TABLE 5 Treatment of Local Anesthetic Toxicity

1. Get help. Ventilate with 100% oxygen. Alert nearest facility with cardiopulmonary bypass capability.
2. Resuscitation: airway/ventilatory support, chest compressions, etc. Avoid vasopressin, calcium channel blockers, β -blockers, or additional local anesthetic. Reduce epinephrine dosages. Prolonged effort may be required.
3. Seizure management: benzodiazepines preferred (eg, intravenous midazolam 0.1–0.2 mg/kg); avoid propofol if cardiovascular instability.
4. Administer 1.5 mL/kg 20% lipid emulsion over \sim 1 minute to trap unbound amide local anesthetics. Repeat bolus once or twice for persistent cardiovascular collapse.
5. Initiate 20% lipid infusion (0.25 mL/kg per minute) until circulation is restored; double the infusion rate if blood pressure remains low. Continue infusion for at least 10 minutes after attaining circulatory stability. Recommended upper limit of \sim 10 mL/kg.
6. A fluid bolus of 10–20 mL/kg balanced salt solution and an infusion of phenylephrine (0.1 μ g/kg per minute to start) may be needed to correct peripheral vasodilation.

Source: <https://www.asra.com/advisory-guidelines/article/3/checklist-for-treatment-of-local-anesthetic-systemic-toxicity>.

Pulse Oximetry

Newer pulse oximeters are less susceptible to motion artifacts and may be more useful than older oximeters that do not contain updated software.^{416–420} Oximeters that change tone with changes in hemoglobin saturation provide immediate aural warning to everyone within hearing distance. The oximeter probe must be properly positioned; clip-on devices are easy to displace, which may produce artifactual data (under- or overestimation of oxygen saturation).^{361,362}

Capnography

Expired carbon dioxide monitoring is valuable to diagnose the simple

presence or absence of respirations, airway obstruction, or respiratory depression, particularly in patients sedated in less-accessible locations, such as in MRI machines or darkened rooms.^{64,66,67,72,90,96,110,159–162,164–170,372–375,421–427} In patients receiving supplemental oxygen, capnography facilitates the recognition of apnea or airway obstruction several minutes before the situation would be detected just by pulse oximetry. In this situation, desaturation would be delayed due to increased oxygen reserves; capnography would enable earlier intervention.¹⁶¹ One study in children sedated in the emergency department found that the use of capnography reduced the incidence of hypoventilation and desaturation

(7% to 1%).¹⁷⁴ The use of expired carbon dioxide monitoring devices is now required for almost all deeply sedated children (with rare exceptions), particularly in situations in which other means of assessing the adequacy of ventilation are limited. Several manufacturers have produced nasal cannulae that allow simultaneous delivery of oxygen and measurement of expired carbon dioxide values.^{421,422,427} Although these devices can have a high degree of false-positive alarms, they are also very accurate for the detection of complete airway obstruction or apnea.^{164,168,169} Taping the sampling line under the nares under an oxygen face mask or nasal hood will provide similar information. The exact measured value is less important than the simple answer to the question: Is the child exchanging air with each breath?

Processed EEG (Bispectral Index)

Although not new to the anesthesia community, the processed EEG (bispectral index [BIS]) monitor is slowly finding its way into the sedation literature.⁴²⁸ Several studies have attempted to use BIS monitoring as a means of noninvasively assessing the depth of sedation. This technology was designed to examine EEG signals and, through a variety of algorithms, correlate a number with depth of unconsciousness: that is, the lower the number, the deeper the sedation. Unfortunately, these algorithms are based on adult patients and have not been validated in children of varying ages and varying brain development. Although the readings correspond quite well with the depth of propofol sedation, the numbers may paradoxically go up rather than down with sevoflurane and ketamine because of central excitation despite a state of general anesthesia or deep sedation.^{429,430} Opioids and benzodiazepines have minimal and variable effects on the BIS. Dexmedetomidine has minimal effect with EEG patterns, consistent

with stage 2 sleep.⁴³¹ Several sedation studies have examined the utility of this device and degree of correlation with standard sedation scales.^{347,363,432–435} It appears that there is some correlation with BIS values in moderate sedation, but there is not a reliable ability to distinguish between deep sedation and moderate sedation or deep sedation from general anesthesia.⁴³² Presently, it would appear that BIS monitoring might provide useful information only when used for sedation with propofol³⁶³; in general, it is still considered a research tool and not recommended for routine use.

Adjuncts to Airway Management and Resuscitation

The vast majority of sedation complications can be managed with simple maneuvers, such as supplemental oxygen, opening the airway, suctioning, placement of an oral or nasopharyngeal airway, and bag-mask-valve ventilation. Rarely, tracheal intubation is required for more prolonged ventilatory support. In addition to standard tracheal intubation techniques, a number of supraglottic devices are available for the management of patients with abnormal airway anatomy or airway obstruction. Examples include the LMA, the cuffed oropharyngeal airway, and a variety of kits to perform an emergency cricothyrotomy.^{436,437}

The largest clinical experience in pediatrics is with the LMA, which is available in multiple sizes, including those for late preterm and term neonates. The use of the LMA is now an essential addition to advanced airway training courses, and familiarity with insertion techniques can be life-saving.^{438–442} The LMA can also serve as a bridge to secure airway management in children with anatomic airway abnormalities.^{443,444} Practitioners are encouraged to gain

experience with these techniques as they become incorporated into PALS courses.

Another valuable emergency technique is intraosseous needle placement for vascular access. Intraosseous needles are available in several sizes; insertion can be life-saving when rapid intravenous access is difficult. A relatively new intraosseous device (EZ-IO Vidacare, now part of Teleflex, Research Triangle Park, NC) is similar to a hand-held battery-powered drill. It allows rapid placement with minimal chance of misplacement; it also has a low-profile intravenous adapter.^{445–450} Familiarity with the use of these emergency techniques can be gained by keeping current with resuscitation courses, such as PALS and advanced pediatric life support.

Patient Simulators

High-fidelity patient simulators are now available that allow physicians, dentists, and other health care providers to practice managing a variety of programmed adverse events, such as apnea, bronchospasm, and laryngospasm.^{133,220,450–452} The use of such devices is encouraged to better train medical professionals and teams to respond more effectively to rare events.^{128,131,451,453–455} One study that simulated the quality of cardiopulmonary resuscitation compared standard management of ventricular fibrillation versus rescue with the EZ-IO for the rapid establishment of intravenous access and placement of an LMA for establishing a patent airway in adults; the use of these devices resulted in more rapid establishment of vascular access and securing of the airway.⁴⁵⁶

Monitoring During MRI

The powerful magnetic field and the generation of radiofrequency emissions necessitate the use of special equipment to provide

continuous patient monitoring throughout the MRI scanning procedure.^{457–459} MRI-compatible pulse oximeters and capnographs capable of continuous function during scanning should be used in any sedated or restrained pediatric patient. Thermal injuries can result if appropriate precautions are not taken; the practitioner is cautioned to avoid coiling of all wires (oximeter, ECG) and to place the oximeter probe as far from the magnetic coil as possible to diminish the possibility of injury. ECG monitoring during MRI has been associated with thermal injury; special MRI-compatible ECG pads are essential to allow safe monitoring.^{460–463} If sedation is achieved by using an infusion pump, then either an MRI-compatible pump is required or the pump must be situated outside of the room with long infusion tubing so as to maintain infusion accuracy. All equipment must be MRI compatible, including laryngoscope blades and handles, oxygen tanks, and any ancillary equipment. All individuals, including parents, must be screened for ferromagnetic materials, phones, pagers, pens, credit cards, watches, surgical implants, pacemakers, etc, before entry into the MRI suite.

Nitrous Oxide

Inhalation sedation/analgesia equipment that delivers nitrous oxide must have the capacity of delivering 100% and never less than 25% oxygen concentration at a flow rate appropriate to the size of the patient. Equipment that delivers variable ratios of nitrous oxide >50% to oxygen that covers the mouth and nose must be used in conjunction with

a calibrated and functional oxygen analyzer. All nitrous oxide-to-oxygen inhalation devices should be calibrated in accordance with appropriate state and local requirements. Consideration should be given to the National Institute of Occupational Safety and Health Standards for the scavenging of waste gases.⁴⁶⁴ Newly constructed or reconstructed treatment facilities, especially those with piped-in nitrous oxide and oxygen, must have appropriate state or local inspections to certify proper function of inhalation sedation/analgesia systems before any delivery of patient care.

Nitrous oxide in oxygen, with varying concentrations, has been successfully used for many years to provide analgesia for a variety of painful procedures in children.^{14,36,49,98,465–493} The use of nitrous oxide for minimal sedation is defined as the administration of nitrous oxide of $\leq 50\%$ with the balance as oxygen, without any other sedative, opioid, or other depressant drug before or concurrent with the nitrous oxide to an otherwise healthy patient in ASA class I or II. The patient is able to maintain verbal communication throughout the procedure. It should be noted that although local anesthetics have sedative properties, for purposes of this guideline they are not considered sedatives in this circumstance. If nitrous oxide in oxygen is combined with other sedating medications, such as chloral hydrate, midazolam, or an opioid, or if nitrous oxide is used in concentrations >50%, the likelihood for moderate or deep sedation increases.^{107,197,492,494,495}

In this situation, the practitioner is advised to institute the guidelines for moderate or deep sedation, as indicated by the patient's response.⁴⁹⁶

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ABBREVIATIONS

AAP: American Academy of Pediatrics
AAPD: American Academy of Pediatric Dentistry
ASA: American Society of Anesthesiologists
BIS: bispectral index
CPAP: continuous positive airway pressure
ECG: electrocardiography
EEG: electroencephalogram/electroencephalography
EMS: emergency medical services
LMA: laryngeal mask airway
MRI: magnetic resonance imaging
OSA: obstructive sleep apnea
PALS: pediatric advanced life support

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Guidelines for Monitoring and Management of Pediatric Patients Before, During, and After Sedation for Diagnostic and Therapeutic Procedures: Update 2016

Charles J. Coté, Stephen Wilson, AMERICAN ACADEMY OF PEDIATRICS and
AMERICAN ACADEMY OF PEDIATRIC DENTISTRY

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Guidelines for Monitoring and Management of Pediatric Patients Before, During, and After Sedation for Diagnostic and Therapeutic Procedures: Update 2016

Charles J. Coté, Stephen Wilson, AMERICAN ACADEMY OF PEDIATRICS and
AMERICAN ACADEMY OF PEDIATRIC DENTISTRY

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American Academy of Pediatrics

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From: [Jasek, Jane F.](#)
To: [Harrell, Katie](#)
Subject: FW: ADA 77H Revisions (comment)
Date: Friday, July 01, 2016 6:33:06 AM

Jane Forsberg Jasek, RDH, MPA jasekj@ada.org
Manager, Dental Education and Licensure Matters
CDEL
312.440.2694

American Dental Association 211 E. Chicago Ave. Chicago, IL 60611 www.ada.org

From: Anthony Carroccia [<mailto:drtonycarroccia@yahoo.com>]
Sent: Thursday, June 30, 2016 10:40 PM
To: Jasek, Jane F.
Subject: ADA 77H Revisions

30 June 2016

Dr. Daniel J. Gesek, Jr., Chair
Council on Dental Education and Licensure
American Dental Association
211 East Chicago Ave.
Chicago, IL 60611

Sir:

I have read the revised Call for Comments on the "ADA Guidelines for... Sedation..." again this year with the same interest and professional curiosity.

I can only hope that you perhaps are in possession of my letter to your predecessor, Dr. James M. Boyle, III dated from 25 June 2015.

Let me tell you a bit about myself:

- 1) I am a general dentist.
- 2) I possess a Comprehensive Conscious Sedation Permit here in Tennessee since 2007.
- 3) I am still currently on the TDA Committee for Anesthesia, Sedation and Scope of Practice.
- 4) I have taught nitrous oxide-oxygen monitoring courses to assistants and administration to hygienists since 2010.
- 5) I now speak nationally on nitrous oxide (and other topics) having spoken last year at the ADA and will speak again on 15 July 2016 in Boston to the Academy of General Dentistry. My courses are peer reviewed by an author of "The Handbook of Nitrous Oxide and Oxygen

Sedation," not because I need to do such, but because I choose to do just that to give the best presentations possible.

I will write freely as I do not have a dog in the fight so to speak as the proposals do not affect me or my practice. The areas of concern are often repeated through the document so only one example of each is given.

Concerns:

Line 130. Why is titration defined here when the topic of nitrous oxide was introduced in the earlier minimal sedation category? Nitrous oxide is an inhalant that can be titrated to effect. I think there should be reconsideration to insert the concept right after it is first introduced then it can be reinforced again or restated in the moderate section when discussing the parenteral route.

Line 337. Nitrous oxide fail safes have been in place since 1962. It is not possible to purchase such a unit that has none. Sadly, mistakes do happen like the crossed lines at a University of Iowa pediatric dentistry clinic in Iowa City this past spring. Is this line necessary considering what Porter, Belmont, Accutron and Mada offer in the United States?

Line 340. Other gases is ambiguous for this section. A dentist of a certain disposition may wish to look at halogen based inhalants with this lack of clarity. With Criticare's Poet IQ (1 or 2) ways to monitor these gases exist. This must be changed to limit to nitrous oxide.

Line 404. BMI. BMI varies by sex and age. I feel this point cannot be made strenuously enough. When I was active duty in the U.S. Army, even the standards for physical fitness testing were different based upon these biological and chronological issues. The BMI of an 21 years old male will be quite different than that of a 53 years old female if we keep their height the same. I believe further emphasis is required.

Line 468. This makes no sense. Which patients would be precluded from capnography? Which procedures would be declared ineligible for capnography? What equipment invalidates the usage of capnography? Asking yourself those questions as you reflect on the passage, you will see it from another point of view. Without points of reference, examples, case studies, etc. the phrase is quite open to individual (mis)interpretation instead of creating one standard of care. It still needs clarification and/or revision, just like last year's version.

Line 1170. 14 hours plus cases for a nitrous oxide course is a historical benchmark. It is one that requires reconsideration. I'd suggest a simple survey to each dental school to see if this is taught for two days. If you are honest with yourself, the answer is not many, if any at all. As the top national lecturer on the topic, I can do it, but can others? I have not seen a national course that offers 14 hours plus experiences.

Most courses on sedation whether they are parenteral, review or enteral only spend about one hour on the topic. With 13 safety features that didn't exist in the 1800's and its wide safety index, are we being too harsh?

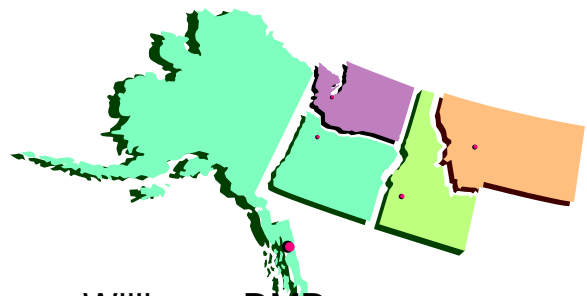
Kudos:

I applaud you for taking things from my earlier letter under consideration.

- 1) Elimination of post-operative equipment checks
- 2) I still love the ASA fasting guidelines
- 3) I love the elimination of route as a hang up that some have to level!

Sincerely Yours in Dentistry,

Anthony S. Carroccia, DDS, MAGD, ABGD



Laura Williams, DMD
Caucus Chair, ADA District XI

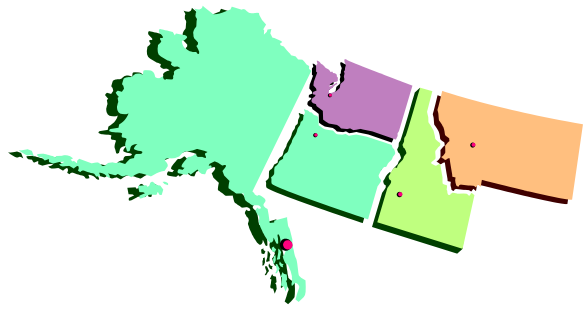
Anesthesia Committee
Council on Dental Education and Licensure
211 East Chicago Ave.
Chicago, IL 60611
July 1, 2016

Dear Committee Members,

As Chair of the District XI Caucus I am responding on behalf of District XI to your recent Call for Comment to the Proposed Revisions to the *ADA Guidelines for the Use of Sedation and General Anesthesia by Dentists* and *ADA Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students*.

After reading the committee's very brief explanation of their recommendations for the revisions it is difficult to follow the reasoning used in evaluating data and information when substantiating their decisions. There is confusion regarding which documents and data the committee members are using to document their decisions, especially with regard to the Capnography recommendations. There are 2 ADA Scientific Institute systematic reviews mentioned but no citations given. Additionally, there is no data support given for the recommendations regarding educational requirements or BMI assessments. Without a thorough explanation of the committee's data interpretations and references to that data it will be very difficult for delegates to responsibly vote on a resolution. Undoubtedly these questions will be raised at the House of Delegates and discussion will consume a significant amount of time.

The testimony received at the Open Hearing was not addressed by the committee members in the proposed amendments background giving the impression that it was not found to be useful. Response to that testimony would also allow delegates to more fully understand the committee's evaluation process and streamline the discussion at the House of Delegates.



The 11th District has asked for a copy of the CSA report and has yet to receive it. The *Report on the Risks and Benefits of Using Capnography in Dental Patients Undergoing Moderate Sedation* that is included in the background and resources released may well be the CSA report but it does not indicate that in the article or in the title. Again, this creates confusion for the delegates trying to follow the committee's process.

Thank you for the opportunity to comment on this very important issue.

Sincerely,

Laura Williams, DMD
Chair, 11th District Caucus



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June 30, 2016

Dr. Daniel J. Gesek, Jr., Chair
Council on Dental Education and Licensure
American Dental Association
211 East Chicago Avenue
Chicago, IL 60611
Via email, care of: JasekJ@ada.org

Dear Dr. Gesek:

The Virginia Board of Dentistry (the Board) appreciates this opportunity to comment on the Council's proposed revisions to the ADA Guidelines for the Use of Sedation and General Anesthesia by Dentists and the ADA Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students. These guidelines are an invaluable resource for the Board. In addition, the Guidelines for Teaching are incorporated by reference in the Board's Regulations Governing the Practice of Dentistry as Virginia's education standard for issuance of conscious/moderate sedation permits and deep sedation and general anesthesia permits.

We support, and are especially appreciative of, the Council's proposed language in:

- Lines 468 – 472 and 595 - 598 to require monitoring end-tidal CO2 for moderate sedation and for deep sedation and general anesthesia.
- Lines 1362 - 1365 to require 60 hours of instruction plus 20 patient experiences for moderate sedation courses regardless of the route of administration.
- Lines 1366 – 1372 to require certification of the competence of each participant, additional experience to achieve competence, and the maintenance of records of instruction and clinical experiences to capture the number of patients managed by each participant.
- Lines 402 – 409 and 523 – 530 to include an assessment of Body Mass Index (BMI) as a part of a pre-procedural workup.

The Board also wants to inform the Council of three changes it has advanced in our sedation and anesthesia regulations which are germane to the Council's proposed amendments. The first one is to separate the administration of only nitrous oxide from the provisions for minimal sedation

into a new section on the administration of inhalation analgesia. This action will facilitate having a clear delineation in equipment and monitoring requirements between inhalation analgesia alone, and minimal sedation with or without nitrous oxide. The second change is to limit intraoperative monitoring to continuous visual observation of responsiveness, color, and respiration for both inhalation analgesia and minimal sedation with or without nitrous oxide. The third change is to require the recording of patients' height and weight and, if appropriate, Body Mass Index (BMI).

The Board commends the Council's commitment to patient safety and its thoughtful and well-reasoned development of both guidelines. The proposed changes are needed to foster a common understanding of the steps needed to promote both the well-being of patients, and the competence of dentists.

The Board looks forward to learning of the Council's success in advancing its proposals. Please contact me at sandra.reen@dhp.virginia.gov if you have any questions about these comments.

Sincerely,

A handwritten signature in dark ink, appearing to read "Sandra K. Reen". The signature is fluid and cursive, with the first name "Sandra" being more prominent than the last name "Reen".

Sandra K. Reen
Executive Director
Virginia Board of Dentistry



July 1, 2016

Dr. Daniel J Gesek, Jr., Chair
Council on Dental Education and Licensure
American Dental Association
211 East Chicago Avenue
Chicago, IL 60611

Dear Dr. Gesek:

The California Dental Association (CDA) has worked with a group of representatives from California dental specialty groups since 2013 to provide comments on proposed revisions to ADA Guidelines for the Use of Sedation and General Anesthesia by Dentists and the ADA Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students. CDA appreciates the Council on Dental Education and Licensure's work on the guidelines and supports revisions that reflect evidence and contemporary practice.

Regarding the current proposal, CDA's concern relates to the document's handling of pediatric sedation. The current proposal recommends removing references to pediatric sedation and focusing its guidance on adults, citing ADA's reliance on the AAP- AAPD Guidelines for Sedation of Children Undergoing Sedation for Diagnostic and Therapeutic Procedures.

However, the deletion of "12 years of age and under," in the guideline introduction (Lines 23-25), creates ambiguity with regard to the age ADA considers the onset of adulthood and for which ADA guidelines apply. As the AAP-AAPD Guidelines state that they apply to pediatric patients age 21 and under, absent a statement to the contrary, many may interpret that age 21 would apply here. Further, as there is no discussion of the physiologic changes that are used to stratify risk related to pediatric sedation or other evidence in support of a policy change with regard to the age for the onset of adulthood, CDA believes clarification is essential.

Given these concerns, CDA recommends the following for lines 15-18:

The administration of local anesthesia, sedation, and general anesthesia is an integral part of dental practice. The American Dental Association is committed to the safe and effective use of these modalities by appropriately educated and trained dentists. The purpose of these guidelines is to assist dentists in the delivery of safe and effective sedation and anesthesia to persons 13 years of age and older.

This recommendation is consistent with current California law, recognizes that different states specify different ages as the age of majority, and acknowledges the physiologic considerations that are a basis for age stratification related to sedation.

CDA respects the work of the council and appreciates the opportunity to contribute our concerns and recommendations. If you have questions, please do not hesitate to contact Gayle Mathe, CDA staff, at Gayle.Mathe@cda.org or 916.554.4995.

Sincerely,

A handwritten signature in cursive script that reads "Gayle Mathe". The ink is dark and the signature is fluid.

Gayle Mathe
Public Affairs

Dr. Daniel Gesek, Jr., Chair
Council on Dental Education and Licensure
American Dental Association
211 East Chicago Avenue
Chicago, IL 60611

June 30, 2016

Dear Dr. Gesek,

As an Oral and Maxillofacial Surgeon practicing in Rhode Island, we would like to take this opportunity to share with the committee some of the issues that have presented themselves as the Rhode Island Board of Examiners in Dentistry attempts to formulate regulations regarding ambulatory anesthesia in the dental office. The Board utilized the ADA Guidelines for the Use of Sedation and General Anesthesia by Dentists and Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students for direction in drafting, particularly with respect to moderate sedation. There is significant ambiguity in the educational recommendations provided by these documents for practitioners seeking permits/privileges to administer anesthesia under their dental licenses, which makes state board assessment and evaluation for moderate sedation permits especially difficult.

The Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students line 637-643 state the pre-doctoral education, which are CODA accredited programs, should provide instruction exposure and/or experience. Proficiency training in moderate sedation is obtained on a graduate level. The guidelines on a post doctorate level education do not distinguish between CODA accredited programs and education obtained through continuing education ("CE") courses. Line 829 defines competency and Lines 831-832 define proficiency as well as the

requirement for assessment and documentation of a dentist's competency. Lines 856-877 define education courses.

The issue of applicants requesting Moderate Sedation permits with CE courses, which at best will offer competency, needs to be addressed to avoid dentists spending time and money on courses that may not lead to fulfilling the competency requirement in moderate sedation. The ADA needs to decide if continuing education courses have a place in qualifying doctors in Moderate Sedation, and if they do, identify the programs that meet the requirements.

The bottom-line is the education requirement must be better defined. Simply stating 60 hours on instruction is not specific enough. Continuing education alone does not offer the same structure and training of a CODA approved advanced education program. Although CE's are beneficial, they can't replace the composition of an advanced education program where required proficiency of the participant can be assessed.

While the definition of moderate sedation is well defined; the reality of administering sedation is a variable. With multiple sedation techniques, medications, pediatric and ASA statuses, staffing and faculty requirements, we need to ensure education and training of our doctors in sedation to meet all these demands to guarantee patient safety.

Not all advanced education programs offer training in sedation. Furthermore not all programs offer hands-on experience or actual IV training. Graduates must be proficient in actual clinical cases and the handling of emergencies. The programs that offer sedation competency/proficiency must be recognized by the ADA. These programs then can offer a certificate in Moderate Sedation to each graduate that has met the requirements.

The certificate obtained from an accredited program certified by the ADA in Moderate Sedation can then be submitted to the applicable state licensing board to support an individual's application for a moderate sedation permit. An ADA certification would allow licensing boards to assess the competency and education qualifications of an applicant and offer guidance in course selection to those dentists seeking to obtain proficiency in Moderate Sedation.

Another area that requires an immediate decision by the ADA is capnography. Recommendations from the American Society of Anesthesiologists, the American Association of Oral and Maxillofacial Surgeons and most recently, the American Academy of Pediatrics and American Academy of Pediatric Dentistry are all fairly in sync with respect to the use of capnography in anesthesia. You also see these groups speaking out in similar fashion on the need for certain emergency reversal agents to be present in every facility where Moderate Sedation is being administered. This is also true with the need to have staff with appropriate advanced life support training as well as necessary airway recovery equipment. It is time for the American Dental Association to recognize its responsibility. For as long as the American Dental Association fails to take a leadership role, establish guidelines, and stand as equals with other healthcare specialties, our profession is going to remain under attack through both public scrutiny and those medical providers that don't believe anesthesia should be administered in a dental office. With each and every adverse event that occurs in this country while these guidelines are not written it is all dental providers of anesthesia that are going to be in the spotlight not just the one involved. It is better to be proactive than reactive.

We fully support the efforts of your council to provide safe and effective sedation guidelines and recognize that other states are waiting on the sidelines, just as Rhode Island is, for further guidance from our national association on this very important topic.

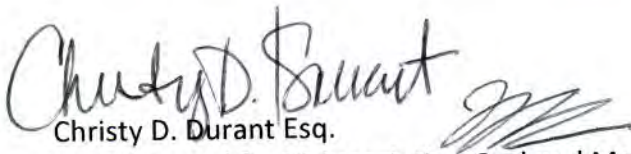
In summary, we not only believe capnography should be required for moderate sedation, that it is time for the ADA to set forth an specific certified education requirements in Moderate Sedation that each provider shall be required to have in order to administer moderate sedation in their offices.

Thank you for your time and consideration of these comments. Should you have any questions Please do not hesitate to contact me.

Sincerely,



Martin Elson, DDS
Immediate Past President
RI Association Oral and Maxillofacial Surgeons



Christy D. Durant Esq.
Legal Counsel for RI Association Oral and Maxillofacial Surgeons



TEXAS ACADEMY of GENERAL DENTISTRY

July 1, 2016

Dr. Daniel J Gesek, Chair
Council on Dental Education and Licensure (CDEL)
American Dental Association (ADA)
211 East Chicago Avenue
Chicago, IL 60611

RE: Review of the ADA *Guidelines for the Use of Sedation and General Anesthesia by Dentists* ("Use Guidelines") and *Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students* ("Teaching Guidelines")

Dear Dr. Gesek,

On behalf of the Texas Academy of General Dentistry (TAGD), I thank you for the opportunity to provide comments on the proposed amendments to the ADA Sedation "Use Guidelines" and "Teaching Guidelines." TAGD facilitated this review through its Advocacy Council.

The TAGD Advocacy Council expressed some specific and important concerns with the proposed revisions provided in the documents. I would like to share them with you:

1. "The dentist must monitor ventilation and/or breathing by monitoring end-tidal CO₂ unless precluded or invalidated by the nature of the patient, procedure or equipment. In addition, ventilation should be monitored by continual observation of qualitative signs, including chest excursion and auscultation of breath sounds with a precordial or pretracheal stethoscope." (P. 10, Lines 468-471)

TAGD Comment/Recommendation:

The mandate for capnography remains for moderate sedation even after Resolution 77H-15 from ADA House of Delegates called for "elimination." Now, the proposed guidelines not only include capnography but the addition of auscultation as well. The ADA Scientific Committee conducted a literature review to determine if scientific literature substantiated use of capnography during moderate sedation. The Scientific Committee returned an analysis showing improved outcomes during moderate sedation when end-tidal CO₂ was monitored. However, the majority of the studies cited utilized patient populations, drugs and techniques which do not represent moderate sedation as it is practiced in dentistry. For example, many of these studies utilized propofol and ketamine. These drugs specifically do not meet the ADA definition of appropriate moderate sedation agents and are prohibited by more than 40 state boards of dentistry for dentists administering moderate sedation. In addition, CDEL's guideline draft states, "nitrous oxide/oxygen when used in combination with sedative agent(s) may produce minimal, moderate, deep sedation or general anesthesia". Yet there is no mandate for monitoring end-tidal CO₂ during minimal sedation.

2. “Moderate Sedation (enteral and parenteral) Course Duration and Documentation: The Course must include: A minimum of 60 hours of instruction plus administration of sedation for at least 20 individually managed patients.” (P. 28, Lines 1363-1366)

TAGD Comment/Recommendation:

The previous guidelines for enteral moderate sedation courses included “A minimum of 24 hours of instruction, plus management of at least 10 adult case experiences” (P. 28, Lines 1348-1353). Now, enteral and parenteral both require the same training of 60 hours and 20 managed cases. There is no scientific evidence to conclude enteral sedation didactic hours should be more than doubled to 60 hours and 20 managed patient cases.

3. Patient pre-operative evaluations are not consistent throughout the document as recommended in resolution 77H-15. (Lines P. 7, 312-322, P. 9, 414-426, P. 8, 397-409, P. 11, 518-550)

TAGD Comment/Recommendation:

There are no risk assessment guidelines in place for minimal sedation patients. While we feel the guidelines should reflect the appropriate patient evaluation for the proposed level of sedation, if a BMI is considered a pertinent medical evaluation consideration, it should also be evaluated for minimal sedation.

4. All references to guidelines for the sedation of children have been deleted. (Lines P. 3, 107-112, P. 8, 389-393, P. 11, 510-514, P. 11, 549-550, P. 13, 627-638, P. 23, 1097)

TAGD Comment/Recommendation:

The proposed revisions contain no ADA guidance on pediatric sedation for the general dentist. All pediatric sedation references have been removed and dentists are referred to AAP/AAPD guidelines. New AAP/AAPD guidelines are yet to be released and public comment on ADA guidelines will end prior to release of the AAPD guidelines. It is the ADA’s responsibility and duty to provide guidance to its members regarding both children and adult patients requiring sedation.

We also strongly feel it is the ADA’s responsibility to define the age of the pediatric patient. In the current AAPD guidelines, the “pediatric” dental patient is up to 21 years of age. As general dentists, we assume it is 12 years of age and under, but feel it should be clarified by the ADA. TAGD would recommend 13 years of age and older as the adult patient when administering enteral and parenteral sedation.

Numerous places in these two documents reference the fact that ADA supports the joint AAP/AAPD Guidelines for sedation of children. Unfortunately, the current AAP/AAPD document does not address recommended CE training for the general dentist. Due to the fact that there are not enough residency trained pediatric dentists to manage all of the children in the US requiring sedation, general practitioners are put into this role. Since there are no guidelines for non-pediatric dentist training in pediatric sedation, states are left to come up with their own requirements. This ranges nationally from full moderate sedation training (60 hours/20 cases) to a two-day weekend course with no clinical experiences to no requirement of training at all. Consequently, we continue to see tragedies in dental offices involving children.

We feel the ADA should specify the course content and clinical learning experience that are adequate for dentists to provide minimal and moderate sedation to pediatric patients in order to set the standard for the profession.

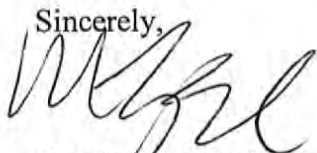
5. "A log of equipment maintenance, including monitors and anesthesia delivery system, must be maintained. A pre-procedural check of equipment for each administration of sedation must be performed." (P. 7, Lines 334-35, P. 9, Lines 438-39, P. 12, Lines 568-569)

TAGD Comment/Recommendation:

There are no established guidelines for frequency of monitor and anesthesia delivery system maintenance, ranging from minimal sedation with nitrous oxide to general anesthesia inhalational equipment. Modern vital signs monitor do not require maintenance. In addition, there needs to be clear guidelines for what would constitute a pre-procedural check.

Thank you again for the opportunity to provide these comments.

Sincerely,



Brooke Elmore, DDS, FAGD
Texas Academy of General Dentistry
Advocacy Council Chair

Cc: TAGD Executive Committee



July 1, 2016

Dr. Daniel J. Gesek, Jr., Chair
Council on Dental Education and Licensure
American Dental Association
211 East Chicago Avenue
Chicago, IL 60611

Dear Doctor Gesek:

As a member of the community of interest, the American Dental Society of Anesthesiology (ADSA) appreciates the opportunity to respond to the Call for Comments requested by the American Dental Association's Council on Dental Education and Licensure (CDEL) regarding the ADA's *Guidelines for the Use of Sedation and General Anesthesia by Dentists* and the ADA's *Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students*. The ADSA feels overall, that the proposed revisions of both documents are sensible, clear, and the framework is sound. We are especially appreciative of the committee's efforts to clarify the topics concerning moderate sedation education and strongly support the revisions relative to training requirements for moderate sedation. Furthermore, while we believe the evidence presented by CDEL for requiring capnography during moderate sedation as practiced in dentistry is only marginally supportive, we believe it is prudent to monitor end-tidal CO₂, particularly when verbal communication with the patient is not possible, to help ensure patient safety.

The ADSA has concerns with a few of the suggested revisions. In the interests of time and space we have not addressed all of our concerns in this document, but instead have focused on several specific recommendations the ADSA believes are the most critical for your consideration. They are as follows:

1. Lines 23-25: The ADSA continues to be concerned with the absence of appropriate training guidelines for the sedation of children 12 years and younger by dentists not residency trained in pediatric dentistry or deep sedation/general anesthesia. The absence of these guidelines in both this document as well as the AAP/AAPD document, which the ADA Guidelines reference for pediatric sedation, leaves regulatory agencies with little guidance in formulating regulations which protect children in this age bracket while still allowing adequate access to care. We respectfully request that CDEL revisit this issue to establish sedation training criteria for sedation of children with the full participation of the communities of interest in dentistry, particularly the pediatric dental community.
2. Lines 468-479, 595-597, 614-615: The ADSA is also very concerned regarding differing standards of ventilation monitoring present between the proposed ADA Guidelines and the recently released *Guidelines for Monitoring and Management of Pediatric Patients Before, During, and After Diagnostic and Therapeutic Procedures: Update 2016* produced jointly by the American Academy of Pediatrics (AAP) and the American Academy of Pediatric Dentistry



(AAPD). The proposed ADA guidelines for monitoring ventilation during moderate sedation, which require capnography, are at odds with the just published AAP/AAPD guidelines which require ventilation monitoring only when bidirectional verbal communication is not possible. In this circumstance, capnography is preferred but monitoring of breath sounds is also acceptable. The differences in the two standards can only lead to confusion for patients, regulatory agencies and practitioners. There must be only one unified guideline for sedation and anesthesia care for all of dentistry. An effort at consensus must be undertaken by CDEL and AAPD to ensure consistency between both guidelines and help ensure patient safety.

3. Lines 334, 438, and 568: The ADSA believes these lines requiring maintenance logs and calibration are too prescriptive. We suggest the following language be substituted:
"Documentation of compliance with manufacturer's recommended maintenance of monitors, anesthesia delivery systems and other anesthesia related equipment should be maintained."

4. Lines 448-449: The ADSA believes that requiring a secure intravenous access site is neither necessary nor practical during parenteral sedation involving solely intramuscular or intranasal drug administration. We also recognize that not all dentists trained in intramuscular and intranasal parenteral sedation are fully adept at intravenous access. Therefore, we recommend this line be re-written to read: "When parenteral sedation is administered, intravascular/intraosseous access should be available until the patient meets discharge criteria."

5. Lines 397-409 and 518-530: The ADSA continues to believe that consistency and clarity help ensure patient safety. For this reason, we believe the sections discussing patient evaluations for moderate sedation and deep sedation/general anesthesia should read the same for consistency. This would require language concerning review of NPO status be placed into the section on moderate sedation.

The ADSA is grateful for the opportunity to comment and recommend possible changes to the ADA's Anesthesia Guidelines documents and would be happy to discuss any questions with the Council at their convenience.

Sincerely,

Kenneth L. Reed, DMD

Kenneth L. Reed, DMD
President, ADSA

David Sarrett
Chair, Anesthesia Committee
July 2, 2016

Comments on Proposed ADA Anesthesia Guidelines

Dr. Sarrett,

First of all, let me thank the Anesthesia Committee for taking the time to review and propose updates to the 2012 ADA Guidelines for the Use of Sedation and General Anesthesia by Dentists and ADA Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students. The safe and effective use of sedation and anesthesia is an important part of dental care, and patient safety is paramount in the provision of that care. Guidelines supported by sound science are a useful aid in protecting our patients.

I am writing these comments with the intent of asking questions about the proposed changes to the anesthesia guidelines. My purpose is to help clarify the intent and language of the update to the current 2012 guidelines so that discussion in Reference Committees and on the floor of the HOD is kept to a reasonable minimum. By providing these comments now, it is hoped that this will help to address that purpose. I am not making any judgement, but only trying to clarify to the reader of these documents what the statement is intended to mean. Thank you for this opportunity to comment.

First of all there appears to be two different deadlines for comment. These do not have line numbers, but appear on pages 2, 3 and 17 listing July 4, 2016 and July 15, 2016. This may lead to confusion as to just when the guidelines are actually due.

I believe a written explanation of why the 2012 Guidelines are being used rather than the 2015 Resolution language would help in answering a number of questions between now and the HOD. While the anesthesia committee has shared this with me on our conference call June 26, 2016, other communities of interest may not be aware. Communication from the committee in my opinion can not be overdone.

1. It appears that there is an acceptable option to NOT utilize capnography in certain situations. ("The dentist must observe chest excursions continually. 467 • The dentist must monitor ventilation and/or breathing by monitoring end-tidal CO₂ unless precluded or 468 invalidated by the nature of the patient, procedure or equipment In addition: ventilation should be 469 monitored by continual observation of qualitative signs, including chest excursion and auscultation of 470 breath sounds with a precordial or pretracheal stethoscope. This can be accomplished by auscultation of 471 breath sounds, monitoring end-tidal CO₂ or by verbal communication with the patient.") And later: ("Intubated patient: End-tidal CO₂ must be continuously monitored and evaluated. 594 • Non-intubated patient: Breath sounds via auscultation and/or e End-tidal CO₂ must be continually 595 monitored and evaluated unless precluded or invalidated by the nature of the patient, procedure, or 596 equipment. In addition, ventilation should be monitored and evaluated by continual observation of 597 qualitative signs, including auscultation of breath sounds with a precordial or pretracheal stethoscope.")To me, this is not a mandate as much as a strong recommendation. In my opinion, at least one example of what sort of circumstance would allow for not using the capnography would be helpful to the reader. A similar situation exists for BP monitoring in lines 476-478.

2. Also on the opening page: To state that there should be no difference in training requirements for oral or IV moderate sedation, and then to allow different training methods does not seem to be an accurate statement. I think what is meant is that the training should assure the ability of the provider to recover a patient who has an airway issue or goes into a deeper level of sedation than intended. If a dentist who chooses to only provide oral sedation never does an IV case during training , and a dentist who chooses to provide IV cases does no enteral cases during training, they will not have had the same training. Confusion may result in using the proposed statements. Lines 1362-1372: ("Moderate Parenteral Sedation Course Duration and Documentation: 1362 The Course must include: 1363 • A minimum of 60 hours of instruction plus administration of sedation for at least 20 individually managed 1364 patients. 1365 • Certification of competence in moderate sedation technique(s). 1366 • Certification of competence in rescuing patients from a deeper level of sedation than intended including 1367 managing the airway, vascular access and reversal medications. 1368 • Provision by course director or faculty of additional clinical experience if participant

competency has not been 1369 achieved in time allotted. 1370 • Records of instruction and clinical experiences (i.e., number of patients managed by each participant in each 1371 modality/ route) that are maintained and available for participant review. "). Personal communication on the conference call June 26, 2016, Dr. Gesek stated that there was no directive on whether the cases were enteral or IV, or in other words all cases could be one or the other, or a combination--that it was up to the individual dentist to determine. I infer that it could also include enteral/inhalation, IV/inhalation as well, and the committee may choose to clarify this distinction too. A detailed clarification of what is allowed and what is mandated would in my opinion be helpful to the reader of these documents. I think the informed reader might also question whether or not the same number of hours would be required to become educated and competent on enteral only moderate sedation techniques versus IV moderate sedation techniques. In my opinion an equal amount of instruction to become competent in rescue methods whether enteral or IV is reasonable and a separate competency.

3. While I understand that sedation is a continuum, lines 64-67 when compared to lines 118-120, do not appear to be clinically different by these descriptions. There seems to be no descriptive differentiation between minimal sedation and moderate sedation. Clarification of the difference would be helpful to the readers and instructors of these documents.

4. What about medical emergencies that may arise that are not the consequence of treatment but occur during anesthesia/sedation administration? Perhaps "during the course" instead of consequence should be considered. (Lines 734-735)

5. Additional sources of information should be listed as to location for the convenience of the reader and completeness of the document. (Lines 485, 647-648, 1414-1415)

6. In my pharmacology classes, dose is individually dependent upon many factors, including body size and liver and kidney function among others. Arbitrary definition of moderate sedation based on exceeding the MRD only does not seem pharmacologically reasonable in all circumstances. Can you explain? At the face of it, this seems appropriate for the 70 Kg Goodman and Gilman patient, but somewhat arbitrary to not allow for patient variability. (Lines 816-817)

7. So from the October 2014 ASA Definitions and Examples--Moderate disease is not in this list. Moderate disease that is well controlled would be considered ASA II? (Lines

951-959). For example, hypertension is classified as pre, stage 1, & stage 2. Higher than stage 2 I would consider severe. If a patient without medication is stage 2, and controlled to stage 1, then they would be ASA II?

8. This update course definition would seem to not allow those "grandfathered" in by previous training and experience to update their skills, since they have not all had the stated training described in these proposed guidelines. (Lines 986-990)

9. It seems reasonable to expect that the level of certification and training of the instructor or director of a training program be at least equal to the level of training of being taught. This is not the same for minimal sedation training course directors (trained at moderate level or higher) as it is for moderate sedation training course directors (trained at moderate level or higher). (Lines 1182-1186, 1394-1399). Why the difference required?

In summary, let me thank you again for taking on the task of updating the anesthesia guidelines. It is a necessary and significant undertaking. I hope that you will find these comments and questions helpful in finalizing the recommendations of the committee.

Sincerely,

Rickland G. Asai

Michael J. Hoffmann, DDS
The Dental Anesthesia Center
950 Francis Place Suite 305
St. Louis, MO 63105

Dr. Daniel J Gesek, Jr. Chair
Council on Dental Education and Licensure
American Dental Association
211 East Chicago Avenue
Chicago, IL 60611

Re: Propose revisions to Sedation Guidelines

Dear Council;

I strongly support the proposed changes in the Sedation Guidelines for Use and Teaching. They are long overdue.

There has never been, to my research, an adult oral sedation death in a dental office until someone proposed a multiple oral dosing technique and began teaching it nation wide. Since approximately 2005, there have multiple oral sedation deaths in the United States. In the St Louis area there has been two deaths that I have provided expert opinion. Currently, I am involved in two enteral sedation death cases outside my state. One is a a 20 year old male in the Atlanta area and the other is an elderly male in Alabama. Both deaths were very preventable. Both patients that died in St Louis and the patient that died in Atlanta received flumazenil. Very few deaths and accidents make the news or are disclosed to the public.

These deaths were due to several factors

1. An unpredictable sedation technique
2. Education and certification by dentists with no formal training in sedation.
3. Providing a sedation technique that has been poorly researched. However, one study on the technique points out that the patients are being sedated to levels deeper than intended.
4. Use of and dependence on reversal agents in a manor which has been shown to produce poor outcomes. Too much emphasis has been placed on reversal agents by many of these instructors. The entire emphasis should be on prevention and keeping patients verbal. If a patient becomes unresponsive, airway management should be key and not reversal agents.

Most of the deaths that occurred in these states were already in violation of state laws. The problem begins with the training and the misinformation that is being presented.

The use of Capnography is a “no brainer”. I have been using Capnography for all level of sedation and anesthesia for years. Capnographs are now available for as little as \$600.00. The

cost of disposable is negligible. When considering the capnograph vs the pretracheal stethoscope, the stethoscopes use is limited during dentistry due to background noise of the dental handpiece and ultrasonic scaler. Data is easily captured using the disposable tip for a flowable syringe placed through the side of a nasal hood connected to the capnograph tubing. Assistants can be easily taught how to read the capnograph in less than an hour.

I strongly support the amendments to the Sedation Guidelines. Thank you for reaching out to the membership for input.

Sincerely,

Michael J. Hoffmann, DDS, FAGD, FICD, FACD
Diplomat, American Dental Board of Anesthesiology
Diplomat, National Dental Board of Anesthesiology



July 4, 2016

Dr. Daniel J. Gesek, Jr., Chair
Council on Dental Education and Licensure (CDEL)
American Dental Association (ADA)
211 East Chicago Avenue
Chicago, IL 60611

RE: Comment of the Academy of General Dentistry (AGD) on Proposed Revisions to the *ADA Guidelines for the Use of Sedation and General Anesthesia by Dentists and ADA Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students* (the “Sedation Guidelines”)

Dear Dr. Gesek,

On behalf of the AGD, I am pleased to present the following written comments in response to CDEL’s Proposed Revisions to the ADA Sedation Guidelines. All page and line numbers referenced herein refer to the page and line numbers of the Proposed Revisions.

In this letter, we address those proposed revisions that will likely be of the greatest adverse impact to general dentists and their patients. Our decision not to address some of the other proposed changes at this time does not necessarily constitute AGD’s acceptance of those changes.

The mandate for monitoring end tidal CO₂ for moderate sedation
Page 9, Lines 444-445; and Page 10, Lines 468-472

NOTE: Per 2015 Resolution 77H-2015, the ADA HOD had requested CDEL, in collaboration with the Council on Scientific Affairs, to consider:

Elimination of the mandate for monitoring end tidal CO₂ for moderate sedation to allow for the choice of options such as: continuous use of a precordial or pretracheal stethoscope, continuous monitoring of end tidal carbon dioxide, and continual verbal communication with the patient.

In its response to the ADA’s request, CDEL states:

Per a detailed report by the ADA Science Institute on two systematic reviews, the Council continues to support its proposed mandate for monitoring end-tidal CO₂ during moderate sedation. [Lines 468-472 and 595-598].

CDEL cited lines 595-598 in error, as lines 595-598 are in the **Deep Sedation and General Anesthesia** section, not the **Moderate Sedation** section.

Additionally, we understand that the “detailed report by the ADA Science Institute on two systematic reviews” refers to the document, *Risks and Benefits of Using Capnography In Dental Patients Undergoing Moderate Sedation*, posted on the website, www.ada.org/en/education-careers/events/open-hearing-on-anesthesia-and-sedation-guidelines.

AGD Recommendations:

1. Revise Page 9, Lines 444-445 as follows: “The equipment necessary for monitoring ~~end-tidal CO₂~~ and auscultation of breath sounds must be immediately available;”
2. Continue to retain Page 10, Line 465 (“Oxygen saturation must be evaluated by pulse oximetry continuously”); and
3. Revise Page 10, Lines 468-472 as follows: “The dentist ~~must monitor ventilation and/or breathing by monitoring end-tidal CO₂ unless precluded or invalidated by the nature of the patient, procedure or equipment~~ In addition, should monitor ventilation should be monitored by continual observation of qualitative signs, including chest excursion and auscultation of breath sounds with a precordial or pretracheal stethoscope. In addition, the dentist may monitor ventilation and/or breathing by monitoring end-tidal CO₂ unless precluded or invalidated by the nature of the patient, procedure or equipment.”

Rationale:

- I. Systematic reviews fail to support an end-tidal CO₂ requirement for moderate sedation

The two systematic reviews referenced by CDEL, CSA, and the ADA Science Institute, do not support a mandate for end-tidal CO₂ during moderate sedation in an open airway system.

The ADA Science Institute produced additional meta-analyses with the stated intent of “updating” the two reviews with its own findings, in an effort to manufacture supporting data that did not exist in the reviews themselves. However, these new meta-analyses fail to cure the shortfalls of the original systematic reviews, Waugh et al. (2011) and Conway et al. (2016).

Waugh et al. (2011)¹

Waugh et al. (2011) was authored by Drs. Epps and Waugh, consultants for Oridian Capnography, Inc., “a manufacturer of capnography devices.”²

The most important point to note about Waugh et al. (2011) is that it only assessed whether capnography added value to pulse oximetry and/or visual inspection alone. It does not compare capnography to precordial or pretracheal stethoscopes or other modalities of monitoring ventilation or depressed respiration.

Note that Waugh et al. (2011) stated as follows as its conclusion:

¹ Waugh JB, Epps CA, Khodneva YA. Capnography enhances surveillance of respiratory events during procedural sedation: a meta-analysis. *J Clin Anesth* 2011; 23(3): 189-96.

² *Id.* at 189.

Capnography is an important addition to **pulse oximetry** in detecting respiratory depression during procedural sedation. There is no support for substituting pulse oximetry for traditional monitoring of respiratory depression **such as** capnography, and doing so could be dangerous, especially when supplemental oxygen is used.³ [Emphases added]

Waugh did not purport to include, explore or render any finding with respect to whether capnography provided any benefit in comparison to use of a precordial or pretracheal stethoscope.

Stated more broadly, the purpose of Waugh was really to assess whether monitoring oxygen saturation was enough, or whether it needed to be supplemented with monitoring of respiratory depression (“such as” capnography).

This is not the issue that the ADA House of Delegates had asked CDEL to evaluate, per Resolution 77H-2015, when it asked CDEL, along with CSA, to explore a choice of options including the use of a precordial or pretracheal stethoscope or a capnograph, among other choices, to monitor respiratory depression. Comparison to oxygen saturation (pulse oximetry) alone was never at issue per Resolution 77H-2015, as pulse oximetry was already an independent requirement in a different section (Page 10, Line 465) of the Sedation Guidelines, and was not at issue here.

The ADA’s Science Institute’s “Update of Waugh et al. (2011)” also fails to compare capnography with other ventilation or respiratory depression monitoring techniques. CDEL conveniently glosses over the glaring failure by simply stating that, as in Waugh, the ADA’s “update” compares use of capnography in addition to “standard monitoring” versus “standard monitoring” alone. It fails to mention that, by “standard monitoring,” it means pulse oximetry and visual inspection, not methodologies of monitoring ventilation and respiratory depression such as a precordial or pretracheal stethoscope.

While neither Waugh nor its “update” addresses precordial or pretracheal stethoscopes as an alternative to capnography, the American Dental Society of Anesthesia (ADSA) did! ADSA stated in a letter to CDEL, dated January 6, 2015:

Because moderate sedation does not require the presence of a second assistant, visual changes in an end tidal CO2 waveform might escape detection in the absence of such an individual dedicated to continuously observing the monitors. Conversely, the ADSA believes that for moderate sedation, a precordial/pretracheal stethoscope can be a highly useful and reliable monitor, because it provides instantaneous feedback regarding the presence or absence of breath sounds, which in many instances may make it more practical than end tidal CO2 (capnography). Therefore it is our recommendation that either a precordial/pretracheal stethoscope or capnography should be acceptable options to monitor ventilation on patients undergoing moderate sedation.

A precordial or pretracheal stethoscope remains an equal if not better option to a capnography for moderate sedation.

³ *Id.* at 194.

Conway et al. (2016)⁴

Conway is a current 2016 systematic review and meta-analysis that recommends AGAINST mandating capnography at this time. Specifically, Conway found as follows:

Future research might confirm whether or not a benefit of capnography applies more generally to sedated patients and what mechanisms mediate any [adverse] effects. **Such research should precede recommendations that capnography becomes mandatory for sedated patients.**⁵ [Emphasis added]

The adverse effects of capnography noted by Conway include “premature stimulation of the patient in response to hypoventilation [which] may be counterproductive and result in inadequate sedation” and “numerous clinical irrelevant physiological alarms [that] can lead to ‘alarm fatigue,’ which has been associated with deaths resulting from delayed responses to clinical deterioration.”⁶

Moreover, due to risks of bias in the studies used and statistical heterogeneity, Conway restricted its findings to “three similar trials that sedated participants during colonoscopy with **propofol** while supplying supplemental oxygen.”⁷ **Emphasis added.**

Accordingly, Conway further cautioned:

The evidence for an effect of capnography was limited to adults sedated with propofol: we do not know whether these results would be replicated for children or patients sedated with other drugs, such as benzodiazepines and opioids, which are being investigated in one ongoing trial [23]. Further research should also determine whether capnography reduces hypoxaemia in sedated patients receiving supplemental oxygen flow in excess of three litres, which, in the authors’ experience, is typical for sedated patients who can tolerate an oxygen mask. Researchers should concentrate on blinding interventions to limit bias and increase confidence in the effects of capnography for sedated patients.⁸

With Conway et al. (2016) expressly recommending AGAINST a capnograph mandate, CDEL appears to have sought other means to satisfy the demands of its pro-capnograph constituents.

Accordingly, CDEL, working with the ADA Science Institute, produced an “Update of Conway et al. (2016).” However, the new meta-analysis of the ADA Science Institute is not an update to Conway, but, rather a new meta-analysis that in no way invalidates or presupposes Conway’s 2016 recommendation against a capnograph mandate.

The new meta-analysis is comprised of eight studies, four of which were also included in Conway et al. Two studies used in Conway were excluded in the new meta-analysis, while four additional studies which were available but not included in Conway were included in the new meta-analysis. With CDEL

⁴ Conway A, Douglas C, Sutherland JR. A systematic review of capnography for sedation. *Anaesthesia* 2016; 71(4), 450-454.

⁵ *Id.* at 452.

⁶ *Id.* at 450.

⁷ *Id.* at 451.

⁸ *Id.* at 454.

making available only a brief paragraph of the findings of its new meta-analysis, it is unclear as to how the inclusion and exclusion criteria of the new meta-analysis differed from that of Conway et al. (2016).

Moreover, the ADA Science Institute's new meta-analysis does not meet the criteria recommended by Conway et al. (2016) for future research that would be necessary before consideration of a capnography mandate. First, Conway recommended research on "whether or not a benefit of capnography applies more generally to sedated patients" and "what mechanisms mediate any [adverse] effects" as a prerequisite to any consideration of a capnography mandate. Second, Conway recommended exploring the effects of other medications, as well the effects of supplementing oxygen. The new meta-analysis did neither. Instead, the ADA meta-analysis used similar patients using similar medical procedures, and entirely disregarded any analysis of adverse effects. The CDEL / ADA Science Institute's meta-analysis simply picked different studies to claim the results it wanted.

Therefore, the ADA's meta-analysis is not an update on Conway, but rather a new work product that requires peer-review before consideration. Even in the limited summary of the new meta-analysis released by CDEL, one can begin to see some potential errors or inconsistencies; for example, in stratification by hypoxemia definition, Slagelse et al. (2012) is categorized by the ADA's new meta-analysis as having defined hypoxemia as S_pO_2 under 93%, but Conway et al. categorized the same study as having defined hypoxemia as S_pO_2 under 92%. While this inconsistency or error was unlikely to have materially affected the results, it underscores the need for thorough peer-review and circulation of ADA's new meta-analysis among communities of interest before it can be considered. At a minimum, it certainly does not impeach or replace Conway et al. (2016), which recommended specific other research before considering a capnograph mandate.

II. Capnographs produce false-positives in an open airway system

Even with continuous observation, the use of a capnograph has long been known to be inaccurate under a number of conditions. Capnographs produce inaccurate data when either atmospheric air or O_2 administration dilute the expired CO_2 , or when the patient is a mouth-breather.⁹

Additionally, a clinical trial presently underway to compare the administration of intravenous conscious sedation with or without use of a capnograph, states, "Studies from other settings where sedation is practiced suggest that an additional monitor with capnography facilitates early detection of depressed breathing. However, the results of studies from other medical settings cannot be generalised to dental sedation, because of different techniques used and the types of patients."¹⁰

Clearly, there is a general lack of high-level research regarding enhanced patient safety in a dental setting due to the monitoring of end tidal CO_2 during moderate sedation. The implementation of any new standard that may add a cost to the healthcare system must be implemented only when a mass of strong evidence supports the need.

⁹ Kaneko Y. Clinical perspectives on capnography during sedation and general anesthesia in dentistry. *Anesth Prog* 1995;42: 126-30.

¹⁰ A Randomised Control Trial to Determine Whether Intervention Based on a Microstream Capnography-based Ventilation Monitoring System Will Decrease Hypoxaemia During Intravenous Sedation With Midazolam. Retrieved from <https://clinicaltrials.gov/ct2/show/study/NCT01949012>, June 16, 2015.

In light of the concerns expressed above, adding a capnograph requirement at this time is premature, at best. At worst, it is an unsubstantiated onus that shall add to the cost of care, without proven reliability or need for use in moderate sedation.

“Level of sedation is entirely independent of the route of administration”

Page 2, Line 60; and Page 16, Line 745

AGD Recommendation:

Delete the statement, “Level of sedation is entirely independent of the route of administration,” in both the *ADA Guidelines for the Use of Sedation and General Anesthesia by Dentists* (Page 2, Line 60) and the *ADA Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students* (Page 16, Line 745).

Rationale:

While the AGD appreciates CDEL’s desire to emphasize that it is possible to achieve moderate or deep sedation to an equal extent by any route of administration, the level of sedation and the route of administration are in-fact NOT “entirely independent.”

By virtue of logic, if the level and route were “entirely independent,” then administration of an equal dose of the same drug for the same amount of time by the same practitioner for the same patient in the same or similar condition should produce the same level of sedation at the same given amount of time after administration, regardless of whether administration was intravenous or enteral.

We know that this is not the case. As Dr. Mark Walker explained on behalf of ADA District XI:

An orally administered drug is exposed to metabolic clearance mechanisms in the intestine and liver before it gets into the circulatory system. By comparison, an intravenously administered drug is deposited directly into the circulatory system. Factors such as gastric emptying, GI absorption, GI inactivation, first-pass hepatic metabolism and variability in patient response associated with using fixed doses raises patient safety concerns that can only be addressed by having training specific to the route of administration. The argument that “sedation is sedation” simply doesn’t hold true.¹¹

State legislatures, other organizations, courts, and practitioners look to the ADA and its guidelines to understand what may or may not be acceptable in the practice of dentistry. By blanket denial of any and all relationship between the route of administration and the resulting level of sedation, the ADA sends a message that it is okay to ignore clinical differences between the effects of oral absorption and intravenous absorption by the human body.

¹¹ CDEL_Comments_2016Q1.pdf. Section 5 (“District XI”). Retrieved from www.ada.org/en/education-careers/events/open-hearing-on-anesthesia-and-sedation-guidelines.

To exercise in hyperbole merely to add emphasis is a dangerous game, and not one that should be played by an organization held in such high esteem.

“Moderate Sedation Course Duration” (hours and content) by level of sedation
Page 27, Lines 1303-1304 and 1341Page 28, Lines 1347-1392

AGD Recommendations:

1. **Revise Course Objectives 5 (Page 27, Lines 1303-1304) as follows:** “Describe and demonstrate the technique of intravenous access, intramuscular injection and other parenteral techniques (for parenteral moderate sedation courses only).”
2. **Revise Moderate Sedation Course Content 15 (Page 27, Line 1341):** “Intravenous access: anatomy, equipment and technique (for parenteral moderate sedation courses only).”
3. **Reject all proposed revisions to Page 28, Lines 1347-1392, and revert to existing language.**

Rationale:

The comments of the AGD address the following CDEL response to ADA HOD Resolution 77H-2015:

[CDEL] believes that depth of moderate sedation is entirely independent of the route of administration. Patients who arrive at a level of moderate sedation by an enteral or parenteral route are in the same clinical state. [CDEL] maintains that moderately sedated patients via either route require the same attentiveness and monitoring. There should be no difference in the training requirements for the routes of administration. [CDEL] continues to support course duration as 60 hours of instruction plus 20 patient experiences for moderate sedation. [Lines 1362-1365] The Council also proposes several competencies that must be certified by a course director, especially regarding rescue and emergency management. [Lines 1366-1372]

CDEL has simply reaffirmed its position without providing any further evidence in response to ADA HOD Resolution 77H-2015. The proposed revisions continue to impose the course requirements for parenteral sedation upon enteral sedation, increasing hours of instruction for enteral moderate sedation by 250% and cases by 100% (live cases by 667%).

The AGD understands and appreciates the trend toward the regulation of sedation practice by levels of sedation rather than routes of administration. However, when faced with a call to realign very different requirements by routes of sedation, into a singular requirement by level of sedation, the drafter must strive to maintain safety while mitigating costs and the onus to both the practitioner and efforts to improve access to care.

In that vein, CDEL has continued to offer no citation to support any safety need for an increase to the minimal hours of instruction and case experiences for enteral or enteral combination routes to moderate

sedation. As noted by the transcript of testimony provided by ADA District XI on April 20, 2016, “The oral route is inherently the safest route for drug administration.”¹²

Moreover, we continue to be concerned that **the revisions actually reduce the requirements upon providers that intend to administer IV sedation**. The current guidelines require the administration of sedation to all 20 patients to be by intravenous route, for the purpose of parenteral sedation training. With the proposed language combining enteral and parenteral training, the route of administration for the 20 patients is unspecified, thus allowing administration of IV sedation for just 1 patient, and enteral administration to the remaining 19, to be sufficient for the provider that intends to practice IV sedation. Just as requirements should not exceed the requirements for safety at any additional cost without added benefit, requirements should also not dip below minimal needs of safety. Accordingly, we question the appropriateness of effectively causing up to a 95% reduction in the requirement of using parenteral administration techniques on live patients for training toward parenteral sedation.

Finally, as noted by a number of the written comments and correspondences received by CDEL during March and April 2016, the instances of harm or death to patients subsequent to the administration of sedatives in the dental practice have been **due to a failure to comply** with the current guidelines, **not a deficiency in the guidelines** themselves.

On behalf of the AGD, I thank you for this opportunity to provide input on CDEL’s consideration of submission of its proposed revisions to the 2016 ADA HOD. The AGD stands ready to work with CDEL and other ADA councils and committees to thoughtfully and deliberately address any concerns it may have had that led to the proposal of these revisions, as we believe a collaborative evidence-based approach provides a better pathway to consensus.

Sincerely,

A handwritten signature in black ink that reads "W Mark Donald, DMD". The signature is written in a cursive, slightly slanted style.

W. Mark Donald, DMD, MAGD
President, Academy of General Dentistry

¹² Dionne DDS, Raymond, et al. Balancing efficacy and safety in the use of oral sedation in dental outpatients. JADA Vol. 137 April 2006

From: [Jasek, Jane F.](#)
To: [Harrell, Katie](#)
Subject: FW: 77H-2015 (comment)
Date: Monday, July 04, 2016 6:29:15 PM
Attachments: [8F027804-35E2-4C8A-B2BF-8A58F53311D0.png](#)

Jane Forsberg Jasek, RDH, MPA jasekj@ada.org
Manager, Dental Education and Licensure Matters
CDEL
312.440.2694

American Dental Association 211 E. Chicago Ave. Chicago, IL 60611 www.ada.org

From: Michael Silverman [<mailto:drmds@docseducation.com>]
Sent: Monday, July 04, 2016 6:18 PM
To: Jasek, Jane F.
Subject: Re: 77H-2015

Dear Jane,
Please find below my public comment to the resolution.
Do you have an idea of what the 2016 resolution will be called?
Happy 4th of July.
Best,

Dear Council,

For the fourth time in two years, the same proposal to severely limit general dentists in the use of minimal and moderate enteral sedation, for patients who badly need it, is being quietly foisted upon the general dentist community.

In its call for comments and presentations at its April 20th meeting in Chicago, CDEL requested scientific information to support the positions of the communities of interest who were going to comment and present. The proponents of this revised proposal, however, provided nothing to back up their position.

However, sedation dentistry luminaries such as Dr. Raymond Dionne provided peer-reviewed articles, studies, and established research proving that oral sedation as provided by practitioners following the current ADA guidelines is safe and work. Tens of millions of patients have been treated safely, effectively, and without incident under existing ADA guidelines.

Once again, in its revised proposal, evidence-based dentistry is completely ignored by CDEL.

Respectfully submitted,

Michael Silverman

Michael D. Silverman, DMD, DICOI, FICD

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From: [Porembski, Pamela M.](#)
To: [Hart, Karen](#); [Jasek, Jane E.](#)
Cc: [Andrew Brown \(ddsbrown@bellsouth.net\)](#); [terry.g.otoole@gmail.com](#); [Craig Ratner \(cratdmd@gmail.com\)](#)
Subject: Comments on ADA Guidelines for the Use of Sedation and General Anesthesia by Dentists - due July 4, 2016
Date: Thursday, July 07, 2016 2:19:54 PM
Attachments: [Council of Dental Practice - Member Comments on CDEL Anesthesia Guidelines 07.04.2016.docx](#)

Appended are comments from a member of the Council on Dental Practice regarding proposed revisions to the *ADA Guidelines for the Use of Sedation and General Anesthesia by Dentists* and the *Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students*.

Please let me know if you have any questions.

Thank you,

Pam

Pamela Porembski D.D.S. porembskip@ada.org
Director, Council On Dental Practice / Practice Institute
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Council on Dental Practice

Comments on CDEL's Revision of the ADA *Guidelines for the Use of Sedation and General Anesthesia by Dentists* and the *Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students*

I am not supportive of CDEL's proposed revisions to the ADA anesthesia guidelines. As you can clearly see by reading the COMMENTS, and if you were at the HOD last year, this is a very divisive issue and should not be taken lightly. The ramifications of this could potentially be detrimental to our membership recruitment and retention. As you may recall during our last CDP meeting, Dr. Gesek informed the Council, during our conference call with CDEL, that CDP would be given the CSA report as soon as it was released to CDEL. To date, CDP has not received this report although CDEL has received this report and moved forward with recommendations supposedly based upon this report. Instead CDEL released the attached "CAPNOGRAPHY REPORT" not the CSA report. By CDEL's own admission in the "Introduction" of this report, CDEL states *"it is not clear that such episodes (hypoventilation) are clinically significant or if earlier detection with capnography has an effect on patient outcomes"*. Further in the report, upon reviewing "STAKEHOLDER RECOMMENDATIONS", AAOMS is the only "stakeholder" group that says capnography should be used in moderate sedation in adults. The American Society of Gastroenterologists states *"inadequate data to support routine use of capnography"*. Furthermore, Page 11 "SUMMARY" of CDEL's report states *"the evidence base is limited and there is a need for better designed and conducted studies for more definitive insight about whether and the extent to which capnography improves patient safety for dental patients across the age continuum"*.

This one statement by CDEL, by itself, is sufficient reason, particularly given the divisive nature of the CDEL recommendation, as to why these recommendations are pre-mature and should not be promulgated by CDEL.

I question that CDEL even fulfilled the mandate put forth to it by the 2015 House of Delegates. The language of Resolution RC 77-2015 clearly mandates that **CDEL collaborate with CSA** on three (3) bullet points:

- 1) Elimination of the mandate for **capnography**
- 2) Reconsider the section on **Moderate Sedation Course Duration**, with possible separation of course requirements for enteral and parenteral sedation
- 3) Making patient evaluations consistent throughout the document including rationale and guidelines for using **BMI**

In my opinion, and the opinion of other delegates, this adopted resolution calls for evidence that CSA has studied the available science, literature and documentation of all three bullet points and has made appropriate and scientific recommendations to CDEL for their deliberation. To avoid unnecessary time and confusion on the House floor this fall, it is of paramount importance that CSA's findings and recommendations to CDEL be made available to all delegates and that CDEL be transparent.

The documents given to us to date show no evidence of any collaborative effort between CDEL and CSA on any of the three bullet points. CDEL has only given us the "Capnography Report" which shows no evidence of collaboration with CSA. There is no mention of CSA's findings or recommendations within this report.

Given the available evidence, the three documents submitted to us from CDEL, one can only conclude that CDEL has not fulfilled its mandate as set forth by the 2015 House of Delegates.



California Society of
ANESTHESIOLOGISTS
Physicians for Vital Times

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Sacramento, CA 95814

July 4, 2016

Dr. Daniel J Gesek, Jr., Chair
Council on Dental Education and Licensure
American Dental Association
211 East Chicago Avenue
Chicago, IL 60611

RE: CSA Response to ADA Anesthesia & Sedation Guidelines Revisions

Dear Dr. Gesek:

The California Society of Anesthesiologists (CSA) greatly appreciates your invitation to provide comments regarding the proposed amendments to the American Dental Association's (ADA) *Guidelines for the Use of Sedation and General Anesthesia by Dentists* and *ADA Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students* (Guidelines).

CSA has been on record several times this year by way of California Assembly Bill 2235 (Thurmond), stating that we collectively must do everything in our power to ensure the safest use of anesthesia/sedation to safeguard against the complications and possible adverse events that can result. To that end, we applaud the ADA in taking a leadership role in this area. Specifically, we are supportive of the proposed modifications mandating monitoring for end-tidal CO₂; acknowledging depth of sedation is independent of route of drug administration; supporting inclusion of Body Mass Index measurements as part of a pre-procedural workup; and that the ADA Guidelines should focus on adult patients.

Although we at the CSA are not experts in the practice of dentistry, it is important to note that physician anesthesiologists are the only medical professionals recognized by the Institutes of Medicine for implementing patient safety measures and protocols that have resulted in a 50-fold decrease in deaths.¹ Therefore, we strongly believe that the standard of care regarding the administration and monitoring of anesthesia services must be consistent, whether the patient is six years of age or 60, and whether anesthesia care is delivered in a dental office, ambulatory surgery center or acute care hospital.²

To ensure patient safety, many states require cardiac monitoring for deep sedation. Because sedation is a continuum, moderate sedation can easily progress to deep sedation. As a result, the monitors required for deep sedation should be applied equally to cases under moderate sedation. These include pulse oximetry, ECG and capnography. Otherwise, each time a patient slips into deep sedation (which can happen frequently), the facility runs the risk of non-compliance. Additionally, we feel that at all times, at minimum, a second individual solely dedicated to continuously ensuring the adequacy of breath-to-breath ventilation, trained in patient monitoring, is necessary.

¹ *To Err is Human*, Institute of Medicine, 1999

² CSA Patient Safety Bill of Rights: Patient Safety Across the Continuum for Deep Sedation/General Anesthesia (adopted June 5, 2016)

As reported in a national audit in the United Kingdom, “Emergency airway management outside the operating theater is known to be associated with more frequent problems than routine anaesthesia.”³ They found the second most common factor in avoidable airway events/deaths was education and training. These facts support limiting deep sedation and general anesthesia to the most qualified providers, as these techniques may lead to avoidable patient deaths in the hands of personnel with less training. It is critical for the facility and staff at all times to maintain the ability to manage emergency airway complications, including laryngospasm, with appropriate drugs and equipment. The definitive treatment for life-threatening laryngospasm (adults or children) is the administration of succinylcholine, a fast acting muscle relaxant (i.e. paralytic), (listed in Appendix 3, AAP/AAPD guideline⁴). Please note that facilities which stock or use succinylcholine are also required to have a Malignant Hyperthermia kit immediately available on site to treat this life-threatening side effect of succinylcholine in genetically susceptible individuals.

Again, the CSA appreciates the opportunity to provide our insights.

Please feel free to contact CSA Legislative Advocate Bryce Docherty, at 916-448-2162 or via e-mail at bdocherty@ka-pow.com should you have any further questions or need additional information.

Sincerely,



Mark Zakowski, M.D.
President

cc: Bryce Docherty, KP Public Affairs
David Butler, CSA Executive Director

³ Cook TM, Woodall N, Frerk C; Fourth National Audit Project. Major complications of airway management in the UK: results of the Fourth National Audit Project of the Royal College of Anaesthetists and the Difficult Airway Society. <http://www.rcoa.ac.uk/nap4>

⁴ Coté CJ, Wilson S, AMERICAN ACADEMY OF PEDIATRICS, AMERICAN ACADEMY OF PEDIATRIC DENTISTRY. Guidelines for Monitoring and Management of Pediatric Patients Before, During, and After Sedation for Diagnostic and Therapeutic Procedures: Update 2016. *Pediatrics*. 2016; 138(1):e20161212

Resolution 1

Topic: Patient Safety and Sedation

Title: Patient Safety Bill of Rights: Patient Safety across the continuum for Deep Sedation/General Anesthesia.

Author: Mark Zakowski M.D.

Whereas, physician anesthesiologists are the only medical specialty to be singled out for significantly improving patient safety in the 1999 Institute of Medicine report, To Err is Human.

Whereas, physician anesthesiologists continue to innovate and advocate for the highest standards in patient safety.

Whereas, patient safety can be enhanced by adherence to the highest principles and standards.

Be resolved that:

The California Society of Anesthesiologists supports one standard of care on behalf of patient safety across the continuum of care for deep sedation/general anesthesia.

In doing so we affirm:

Patients have a right to the safe administration of sedatives and anesthetics.

Patients have a right to expect a uniform standard of care across the continuum of anesthesia administration, services and locations.

Pharmacologic principles prove that medications administered by any route may interact and/or cause cardiorespiratory depression.

All medications (e.g. sedatives, analgesics, anesthetics, narcotics, etc.), by all routes of administration (e.g. oral, intravenous, inhaled, transdermal, etc.), and patients' medical history (e.g. obstructive sleep apnea, kidney or liver disease) may have an impact on the resulting level of sedation, individual response to medications, drug interaction(s) and potential for respiratory depression/cardiopulmonary arrest.

Sedation occurs across a continuum of effect, blurring the lines between deep sedation and general anesthesia.

CSA supports use of monitoring based on level of sedation/anesthesia achieved, based upon American Society of Anesthesiologists national guidelines and standards.

Administration and Monitoring for patients' deep sedation/general anesthesia should follow uniform standards across the continuum of care and according to the national American Society of Anesthesiologists guidelines/standard regardless of location (e.g. hospital based operating room, procedure room, ambulatory surgery center, private physician offices, private dentist offices), in order to maintain the highest standards of patient safety.



July 1, 2016

Dr. Daniel J Gesek, Jr., Chair
Council, Dental Education & Licensure
American Dental Association
211 East Chicago Avenue
Chicago, IL 60611

Dear Dr. Gesek and Members of the Council:

The American Academy of Pediatrics, California (AAP-CA) representing the over 5,000 California pediatrician members statewide of the four AAP-CA regional chapters, appreciates this opportunity to comment on the American Dental Association (ADA) Council on Dental Education and Licensure's proposed revisions to the *ADA Guidelines for the Use of Sedation and General Anesthesia by Dentists* (Use Guidelines).

In the request for comment the ADA Council recommends the following:

The current ADA Guidelines support the use of the American Academy of Pediatrics/American Academy of Pediatric Dentistry "Guidelines for Monitoring and Management of Patients Before, During, and After Sedation for Diagnostic and Therapeutic Procedures." ...Because of this reference to and support of the AAP/AAPD Guidelines, coupled with the special circumstances of managing pediatric patients who undergo sedation and anesthesia, the Council is proposing that the ADA Sedation and Anesthesia Guidelines should focus on the adult patient population. Accordingly, the Council is recommending that the remaining references to pediatric patients in the ADA Sedation and Anesthesia Guidelines be deleted.

The AAP-CA appreciates the Council's acknowledgment of the special circumstances of managing pediatric patients who undergo sedation and anesthesia. So long as (1) the phrase "under age 12" is deleted, as recommended by the Council (so that reliance on the AAP/AAPD guidelines applies to children of any age) and; (2) there is a link to the most recently updated version of the relevant collaborative AAP/AAPD guidelines included in the *ADA Sedation and Anesthesia Guidelines* (see below), the AAP-CA supports the Council's recommendation to move this endorsement to the introduction section and to remove other reference to children from the guidelines under review.

We applaud the ADA's action to endorse the use of the evidence-based guidelines developed by the American Academy of Pediatric Dentistry and the American Academy of Pediatrics with respect to the monitoring and management of pediatric patients before, during and after sedation



for diagnostic and therapeutic procedures. The most recent version of those guidelines is available here: [Guidelines for Monitoring and Management of Pediatric Patients Before, During, and After Sedation for Diagnostic and Therapeutic Procedures: Update 2016](#).

Thank you for your attention to this important issue and for your leadership in dental health and access to quality dental care.

Sincerely,

A handwritten signature in black ink that reads "Kris E. Calvin".

Kris Calvin
Chief Executive Officer
American Academy of Pediatrics, California

CC: AAP-CA Leadership, Assemblymember Tony Thurmond



July 4, 2016

Dr. Daniel J Gesek, Jr., Chair
Council on Dental Education and Licensure
American Dental Association
211 East Chicago Avenue
Chicago, IL 60611

[Submitted via Email: JasekJ@ada.org]

Re: June 2016 Proposed Revisions to the Current Sedation and Anesthesia Guidelines

Dear Dr. Gesek,

The American Society of Anesthesiologists (ASA) appreciates the opportunity to comment on the Council on Dental Education and Licensure's (CDEL) proposed amendments to the American Dental Association's (ADA) *Guidelines for the Use of Sedation and General Anesthesia by Dentists* and *ADA Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students* (Guidelines) that were published on the ADA's website (http://www.ada.org/~media/ADA/Education%20and%20Careers/Files/CDEL_ProposedGuidelines_2016June03.pdf?ig=en). ASA is a 53,000 member educational, research, and advocacy organization dedicated to improving the medical care of patients and raising standards in the science and art of anesthesiology. Since its founding in 1905, the ASA's achievements have made it the leading voice and the foremost expert in American medicine on matters of patient safety in the perioperative environment and pain medicine.

On behalf of ASA, I am writing to support these proposed changes. Our comments will address the following revisions within the proposal: end-tidal CO₂, independence of depth of sedation and route of administration, Body Mass Index (BMI) as part of a pre-procedural workup, and removal of pediatric patients from the Guidelines.

I. Mandating End-Tidal CO₂ Monitoring is Appropriate for Dental Patients Undergoing Moderate Sedation

ASA has a genuine concern that individuals, however well intentioned, who are not anesthesia professionals may not recognize that sedation and general anesthesia are on a continuum and thus deliver levels of sedation that are, in fact, general anesthesia without having the training and experience to recognize this state and respond appropriately. ASA's *Statement on Granting Privileges for Administration of Moderate Sedation to Practitioners Who Are Not Anesthesia Professionals* includes at I.A.8.f. "Capnography – During moderate sedation the adequacy of ventilation shall be evaluated by continual observation of qualitative clinical signs and monitoring for the presence of exhaled carbon dioxide unless precluded or invalidated by the nature of the patient, procedure, or equipment."¹ ASA's *Standards for Basic Anesthetic Monitoring* similarly provide at 3.2.1 "Every patient receiving general anesthesia shall have the adequacy of ventilation continually evaluated.

¹ Available at <http://www.asahq.org/~media/Sites/ASAHQ/Files/Public/Resources/standards-guidelines/statement-on-granting-privileges-for-administration-of-moderate-sedation-to-non-anesthesiologist.pdf>

Qualitative clinical signs such as chest excursion, observation of the reservoir breathing bag and auscultation of breath sounds are useful. Continual monitoring for the presence of expired carbon dioxide shall be performed unless invalidated by the nature of the patient, procedure or equipment. Quantitative monitoring of the volume of expired gas is strongly encouraged.*”²

II. Independence of Depth of Sedation and Route of Administration

ASA’s document entitled *Continuum of Depth of Sedation: Definition of General Anesthesia and Levels of Sedation/Analgesia** provides in part: “Because sedation is a continuum, it is not always possible to predict how an individual patient will respond. Hence, practitioners intending to produce a given level of sedation should be able to rescue*** patients whose level of sedation becomes deeper than initially intended. Individuals administering Moderate Sedation/Analgesia (“Conscious Sedation”) should be able to rescue*** patients who enter a state of Deep Sedation/Analgesia, while those administering Deep Sedation/Analgesia should be able to rescue*** patients who enter a state of General Anesthesia.”³ While the document provides definitions of the continuum of sedation and anesthesia from minimal sedation (anxiolysis) through general anesthesia, nowhere does the document reference achieving a specific level of sedation or anesthesia by route of administration including oral/enteral. ASA is pleased to see ADA’s Guidelines similarly recognized the independence of the depth of sedation from the route of administration.

III. Body Mass Index (BMI) as Part of a Pre-Procedural Workup

ASA’s *Physical Status Classification System*⁴ includes body Mass Index (BMI) among its determinants with ASA II and III. Inclusion of a BMI assessment as part of a pre-procedural workup is highly recommended.

IV. Removal of Pediatric Patients from the Guidelines

ASA supports ADA’s focus on adult patients in these guidelines. Pediatric anesthesia and sedation patients are unique. ASA supports ADA’s recognition of the special considerations that are necessary for this patient population, and that they should be addressed by pediatric specialists. If there are revised guidelines from the American Academy of Pediatrics / American Academy of Pediatric Dentistry, ASA may request the ability to further comment.

As a final note for consideration, ASA is aware of the increasing dialogue concerning operator administered anesthesia. ASA “*Practice Guidelines for Sedation and Analgesia by Non-Anesthesiologists*” state that “A designated individual, other than the practitioner performing the procedure, should be present to monitor the patient throughout procedures performed with sedation/analgesia. During deep sedation, this individual should have no other responsibilities. However, during moderate sedation, this individual may assist with minor, interruptible tasks once the patient’s level of sedation–analgesia and vital signs have stabilized, provided that adequate

² Available at <http://www.asahq.org/~media/Sites/ASAHQ/Files/Public/Resources/standards-guidelines/standards-for-basic-anesthetic-monitoring.pdf>

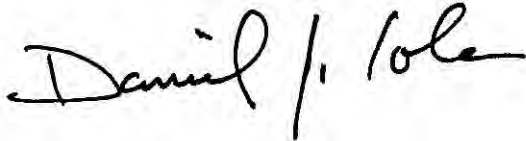
³ Available at <http://www.asahq.org/~media/Sites/ASAHQ/Files/Public/Resources/standards-guidelines/continuum-of-depth-of-sedation-definition-of-general-anesthesia-and-levels-of-sedation-analgesia.pdf>

⁴ Available at <http://www.asahq.org/~media/sites/asahq/files/public/resources/standards-guidelines/asa-physical-status-classification-system.pdf#search=%22BMI%22>

monitoring for the patient's level of sedation is maintained." Please refer to the complete ASA *"Practice Guidelines for Sedation and Analgesia by Non-Anesthesiologists"*⁵ and ASA *"Standards for Basic Anesthetic Monitoring"* for more detail.⁶

Thank you again for the opportunity to provide comments on this important issue. If you have any questions or need additional information, please contact Jason Hansen, M.S., J.D., Director of State Affairs, at j.hansen@asahq.org or by phone at 202-289-2222.

Sincerely,

A handwritten signature in black ink that reads "Daniel J. Cole". The signature is written in a cursive, flowing style.

Daniel J. Cole, M.D.
President

⁵ Practice Guidelines for Sedation and Analgesia by Non-Anesthesiologists. *Anesthesiology* 2002; 96:1004 – 17.

⁶ Available at <http://www.asahq.org/~media/Sites/ASAHQ/Files/Public/Resources/standards-guidelines/standards-for-basic-anesthetic-monitoring.pdf>



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July 02, 2016

Dr. Daniel J. Gesek, Jr.
Chair, Council on Dental Education and Licensure
American Dental Association
211 East Chicago Ave.
Chicago, IL 60611

Dear Dr. Gesek:

The American Society of Dentist Anesthesiologists (ASDA) would like to thank the American Dental Association (ADA) for the opportunity to provide comments on the ADA's Council on Dental Education and Licensure's *Guidelines on the Use of Sedation and General Anesthesia by Dentists*, and *Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students*.

The latest iteration contains many suggestions that the ASDA have already recommended; however, three areas remain that deserve further consideration:

Line 299, 403 and 406. Preoperative evaluation.

The current guidelines cite different approaches to preoperative evaluation for minimal and moderate sedation. They should be the same. Minimal sedation providers need to be able to identify and appropriately manage patients that inadvertently progress to moderate sedation.

Lines 466-472: Ventilation.

We suggest replacement of the existing wording with: "The dentist must continuously observe chest excursions during the procedure. The dentist must employ multiple monitors of ventilation that may include direct observation of chest excursions, end-tidal carbon dioxide monitoring, auscultation of breath sounds and bidirectional verbal communication with the patient. End tidal-carbon dioxide must be immediately available in all circumstances."

Improving Access to Care for Dental Patients and Their Dentists

4411 Bee Ridge Road, #172 ■ Sarasota, FL 34233 ■ (phone) 312.624.9591 ■ (fax) 773.304.9894 ■ www.asdaq.org

Dr. Gesek Letter
Page 2
July 2, 2016

Lines 1386-1415: Training.

The ASDA believes separate educational guidelines for moderate enteral sedation and moderate parenteral sedation should be described. While we agree that moderate sedation can be gained or lost through different routes of administration, a significant number of states currently issue sedation permits with regard to route of administration. As a result, a number of educational programs still teach and describe enteral sedation as a distinct practice. We are concerned that policy makers will encounter ambiguity as they attempt to update their sedation permit rules, and would benefit by explicit description of educational guidelines for both practices.

Lastly, the ASDA would like to thank the ADA's Council on Dental Education and Licensure's hard work and your tireless efforts to enhance patients' safety. We hope our recommendations will assist in your efforts.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Steve Nguyen', with a stylized, flowing script.

Steve Nguyen DDS
President, American Society of Dentist Anesthesiologists

Resolution No. None N/AReport: Board Report 4 Date Submitted: July 2016Submitted By: Board of TrusteesReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Membership-Obj. 1: Leaders and Advocates in Oral Health

How does this resolution increase member value: See Background

**REPORT 4 OF THE BOARD OF TRUSTEES TO THE HOUSE OF DELEGATES: RESPONSE TO
RESOLUTION 35H-2014—A COMPREHENSIVE STUDY OF THE CURRENT DENTAL EDUCATION
MODELS**

Background: Resolution 35H-2014 (Appendix 1) directed the ADA to conduct a focused study relative to the impact of student debt on dentistry as a career choice and subsequent practice choices, and *pursue* a focused study relative to the long-term sustainability of dental schools, the efficiency of the current dental school curricula and delivery methods and the appropriate level of scholarship to ensure that dentistry continues to be a learned profession.

The Health Policy Institute (HPI) conducted the study relative to the impact of student debt on dentistry as a career choice and subsequent practice choices. The full report can be found at:
[http://jada.ada.org/article/S0002-8177\(15\)00602-9/pdf](http://jada.ada.org/article/S0002-8177(15)00602-9/pdf)

The Association then commissioned a study of dental education models in an effort to improve the knowledge base and address the topics cited in the Resolution 35H. The consulting firm of Cavanaugh, Hagan, Pierson & Mintz (CHP&M) in collaboration with the American Dental Education Association (ADEA) was selected to conduct the study. The final reports are presented in Appendices 2, 3, and 4; Appendix 5 is presentation slides. Representatives of CHP&M and ADEA briefed the Board on the report findings at its July/August 2016 meeting.

Regarding the impact of student debt on dentistry as a career choice, the HPI found:

- Dentists with higher initial debt were less likely to specialize and more likely to enter private practice, accept high-paying jobs on graduation, and work longer hours.
- Choice of employment setting, practice ownership, and whether to provide Medicaid and charity care were associated with dentists' sexes and races but not debt. High debt levels influenced some career decisions, but the magnitude of these effects was small compared with the effects of demographic characteristics, including race and sex, on career choices.
- Trends in educational debt relative to net income in dentistry are similar to those in other health care occupations. This suggests dentistry remains an attractive career in relation to other career choices.
- In addition, HPI has taken considerable effort to link several databases to create a robust data set for future research.

Regarding the long-term sustainability of dental schools, the efficiency of the current dental school curricula and delivery methods, and the appropriate level of scholarship to ensure that dentistry continues to be a learned profession, the commissioned report found:

- The high level of variation and fluidity among dental schools' curricular activities limits the ability to easily group schools into a simple and meaningful taxonomy that would remain static over time.
- Further analysis showed that the predoctoral curricular model is not a predictor of the variation in expenditures across dental schools.
- There is no "single best" financial model for dental schools that would result in increased revenue or reduced expenses.
- Four variables found to be statistically significant in explaining the variation in expenses among dental schools: 1) number of faculty; 2) level of research activities; 3) cost of living; and 4) clinic expenses measured as patient care.
- Dental schools' share of inflation-adjusted total NIH funding has remained fairly level.
- The number of peer-reviewed journals focused on dentistry and oral health has increased by 25% over the past six years.
- There is a decrease in number of full-time Ph.D. faculty, who often take the lead in conducting oral health research.
- There is significant decline in NIH dollars, and specifically funding from the NIDCR, to support the work of dental school researchers.
- There is an inherent tension between the level of financial investment needed to advance research and scholarship and the desire to reduce the cost of dental education.

BOARD RECOMMENDATION: Vote Yes to Transmit.

Vote: Board Report 4

ASAI	Yes	COLE	Yes	GEHANI	Yes	ROBERTS	Yes
BITTER	Yes	CROWLEY	Yes	JEFFERS	Yes	ROBINSON	Yes
BLACK	Yes	FAIR	Yes	KLEMMEDSON	Yes	STEVENS	Yes
BUCKENHEIMER	Yes	FISCH	Yes	KWASNY	Yes	ZENK	Yes
COHLMIA	Yes	GAMBA	Absent	MARRON-TARRAZZI	Yes	ZUST	Yes

Appendix 1**Resolution 35H-2014. A Comprehensive Study of the Current Dental Education Models**

Resolved, that the ADA conduct a focused study relative to the following:

Domain 3: Impact of Student Debt on Dentistry as a Career Choice and Subsequent Practice Choices

1. How does the cost of dental education and/or level of student borrowing influence students' decisions to enter dental education and their future career choices?
2. Do higher levels of educational debt have a greater impact on career choices?
3. What is the critical point at which the perceived return on investment means that dentistry is no longer seen as a desired profession?
4. Are there differences in the perceived return on investment for specific subsets of dental careers?
5. At what income/debt ratio are specific labor force choices impacted (disaggregating the data to determine impact on generalist, specialist, public health, Medicaid providers, etc.)
6. How long does it actually take for dentists to pay off their educational debt?
7. What is the impact of new loan repayment programs/options on student debt?
8. Are there other strategies we can use to reduce the cost to students and/or students' educational debt (e.g., subsidizing loans, level of clinical production while in school, alternative investment pools, philanthropy, and planned giving)?
9. What is the impact of educational debt on graduates' decisions to enter subsets of practice such as solo practice, small group practice and large group practice, and to be a practice owner or an employed dentist?
10. Does educational debt primarily have a short-term impact on practice choices (i.e., decisions upon graduation or in the first few years of practice) or does it impact longer-term practice choices?

and be it further

Resolved, that the ADA pursue a focused study relative to the following:

Domain 1: Long-Term Sustainability of Dental Schools

1. What are the major revenue and expense drivers for dental education, and how do these differ across schools?
2. What opportunities exist to increase revenue for dental schools other than increases in tuition and fees (for example, increased reimbursement for clinical care, increased net clinical income, private philanthropy, intellectual property and technology transfer, and increased federal and state funding)?
3. What opportunities exist to reduce the cost of dental education (for example, sharing of faculty and educational resources, increasing the productivity of clinical faculty, use of technology, addressing the financial impact of accreditation standards and state regulations)?

Domain 2: Efficiency of the Current Dental School Curricula and Delivery Methods

1. Which dental schools are utilizing each of the curricular models and what is the financial model that supports each approach?

Domain 4: Appropriate Level of Scholarship to Ensure that Dentistry Continues to Be a Learned Profession

1. Is the profession attracting and retaining the highest quality faculty who can lead the research enterprise?

1 2. How can the dental community provide more effective advocacy for research support?

2

3 and be it further

4 **Resolved**, that the study results be reported to the 2016 House of Delegates.

5

ADA Study on Approaches to and Implications of Alternative Dental Education Models

April 2016

Domain 1: Developing a Taxonomy of Dental School Models

Prepared for the American Dental Association Health Policy Institute by
Cavanaugh Hagan Pierson & Mintz and the American Dental Education Association

CAVANAUGH HAGAN PIERSON & MINTZ
counsel to organizational leaders

ADEA | THE VOICE OF
DENTAL EDUCATION

Domain 1: Developing a Taxonomy of Dental School Models

EXECUTIVE SUMMARY

The *ADA Study on Approaches to and Implications of Alternative Dental Education Models* explores three primary research questions:

1. How can we classify different models of U.S. dental schools based on key curricular and financial variables they share in common? (Domain 1)
2. What are the major revenue and expense drivers for dental education, and how do these differ across (types of) dental schools? (Domain 2)
3. Is the profession attracting and retaining the faculty needed to lead the research enterprise (and to ensure that dentistry continues to be a learned profession)? (Domain 3)

The report that follows focuses specifically on Domain 1.

Using data from the *Commission on Dental Accreditation Survey of Dental Education Group IV: Curriculum* and the *Survey of Dental Education Group III-Financial Management*, this study explored types of curricular models used for predoctoral dental education by U.S. dental schools and developed a taxonomy of those models.

The taxonomy was based on seven variables of curricular activities that were found to be useful in distinguishing the curricular approaches of dental schools: community patient care, total patient care, sponsored training and research,

comprehensive patient care, curricular integration, pedagogy, and technology.

Using cluster analysis to group U.S. dental schools by similar curricular characteristics, this study identified five clusters of schools based on their curricular models:

- **Cluster 1** primarily consists of schools reporting multiple curricular components integrated into thematic units without discipline boundaries, using the Comprehensive Patient Care model in all years of the program, and fully integrating technology into their teaching.
- **Cluster 2** primarily consists of schools beginning the Comprehensive Patient Care model in year two and integrating a few courses, but not the entire curriculum. In addition, all schools in this cluster make high use of simulation/small group instruction.
- **Cluster 3** primarily consists of schools that have implemented the Comprehensive Patient Care model during the last two years of the program and make high use of simulation/small group instruction.
- **Cluster 4** primarily consists of schools making high use of didactic and independent study and working toward greater implementation of technology.
- **Cluster 5** primarily consists of schools that have fully integrated their entire curriculum around themes, strands or threads; use the Comprehensive Patient Care model beginning in year two; and report a higher than average number of

Domain 1: Developing a Taxonomy of Dental School Models

patient care hours and community patient care days.

The results of the cluster analysis show that schools vary significantly in the design of their predoctoral curriculum. Even within each of the five clusters in the taxonomy there was significant variation among schools across the seven variables. In other words, schools within a cluster that were similar in one variable would often differ in other variables. **Ultimately, we found that the high level of variation among dental schools on their curricular activities limits our ability to easily group or categorize schools into a simple and meaningful taxonomy that would remain “static” over time.**

The fact that each school is pursuing its own curriculum evolution also suggests that schools will likely move among clusters each year, and that the clusters themselves will change over time. Nonetheless, the process used to create the taxonomy was an objective, statistical methodology that can be easily replicated. The results of the cluster analysis provide important insight into the complexity of dental school curricular models that goes beyond the single-dimensional descriptors that have traditionally been used to categorize dental schools.

BACKGROUND

In February 2015, the American Dental Association (ADA) issued a Request for Proposals (RFP) to conduct a study of dental education models (*ADA Study on Approaches to and Implications of Alternative Dental*

Education Models). The study was authorized by the ADA House of Delegates Resolution 35B-2014 that called for the ADA to pursue a focused study to examine the long-term sustainability of dental schools, the efficiency of current dental school curricula and delivery methods, and the appropriate levels of scholarship to ensure that dentistry continues to be a learned profession.

This RFP built upon ADA House of Delegates Resolution 56H-2013, which called for the ADA to collaborate with various stakeholders, including dental educators, students, practicing dentists, health economists and other experts, to define the scope and specific aims of a comprehensive study of current dental education models. Resolution 56H-2013 resulted in the June 2014 ADA Council on Dental Education and Licensure Stakeholder Meeting, the outcomes from which provided the focus of Resolution 35B-2014 and shaped the initial framework for this study.

As stated in the ADA RFP:

The healthcare landscape is changing significantly. On the demand side, several demographic, economic, fiscal, and political forces are converging to bring important changes to how the population uses dental care. Adults are visiting the dentist less and less. The most significant increase in demand for dental care in the near term is among the Medicaid population. On the supply side, dental practice models are changing, the demographics of the workforce are shifting, and dental care payment models are evolving. The supply of

Domain 1: Developing a Taxonomy of Dental School Models

dentists is expected to increase steadily in the coming years.

Dental student debt is rising fast. While this trend is not specific to dentists and educational debt is rising for most professions, there are important implications for dentistry. Recent analysis shows that educational debt level affects some career choices but not others. Rising student debt levels are a direct result of rising cost of attendance, with universities shifting more expenses onto students as government funding declines. There is debate about the degree to which dental education models have evolved and adopted innovations to reduce the expense of training, although little analysis has been done in this field.

The American Dental Association is interested in commissioning a study of dental education models in an effort to improve the knowledge base.

Cavanaugh Hagan Pierson & Mintz, a management consulting firm with a strong focus on the health professions, teamed with the American Dental Education Association (ADEA), a membership association representing all dental schools in the United States and Canada, to submit a joint proposal in response to the RFP and was selected to conduct this study.

The *ADA Study on Approaches to and Implications of Alternative Dental Education Models* explores three primary research questions:

1. How can we classify different models of U.S. dental schools based on key

curricular and financial variables they share in common? (Domain 1)

2. What are the major revenue and expense drivers for dental education, and how do these differ across (types of) dental schools? (Domain 2)
3. Is the profession attracting and retaining the faculty needed to lead the research enterprise (and to ensure that dentistry continues to be a learned profession)? (Domain 3)

Per the ADA's request, the research team has prepared a separate report for each domain, though it is important to note the interconnected nature of the three research questions.

In Domain 1, the research team explored types of curricular models utilized for predoctoral dental education by U.S. dental schools and developed a taxonomy of those models.

In Domain 2, we examined the variation in expenditures across U.S. dental schools. We looked at key variables that impact revenues and expenses, including the impact curricular models have on the variation in expenditures across dental schools, using the taxonomy created in Domain 1.

In Domain 3, we examined the state of research and scholarship within dental education by looking at trends in funding, publications, and research faculty.

The report that follows focuses on Domain 1. While the report has been written to "stand alone," the research team recommends that the reader review all three reports in the series as there is a

Domain 1: Developing a Taxonomy of Dental School Models

great deal of interconnectivity among the three domains.

INTRODUCTION

A discussion of the evolution of the U.S. dental school curriculum has been ongoing since the Gies Report, *Dental Education in the United States and Canada*, was published in 1926. However, since 2008 there has been “a resurgence in the introspective work of the profession to examine what is taught, how it is taught, and in what sequence it is taught....”¹ Among the many factors contributing to the renewed focus on curricular models of dental education are rising tuitions, student indebtedness, duplication of effort among dental schools, and dentistry’s evolving role in the future of health care.¹

The numerous factors driving the renewed interest in the dental school curriculum are also influencing the curricular choices of dental schools. While some of the drivers of a dental school curriculum are outside the control of the dental school, such as the mission of the parent institution, state and local policies, new accreditation standards, and evolving national board exams, other choices are within the control of schools.² Among the decisions that are typically within the control of dental schools are the type and extent that technology is used in the education process, the incorporation of interprofessional content and faculty in the classroom, and the transfer of student clinic learning from onsite to community-based clinics. Combined, these

factors are shaping the curricular models of predoctoral dental school education.²

METHOD

The first task in developing a taxonomy of predoctoral dental education curricular models was to identify an appropriate statistical method. We chose cluster analysis, which is a statistical tool that sorts different objects into groups in such a way that it maximizes the similarities *within* the groups, while at the same time maximizing the differences *across* groups. As such, cluster analysis can be used to discover patterns in data, although it does not offer an explanation or interpretation of the structures.³ Clusters were found using IBM SPSS’s two-step cluster analysis algorithm.⁴

The second task necessary to develop a taxonomy of curricular models was to identify data on the curricular activities for all U.S. dental schools. The best source for this type of data is the Commission on Dental Accreditation *Survey of Dental Education Group IV: Curriculum* (CODA Curriculum Survey) and the *Survey of Dental Education Group III-Financial Management* conducted in the fiscal year ending in 2014 (CODA Finance Survey). The CODA Curriculum Survey collects data on predoctoral dental education programs for accreditation purposes. Therefore, all dental schools are required to fill out these surveys, resulting in a complete dataset. Among the data collected are information on the format of dental school curricula and clock hours for

Domain 1: Developing a Taxonomy of Dental School Models

various educational activities. The CODA Finance Survey collects revenue and expenditure data related to dental school programs and services.

After gaining access to the survey data, we conducted an exhaustive review of all variables contained in the surveys to identify those that could be used to distinguish dental schools by their curricular activity. We initially identified 12 variables that could be used to

distinguish the curricular activities of dental schools. After a review of the academic literature, discussions with current and former dental school faculty, and a meeting of the ADA-ADEA Joint Study Group,ⁱ we selected and finalized the seven variables that would be used to distinguish the curricular activity of U.S. dental schools (Table 1). To simplify describing the variables we created the following labels: community patient care, total

Table 1. Variables Used in Taxonomy

Variable	Survey and Question	Measurement
Community patient care	CODA Curriculum Survey (Question 77b(2))	Number of days that students spend in community clinics care over all years of dental school
Total patient care	CODA Curriculum Survey (Question 78 (a))	Number of hours students spend providing patient care over all years of dental school.
Sponsored research and training	CODA Finance Survey (Question 2(a))	Dollar amount of sponsored research and training at a dental school.
Comprehensive patient care	CODA Curriculum Survey (Question 76)	Whether schools use the Comprehensive Patient Care model in 1) the final year of the program, 2) the last two years of the program, 3) the last three years of the program, 4) in all years of the program, or 5) whether they use department- or discipline-based clinic models (e.g., specialty-based models).
Curricular integration	CODA Curriculum Survey (Question 73)	Degree of curricular integration in major sections of the dental school curriculum. Options include 1) no integration—traditional discipline-based; 2) Minor integration—a few courses integrated, but not entire curriculum; 3) Major integration—multiple curriculum components integrated into thematic units without discipline boundaries; and 4) Full integration—the entire curriculum is integrated around themes, strands or threads.
Pedagogy (captured in four CODA questions)	CODA Curriculum Survey (Question 78 (b, c, d, e))	Preliminary cluster analysis that categorizes schools by their reported clock hours spent on teaching through simulation, didactic, independent study, and small groups.
Technology (captured in seven CODA questions)	CODA Curriculum Survey (Question 74 a through g)	Preliminary cluster analysis that categorizes schools based on their use of technology to support their curricula. Schools responded with one of four possible options: whether each of the following technologies was fully implemented, partially implemented, developing/pilot project, not used in each of the following areas: 1) digital radiography, 2) advanced simulation, 3) digital textbooks and manuals, 4) electronic health records, 5) required laptop/mobile devices, 6) learning management system, 7) lecture capture.

ⁱ The ADA-ADEA Joint Study Group was comprised of eight volunteer leaders from the two associations, in addition to ADA and ADEA staff representatives. The charge to the Joint Study Group was to inform the research process by making collective sense of the data collected and by shaping the report's findings and recommendations. Joint Study Group members participated in a two-day workshop at which the initial findings from the study were reviewed and future research activities were outlined. Joint Study Group members also served as the review group for the research reports.

Domain 1: Developing a Taxonomy of Dental School Models

patient care, sponsored training and research, comprehensive patient care, curricular integration, pedagogy, and technology (for more detail, see Table 1).

These seven variables represent the best of the available survey data on which to draw curricular distinctions among dental schools, and they reflect the primary areas of change that are occurring within dental education. *Pedagogy* in recent years has evolved from traditional didactic teaching methods to greater use of simulation and small-group learning.¹ Class content is shifting from a department- or discipline-based clinic model to a comprehensive patient care model and from traditional discipline-based instruction to cross-disciplinary *curriculum integration*.^{1,5,6} Incorporation of *technology* into the educational process can both facilitate teaching and encourage adoption of new processes in dental care.⁷ *Research* activities deepens students' understanding of dentistry, develops critical thinking and analytic skills, and promotes dentistry as a learned profession.⁸ *Patient clinic care* allows students time to practice and gain expertise in the skills they are learning, while *community-based clinic care* enables students to work with a wider range of patients in a setting closer to the practice environment.⁹

Five of the variables came directly from data provided in the CODA Curriculum Survey. Two of the variables, pedagogy and technology, were created through analysis specific to each variable. This analysis allowed us to consider the multiple factors

related to technology and pedagogy as a whole and not place too much weight on individual questions from the CODA surveys.

There were numerous other variables we considered but ultimately chose not to include in the analysis, as they did not prove useful in distinguishing among different curricular models. Among the variables we chose to exclude were:

- **Annual clinic hours.** Time spent in the clinic during the first two years is different from the time spent during the last two years. During the first two years, clinic time involves more observation, while work done in later years involves more hands-on activities. Schools vary in how much early observational opportunities they provide to students. We also considered including clinic time each year for patient care and community-based care, but distinguishing between years complicated the model and would have required choosing a subjective weight.
- **On-site clinic care days.** It would have been redundant to use this variable since both total patient hours and community care days were included.
- **Dental school faculty.** The total number of faculty and percentage of full-time, part-time, and volunteer faculty were not included. The size and composition of the faculty could influence educational outcomes through increased student-to-faculty interactions. However, these variables as captured by the survey data used in this study do

Domain 1: Developing a Taxonomy of Dental School Models

not measure frequency or quality of student/faculty interactions.

- **Pedagogy by year.** For the four pedagogy variables—simulation, didactic, independent study, and small groups—we chose to use total clock hours rather than yearly clock hours. Our cluster analysis algorithm was unable to sort schools when hours by year for each of the four pedagogy variables was included due to the wide variations in combinations across schools.
- **Comprehensive Patient Care—dichotomous.** We considered modifying the comprehensive patient care model variable, so there would be two options—

comprehensive patient care or department-based clinic model.

Ultimately, we decided it was not an appropriate adjustment, given the wide variation with which schools responded.

RESULTS

The descriptive statistics for the variables used to create the taxonomy revealed a fair amount of variation in curricular activity among dental schools (Table 2). For example, community patient care days ranged from no hours to 315 hours, and dollars spent on research activity ranged from \$0 to \$21 million. Two variables,

Table 2. Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Community patient care days	64	45.3	55.9	0	315.0
Total patient care clock hours	65	2386	670	724	4233
Sponsored research and training dollars	65	\$4,069,520	\$4,643,437	\$0	\$21,173,063
Comprehensive patient care	65	2.66	1.035	1	5
Curricular integration	65	2.55	0.708	1	4
Pedagogy cluster (1=high didactic & indep. study; 2 = high simulation & small group)	65	1.66	0.477	1	2
Technology cluster (1=partially implemented/developing; 2=fully implemented)	65	1.55	0.501	1	2

Pedagogy cluster (didactic, simulation, small group, independent study)

Simulation hours	65	724.34	339.984	0	1756
Didactic hours	65	1690.15	555.949	488	3636
Independent study hours	65	205.49	362.434	0	2182
Small group hours	65	222.83	264.521	0	1486

Technology cluster

Digital Radiography	65	1.12	0.451	1	4
Advanced Simulation	65	2	1.075	1	4
Digital Textbooks	65	2.11	1.033	1	4
Electronic Health Records	65	1.2	0.474	1	3
Required Laptop	65	1.72	1.193	1	4
Learning Management System	65	1.31	0.635	1	4
Lecture Capture	65	1.68	0.752	1	4

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comprehensive patient care and curricular integration, are categorical variables coming directly from the CODA Curriculum Survey. These survey questions required schools to select a response from a range of possible answers. The responses show that schools span the full range of possible answers.

Using the seven variables described above to represent curricular activities, cluster analysis created five groupings of dental schools that maximized similarities based on the variables *within* the cluster while, at the same time, maximizing the differences *across* clusters. While cluster analysis does not explain why it grouped certain schools into a particular category, it does provide an output that ranks the order of importance of each variable in creating the clusters (Table 3). The ranking of variables reveals the complexity of grouping schools around their curricular activity. In other words, schools are not simply grouped by the one or two variables they most have in common. For example, a number of schools receive large amounts of funding for research and training. However, those schools are not concentrated in one cluster. Rather, they are spread out over all five clusters because research is just one of many curricular activities in which dental schools engage.

While the definitions of the clusters are multi-factorial and complex, we identified curricular themes for each cluster (Table 3):

- **Cluster 1** primarily consists of schools reporting multiple curricular components integrated into thematic units without

discipline boundaries, using the Comprehensive Patient Care model in all years of the program, and fully integrating technology into their teaching.

- **Cluster 2** primarily consists of schools beginning the Comprehensive Patient Care model in year two and integrating a few courses, but not the entire curriculum. In addition, all schools in this cluster make high use of simulation/small group instruction.
- **Cluster 3** primarily consists of schools that have implemented the Comprehensive Patient Care model during the last two years of the program and make high use of simulation/small group instruction.
- **Cluster 4** primarily consists of schools making high use of didactic and independent study and working toward greater implementation of technology.
- **Cluster 5** primarily consists of schools that have fully integrated their entire curriculum around themes, strands or threads; use the Comprehensive Patient Care model beginning in year two; and report a higher than average number of patient care hours and community patient care days.

DISCUSSION

Dental schools are undergoing a long, complex process of transforming their models of predoctoral education, which involves changes along numerous dimensions. The cluster analysis results show that schools vary

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Table 3. Cluster Groups and Rank of Variables by Importance

Ranking of importance within each cluster	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
1	Curricular Integration: 100% of schools in this cluster reported multiple curriculum components integrated into thematic units without discipline boundaries	Clinic Curriculum: 38% of schools in this cluster reported using the Comprehensive Patient Care model during the second through the final year of the program (1)	Clinic Curriculum: 100% of schools in this cluster reported using the Comprehensive Patient Care model in the last two years of the program	Pedagogy: 100% of schools in this cluster are high didactic and independent study	Curricular Integration: 83% of schools in this cluster reported the entire curriculum is integrated around themes, strands or threads
2	Clinic Curriculum: 52% of schools in this cluster reported using the Comprehensive Patient Care model in all years of the program	Patient Care: Schools in this cluster reported an average of 1,754 hours of patient care over all years	Pedagogy: 100% of schools in this cluster are high simulation and small group	Technology: 71% of schools in this cluster reported developing/piloting technology	Clinic Curriculum: 83% of schools in this cluster reported using the Comprehensive Patient Care model during the second through the final year of the program
3	Technology: 71% of schools in this cluster reported full implementation	Curricular Integration: 100% of schools in this cluster reported few courses integrated, but not entire curriculum	Community patient care: Schools in this cluster reported an average of 28 days of community-based patient care over all years	Community patient care: Schools in this cluster reported an average of 26 days of community-based patient care over all years	Patient Care: Schools in this cluster reported an average of 3,093 hours of patient care over all years
4	Pedagogy: 58% of schools in this cluster are high simulation and small group	Pedagogy: 100% of schools in this cluster are high simulation and small group	Curricular Integration: 83% of schools in this cluster reported few courses integrated, but not entire curriculum	Clinic Curriculum: 55% of schools in this cluster reported using the Comprehensive Patient Care model in the last two years of the program	Research: Sponsored research and training programs averaged \$2.2 million
5	Research: Sponsored research and training programs averaged \$5.3 million	Community patient care: Schools reported an average of 33 days of community-based patient care over all years	Patient Care: Schools in this cluster reported an average of 2,610 hours of patient care over all years	Patient Care: Schools in this cluster reported an average of 2,270 hours of patient care over all years	Community patient care: Schools in this cluster reported an average of 136 days of community-based patient care over all years
6	Patient Care: Schools in this cluster reported an average of 2,325 hours of patient care over all years	Research: Sponsored research and training programs averaged \$3.4 million	Technology: 50% of schools in this cluster reported full implementation	Curricular Integration: 66% of schools in this cluster reported few courses integrated, but not entire curriculum	Technology: 83% of schools in this cluster reported full implementation
7	Community patient care: Schools reported an average of 49 days of community-based patient care over all years	Technology: 63% of schools in this cluster reported full implementation	Research: Sponsored research and training programs averaged \$3.9 million	Research: Sponsored research and training programs averaged \$3.6 million	Pedagogy: 83% of schools in this cluster are high simulation and small group (group 2)

(1) The result that only 38% of the schools reported using Comprehensive Patient Care during their second through final years is an example of how the clusters are based on a variety of variables, not just the top reported variable.

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significantly in the aspects of change on which they have chosen to focus. Even within each of the five clusters significant variation existed among schools for some variables, evidenced by the less than 100% of schools reporting the same answers. In other words, schools within a cluster that were similar in one variable would often differ in other variables. **The variation among schools means that most schools are not easily grouped with a subset of identical schools.**

The fact that each school is following its own curriculum evolution also suggests that schools will likely move among clusters each year and that the clusters themselves will change over time. Furthermore, the importance of different variables within a cluster will likely need to be reevaluated and modified in the future. Nonetheless, the process used to create the taxonomy was an objective, statistical methodology that can be easily replicated. This will allow us to track over time how groups of schools evolve and adapt their curricular models.

Given the sensitivity of the cluster analysis to changes in the variables used, changes made by schools to their curricular approaches, and the number of clusters created, the members of the ADA-ADEA Joint Work Group felt it was not appropriate to list the individual schools composing each cluster until this new taxonomy was acculturated, refined and more widely understood. This recommendation was further affirmed when the regression analysis performed as part of *Domain 2: Examining the Variation in Expenditures Across U.S. Dental Schools* indicated that the predoctoral curricular model was not a predictor of expenditures across dental schools (see a full discussion of this in the Report on Domain 2).

That said, the research team feels it is important to note that the individual schools composing each cluster are more varied than the single-dimensional descriptors that have traditionally been used to categorize dental schools, as illustrated in Table 4.

Table 4. Distribution of Dental Schools Within Clusters by Select Criteria

		Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
Total Number of Dental Schools in the Cluster (n=64)		21	8	18	11	6
Institutional Status	Public	10	6	12	8	3
	Private	11	2	6	3	3
Year dental school was founded	Pre-1980	14	8	17	11	3
	1980 -	7	0	1	0	3
Level of NIH Research Funding	Top 20 sponsored research funded schools	7	2	6	5	0
	Additional schools	14	6	12	6	6
Class Size	Larger (> 400)	5	1	12	3	1
	Smaller (< 400)	16	7	6	8	5

CONCLUSION

This study offers a starting point for understanding the different ways that dental schools organize their curricula to educate predoctoral students. It highlights the similarities and differences among the different approaches schools are taking in adapting their curricula. In applying cluster analysis methodology to the CODA data reported by schools, this study was the first to develop a data-driven taxonomy of the predoctoral dental education curricular models. The results provide a unique perspective on how a range of curricular

activities fit together, rather than the typical peer-group comparisons that rely on only one or two variables. Ultimately, we found that schools vary among many dimensions, limiting our ability to characterize simple, distinct models that multiple schools use. In this period of curricular transition, schools will likely move among clusters rather than fit into a static taxonomy. One of the advantages of our methodology is that it can be easily replicated so that changes in curricular activity can be captured periodically and the taxonomy of curricular models updated.

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ADA Study on Approaches to and Implications of Alternative Dental Education Models

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Domain 2: Examining the Variation in Expenditures Across U.S. Dental Schools

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EXECUTIVE SUMMARY

The *ADA Study on Approaches to and Implications of Alternative Dental Education Models* explores three primary research questions:

1. How can we classify different models of U.S. dental schools based on key curricular and financial variables they share in common? (Domain 1)
2. What are the major revenue and expense drivers for dental education, and how do these differ across (types of) dental schools? (Domain 2)
3. Is the profession attracting and retaining the faculty needed to lead the research enterprise (and to ensure that dentistry continues to be a learned profession)? (Domain 3)

The report that follows focuses specifically on Domain 2.

A number of ideas have been posited about ways in which dental schools can operate more efficiently. However, dental schools are not monolithic. They vary significantly in many ways, including their educational methods, use of onsite and community-based clinics, level of research and scholarship, reliance on part-time and volunteer faculty, and size and type of student body, among other factors, making it likely that the drivers of their revenues and expenses also vary significantly.

Using data from the Commission on Dental Accreditation (CODA) *Survey of*

Dental Education Group IV: Curriculum, the *CODA Survey of Dental Education Group III- Financial Management*, and the *American Dental Education Association (ADEA) Clinic Finance Survey, 2015*, this study examines the variation in expenditures across U.S. dental schools. We explored key variables that drive revenues and expenses, including the impact predoctoral curricular models have on the variation in expenditures across dental schools. By examining what is driving the variation among schools, we will have a better understanding of the opportunities that might exist to reduce expenditures and/or increase revenue.

As part of the study, we conducted an analysis of variance (ANOVA) to examine whether dental schools with similar curricular modelsⁱ also had similar levels of expenditures. This would reveal whether a school's curricular model might have an impact on a dental school's expenditures. The ANOVA showed that curricular models were not correlated with total expenditures or expenditures per student. This is an important finding, as recent discussions on the cost effectiveness of dental schools have often focused on the dental school curriculum.¹ The results of this study show that the curricular approach a school takes does not predict that school's revenue or expenditures.

Next, we conducted a regression analysis to examine a range of possible

ⁱ A taxonomy of predoctoral curricular models for dental schools was developed as part of Domain 1 of the ADA Study.

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factors to determine which dental school attributes are correlated with four key variables: 1) total expenditures, 2) expenditures per student, 3) nonfaculty dental school clinic expenditures and 4) total revenue.

The regression results revealed that some of the factors expected to make a difference in expenditures were significant, while others were not. The findings affirmed that many of the statistically significant variables that predict dental school expenditures are ones that are commonly cited in discussions of expenditures in higher education more broadly: size of faculty, cost of living and number of students. The study also found that the variables that were significant predictors of dental school expenditures tended to be ones that could be offset by revenue generation (such as research and patient care), play a role in the delivery of education (such as number of full-time faculty and clinical patient care services) or are beyond the control of the school (such as cost of living).

The data available did not reveal a single “best way” to model dental schools that would result in increased revenue or reduced expenses. Many individual dental schools have identified strategies to increase revenue or reduce expenses that have been successful in their specific institutions. However, given the significant variation in the curricular approach and revenue model of dental schools, it does not appear there are quick, easy and generalizable strategies to reduce expenses or increase revenue

broadly across dental schools, at least without sacrificing the quality of the educational experience or the investment in research required to have dentistry remain a learned profession.

BACKGROUND

In February 2015, the American Dental Association (ADA) issued a Request for Proposals (RFP) to conduct a study of dental education models (*ADA Study on Approaches to and Implications of Alternative Dental Education Models*). The study was authorized by the ADA House of Delegates Resolution 35B-2014, which called for the ADA to pursue a focused study to examine the long-term sustainability of dental schools, the efficiency of the current dental school curricula and delivery methods, and the appropriate levels of scholarship to ensure that dentistry continues to be a learned profession.

This RFP built upon ADA House of Delegates Resolution 56H-2013, which called for the ADA to collaborate with various stakeholders, including dental educators, students, practicing dentists, health economists and other experts, to define the scope and specific aims of a comprehensive study of current dental education models. Resolution 56H-2013 resulted in the June 2014 ADA Council on Dental Education and Licensure Stakeholder Meeting, the outcomes from which provided the focus of Resolution 35B-2014 and shaped the initial framework for this study.

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As stated in the ADA RFP:

The healthcare landscape is changing significantly. On the demand side, several demographic, economic, fiscal, and political forces are converging to bring important changes to how the population uses dental care. Adults are visiting the dentist less and less. The most significant increase in demand for dental care in the near term is among the Medicaid population. On the supply side, dental practice models are changing, the demographics of the workforce are shifting, and dental care payment models are evolving. The supply of dentists is expected to increase steadily in the coming years.

Dental student debt is rising fast. While this trend is not specific to dentists and educational debt is rising for most professions, there are important implications for dentistry. Recent analysis shows that educational debt level affects some career choices but not others. Rising student debt levels are a direct result of rising cost of attendance, with universities shifting more expenses onto students as government funding declines. There is debate about the degree to which dental education models have evolved and adopted innovations to reduce the expense of training, although little analysis has been done in this field.

The American Dental Association is interested in commissioning a study of dental education models in an effort to improve the knowledge base.

Cavanaugh Hagan Pierson & Mintz, a management consulting firm with a strong

focus on the health professions, teamed with ADEA, a membership association representing all of the dental schools in the United States and Canada, to submit a joint proposal in response to the RFP and was selected to conduct this study.

The *ADA Study on Approaches to and Implications of Alternative Dental Education Models* explores three primary research questions:

1. How can we classify different models of U.S. dental schools based on key curricular and financial variables they share in common? (Domain 1)
2. What are the major revenue and expense drivers for dental education, and how do these differ across (types of) dental schools? (Domain 2)
3. Is the profession attracting and retaining the faculty needed to lead the research enterprise (and to ensure that dentistry continues to be a learned profession)? (Domain 3)

Per the ADA's request, the research team has prepared a separate report for each domain, though it is important to note the interconnected nature of the three research questions.

In Domain 1, the research team explored types of curricular models utilized for predoctoral dental education by U.S. dental schools and developed a taxonomy of those models.

In Domain 2, we examined the variation in expenditures across U.S. dental schools. We looked at key variables that impact

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revenues and expenses, including the impact curricular models have on the variation in expenditures across dental schools, using the taxonomy created in Domain 1.

In Domain 3, we examined the state of research and scholarship within dental education by looking at trends in funding, publications and research faculty.

The report that follows focuses on Domain 2. While the report has been written to “stand alone,” the research team recommends that the reader review all three reports in the series as there is a great deal of interconnectivity among the three domains.

INTRODUCTION

Dental schools are large and complex organizations that have many functions. They are tasked with educating future dentists and dental researchers, producing cutting-edge research and scholarship, and providing clinical patient care services, often to low-income and underserved patients.² Since the recession of 2008–09, state support for higher education has been tenuous at best and nonexistent at worst, thus causing public universities to tighten their belts and look for savings where possible.³ Similarly, private universities have seen their endowment growth slow and philanthropic giving decline, causing them to look hard at their budgets. At the same time, increases in tuition and rising levels of student indebtedness are creating a challenge for colleges and universities about

the cost of higher education. As a result, dental schools are having to determine how to stay on the cutting edge of teaching, research and patient care in a more economically efficient way.

A number of ideas have been posited about ways in which dental schools can operate more efficiently.⁴ However, dental schools are not monolithic. They vary significantly in many ways, including their educational methods, use of onsite and community-based clinics, level of research and scholarship, reliance on part-time and volunteer faculty, and size and type of student body, among other factors, making it likely that the drivers of their expenses also vary significantly. A “one size fits all” approach to financial efficiency may not exist.

This study takes a detailed look at the expense drivers for dental schools and examines whether the differences in how dental schools operate explains the variation in their expenditures. The goal is to identify various aspects of the model for dental education that explain the variance in expenditures among dental schools. Understanding which factors influence dental school expenditures is critical to their long-term financial viability and sustainability. By examining what is driving the variation among schools, we will have a better understanding of the opportunities that might exist to reduce expenditures and/or increase revenue.

To accomplish this goal, we first looked at whether schools with similar curricular

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models have similar expenditures. Second, we looked at a range of possible factors to determine what attributes of dental schools are correlated with four dependent variables: 1) total expenditures, 2) expenditures per student, 3) nonfaculty dental school clinic expenditures, and 4) total revenue.

The data for this study came from the Commission on Dental Accreditation (CODA) *Survey of Dental Education Group III- Financial Management* conducted in the fiscal year ending 2014 (CODA Finance Survey), the CODA *Survey of Dental Education Group IV: Curriculum* (CODA Curriculum Survey), and the *ADEA Clinic Finance Survey, 2015*. The two CODA surveys are part of a series of four annual surveys completed by all accredited predoctoral, advanced and allied dental education programs in the United States and Puerto Rico. Because all U.S. dental schools are required to complete the CODA surveys as part of their accreditation processes, the dataset includes a 100% response rate. The CODA Finance Survey provides financial information from the fiscal year ending in 2014, including revenue and expenditures by individual category and in total. The CODA Curriculum Survey, which was updated in 2014–15, provides schools an internal benchmarking tool that monitors compliance to the CODA standards and prepares programs for future site visits.⁵ In addition, we used data from the *ADEA Clinic Finance Survey, 2015* (administered in the summer of 2015), which was designed to collect data related to the predoctoral and advanced

dental education clinics of U.S. dental schools. The response rate for the clinic survey was 78% (48 schools).

METHOD

To identify which characteristics explain the variation in expenditures across dental schools, we first looked at whether the dental school predoctoral curricular model is correlated with expenditures. A school's curricular model, particularly related to the role of the dental clinic, is often cited as a major contributor to the growth in expenditures.^{4,6} To examine the relationship between curricular models and the variance in expenditures across dental schools, we first sorted the schools into similar groups using cluster analysis. (See the report *Domain 1: Developing a Taxonomy of Dental School Models* for a full description of the methodology and results of the cluster analysis.)

Cluster analysis was used to create a taxonomy of curricular models by grouping similar schools together. The taxonomy was created based on dental schools' responses to seven questions from the CODA Curriculum Survey. Cluster analysis allowed us to identify five clusters of dental schools that are distinguishable based on key variables in their predoctoral curricular models. We then used analysis of variance (ANOVA) to examine whether the clusters of schools with similar curricular models also had similar levels of expenditures by determining whether there was a significant difference in the mean expenditure,

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expenditure per student (head count), or expenditure per DDSE (Doctor of Dental Surgery Equivalent)ⁱ between the five clusters of schools. (An ANOVA is a statistical test used to determine whether or not the means of several groups are equal.) In other words, the ANOVA tested whether the expenditures of schools *within* a curricular cluster are more similar than the expenditures of schools *across* different clusters. If they are it would suggest that a dental school's curricular model is correlated to its revenue and expenses.

In addition to curricular models, many other dental school attributes could explain the variation in expenditures. We used regression analysis to look at a range of factors that could potentially explain differences in expenditure. The variables used in the analysis are described in Table 1. For the dependent variable, at the ADA's request, we considered both total expenditures and expenditures per capita (using both student count and DDSE). The regression using total expenditures as the dependent variable examines which factors influence the overall cost of operating a dental school, with the number of students being one of many factors. The regression using expenditure per student identifies which factors influence the cost of educating a student. Expenditure per student using

head count accounts for differences in the overall number of all students enrolled at a school, while expenditures per DDSE accounts for the differences in resources used by different types of students.

To capture attributes of dental schools that could explain expenditures, we used variables that reflected the size (measured by number of faculty and students), institutional structure of the school, broader environment in which the school was located and curriculum variables incorporated by the school. After a review of the available data, consultation with dental school faculty and discussion with the ADA-ADEA Joint Study Group,ⁱⁱ we identified 16 variables for further exploration. Proxies for the size and structure of the school included public or private, presence of a Ph.D. or M.S. program, total faculty, percentage of part-time faculty, percentage of volunteer faculty and number of students. Separate analysis was done using weighted student numbers (DDSE) and using a head count of predoctoral dental students. Results using DDSE are presented, but were similar to the results for a head count of predoctoral students.

We also included DDSE squared to identify whether there is an optimum number of students that dental schools

ⁱ DDSE is the weighted average (1.0 x undergraduate D.D.S. enrollment) + (1.7 x advanced specialty enrollment) + (0.5 x allied enrollment) + (1.0 x nonspecialty graduate enrollment). DDSE is often used instead of student head count and was developed to weight the relative expense of different types of students at a dental school.

ⁱⁱ The ADA-ADEA Joint Study Group was comprised of eight volunteer leaders from the two associations, in addition to ADA and ADEA staff representatives. The charge to the Joint Study Group was to inform the research process by making collective sense of the data collected and by shaping the report's findings and recommendations. Joint Study Group members participated in a two-day workshop at which the initial findings from the study were reviewed and future research activities were outlined. Joint Study Group members also served as the review group for the research reports.

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should enroll to achieve financial efficiency. The basic idea is that while expenditures increase as the number of students increase, the rate of increase is falling. For example, the fixed costs of the building and equipment are spread across more students as enrollment increases. However, after a certain level of enrollment, the rate of increase in expenditures begins to rise as

larger facilities or more equipment need to be purchased. Schools can maximize their net revenue by enrolling students up to the point where the rate of increase in expenditures begins to rise.

Cost of living index and Medicaid reimbursement index were also included to capture the broader economic environment in which the school is located and

Table 1. Descriptive Statistics

	N	Mean	Standard Deviation	Minimum	Maximum
Expenditure per DDSE	65	\$111,579	\$35,542	\$26,200	\$224,353 (1)
Expenditure per student (all students)	65	\$119,922	\$41,992	\$26,200	\$224,353
Total expenditure	65	\$53,043,745	\$29,618,122	\$7,613,908	\$179,278,084
Resident tuition and fees 2012–13	62	\$41,015	\$17,316	\$10,799	\$90,264
Nonresident tuition and fees 2012–13	62	\$56,795	\$14,946	\$20,530	\$93,233
Independent Variables					
Community patient care days	64	45.3	55.9	0	315.0
Total patient care clock hours	65	2386	670	724	4233
Sponsored research and training dollars (2)	65	\$4,069,520	\$4,643,437	\$0	\$21,173,063
Comprehensive patient care	65	2.66	1.035	1	5
Curricular integration	65	2.55	0.708	1	4
Pedagogy cluster (1 = high didactic and independent study; 2 = high simulation and small group)	65	1.66	0.477	1	2
Technology cluster	65	1.55	0.501	1	2
Medicaid reimbursement index	64	0.45	0.11	0.27	0.7
Cost of living index	65	111.7	26.3	87.2	216.7
Ph.D. or M.S. program	65	0.4769	0.50335	0	1
DDSE	65	478	255	30	1,718
Students, all	65	448	244	30	1,727
Part-time faculty (%) (3)	62	0.4139	0.18876	0	0.83
Volunteer faculty (%)	62	0.1142	0.17976	0	0.67
Total faculty	62	209.55	134.962	26	634
Clinic Variables					
Dental clinic expenditures (nonfaculty) (4)	65	\$8,314,751	\$6,209,194	\$0	\$35,344,000
Clinic expenses per DDSE	63	\$17,666	\$8,491	\$2,372	\$42,226
Number of patient visits by junior and senior students	48	62,778.90	34,052.22	0.00	127,896.00
Clinic revenue from junior and senior students	48	\$2,801,238.79	\$1,587,539.47	0.00	\$6,500,000.00
Patient hours by junior and senior students	47	1,695.34	676.88	44.00	3,327.00
Number of junior and senior students	48	175.65	78.40	50.00	380.00
Clinic faculty (% total faculty)	62	0.71	0.15	0.00	0.90

Source: Nasseh K, Vujicic M, Yarbrough C. A ten-year, state-by-state, analysis of Medicaid fee-for-service reimbursement rates for dental care services. Health Policy Institute Research Brief. American Dental Association. October 2014. Available from: http://www.ada.org/-/media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_1014_3.ashx.

- (1) One school, which had recently opened, was excluded because it did not yet have a full set of students across which to distribute costs.
- (2) Eight schools reported zero research dollars.
- (3) One school reported no part-time faculty and six schools had fewer than 10 part-time faculty.
- (4) The two schools that reported zero dental clinic expenditures are new schools that may not yet have students in clinics.

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operates. The internal curriculum decisions made by the school were represented by the curricular model variables used to create the clusters in Domain 1 of this study: community patient care days, sponsored research and training dollars, pedagogy focus, total patient care clock hours, curricular integration, curricular care model and technology. (See the report on Domain 1 for a full discussion of the curriculum variables.)

Dental school clinics are often cited as a major driver of expenditures.⁴ Because clinical faculty compose the greatest share of overall clinic expenses, they dominate any analysis of total clinical expenditure. To advance the conversation on clinic expenses beyond faculty, we used regression analysis to examine which factors may contribute to nonfaculty clinic expenditures. The reason for focusing on nonfaculty clinic expenditures is that faculty and staff tend to represent the majority of expenses for any college or university,⁷ and dental schools and dental clinics are no exception. Our analysis of the correlation between dental clinic expenses and dental clinic faculty found the two are highly correlated. As such, the easiest way to reduce dental clinic expenses is to reduce faculty, but this is not likely an ideal solution.

By focusing on nonfaculty expenditures, we can explore alternate possibilities for reducing dental clinic expenses. Dependent variables for the clinic regression were nonfaculty dental clinic expenditures and nonfaculty dental clinic expenditures per DDSE from the CODA Finance Survey.

Some explanatory variables were unique to clinics, while others were similar to the expenditure regressions. The explanatory variables unique to the clinic regression were number of patient visits for junior and senior students, patient hours for junior and senior students and clinic faculty as a percentage of total faculty. The junior and senior patient visits and patient hours data came from the ADEA Clinic Finance Survey and were included because they were specific to the expenditures of dental clinics. Because the ADEA Clinic Finance Survey had a smaller sample, we chose not to include that data in the total expenditure regressions. Similar to the total expenditure regressions, we included cost of living index, Medicaid reimbursement index, private or public, community patient care days, DDSE and DDSE squared.

Variables not included in the clinic regression were research; pedagogy; comprehensive patient care; part-time, volunteer and full-time faculty; and whether there were Ph.D. and M.S. programs. These variables were excluded because they were either represented by a different variable, such as junior and senior patient visits instead of total patient care clock hours, or they were less relevant to the clinic, such as the curriculum or faculty variables.

Finally, we looked at the extent that the variables used to explain expenditures could also explain total revenues. The same set of variables used in the expenditure regressions were used as explanatory variables, including public or private, presence of Ph.D. or M.S.

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programs, total faculty, percentage of part-time faculty, percentage of volunteer faculty, number of students, number of students squared, cost of living index and Medicaid reimbursement index, community patient care days, sponsored research and training dollars, pedagogy focus, total patient care clock hours, curricular integration, curricular care model and technology.

RESULTS

The ANOVA shows that the curricular models were not correlated with expenditures or expenditures per student. In other words, the variation in average dental school expenditures within a particular curricular model was not significantly different than the variation in expenditures across curricular models. As such, the differences in predoctoral curricular models do not explain the

differences in expenditures across dental schools. This is an important finding, as recent discussions on the cost effectiveness of dental schools have focused on the dental school curriculum.¹ The results of this study show that the curricular approach a school took did not predict the school's revenues or expenditures.

Because the curricular models did not predict dental school expenditures, we used regression analysis to look at a broader range of variables, including the individual variables used to create the curricular models. The regression results reveal that some of the factors expected to make a difference in expenditures were significant, while others were not. For expenditure per student (expenditure per DDSEⁱ), dollars spent on sponsored research and training and total patient care hours were the only curricular variables that were significant (Table 2).

Table 2. Dependent Variable: Expenditure per DDSE

	Coefficient	Standard Error	Significance
(Constant)	48596.329	44407.891	0.28
Private (public = 0)	-30445.896	8874.881	0.001
Community patient care days	-74.061	76.106	0.336
Sponsored research and training dollars	0.002	0.001	0.02
Pedagogy cluster (1 = high didactic and independent study; 2 = high simulation and small group)	-7443.668	7531.168	0.328
Total patient care clock hours	13.426	6.301	0.039
Comprehensive patient care	-2012.192	3864.505	0.605
Curricular integration	6348.941	5858.15	0.285
Technology cluster	-8442.98	8124.819	0.305
Medicaid reimbursement index	51054.097	32812.428	0.127
Cost of living index	750.919	187.192	0.000
Total faculty	245.743	57.839	0.000
Part-time faculty (%)	-59810.578	26145.366	0.027
Volunteer faculty (%)	-102931.442	35624.895	0.006
Ph.D. or M.S. program	-1906.726	9149.942	0.836
DDSE	-135.926	56.957	0.021
DDSE squared	-0.002	0.03	0.936

R-squared adjusted = 0.539

ⁱ Results for expenditure per student were similar to expenditure per DDSE. Therefore, only expenditures per DDSE are reported here.

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Table 3. Top Factors That Influence Expenditures per Student

Private (public = 0)	Decrease (public schools had higher expenditures)
Sponsored research and training dollars	Increase
Total patient care clock hours	Increase
Cost of living index	Increase
Total, all faculty	Increase
Part-time faculty (%)	Decrease
Volunteer faculty (%)	Decrease
Students (DDSE)	Increase

Several institutional variables influenced expenditures (Table 3). Private schools had a lower expenditure per student. The total hours spent on patient care increased per capita expenditures. Total faculty increased the expenditure per student, while the percentage of part-time and volunteer faculty reduced the expenditure per student. Fewer students increased the cost per DDSE, but DDSE squared was not significant. Similar results were found when using a head count of predoctoral students rather than DDSE. Among the environmental factors, cost of living was significant, but the Medicaid reimbursement

index was not. Overall, the combination of independent variables that we controlled for in this regression model explained 54% of the variation across dental schools in expense per DDSE. Specifically, the regression model had an R-square of 0.539, meaning that the independent variables explained just over half of the variation in expenditure per DDSE across schools.

The results were similar when total expenditure, rather than expenditure per DDSE, was used as the dependent variable with three exceptions (Table 4 and Table 5). First, pedagogy (one of the curricular model variables) was significant. Higher expenses

Table 4. Dependent Variable: Total Expenditures

	Coefficient	Standard Error	Significance
(Constant)	-24464467.06	15869798.18	0.131
Private (public = 0)	-30445.896	8874.881	0.001
Community patient care days	-33421.755	27197.471	0.226
Sponsored research and training dollars	1.22	0.313	0.000
Pedagogy cluster (1=high didactic and independent study; 2 = high simulation and small group)	-6064117.697	2691370.978	0.029
Total patient care clock hours	5255.267	2251.671	0.024
Comprehensive patient care (CURRCLIN)	265370.508	1381036.423	0.849
Curricular integration (CURRINT)	-874865.121	2093494.101	0.678
Technology cluster (CURRTECH)	-1089194.009	2903520.944	0.709
Medicaid reimbursement index	15721572.22	11725992.96	0.187
Cost of living index	341639.313	66895.654	0.000
Total faculty	96988.245	20669.548	0.000
Part-time faculty (%)	-14594588.07	9343422.286	0.126
Volunteer faculty (%)	-35570187.12	12731068.21	0.008
Ph.D. or M.S. program	-2709183.316	3269863.274	0.412
DDSE	59583.165	20354.406	0.005
DDSE squared	-8.565	10.775	0.431

R-squared adjusted =0.907

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Table 5. Top Factors That Influence Total Expenditures

Private (public = 0)	Decrease (public schools had higher expenditures)
Sponsored research and training dollars	Increase
Pedagogy cluster	Decrease (higher didactic and independent study had higher expenditures)
Total patient care clock hours	Increase
Cost of living index	Increase
Total, all faculty	Increase
Part-time faculty (%)	Decrease
Volunteer faculty (%)	Decrease
Students (DDSE)	Increase

were associated with greater use of high didactic and independent study. Second, part-time faculty as a percentage of total faculty was no longer significant. However, like expenditure per capita, total faculty number increased expenditure, while the percentage of volunteer faculty reduced expenditure. Third, the model explained 90% of the variation in total expenditures (adjusted R-square was 0.907), which was a significant improvement over expenditure per DDSE.

Because clinical faculty compose the greatest share of overall clinic expenses, they dominate any analysis of total clinical expenditures. A simple way to reduce clinical expenses would be to reduce faculty cost. However, doing so would also impact the school's revenue model and educational

quality. To advance the conversation on clinic expenses beyond faculty, we decided to examine which factors may contribute to the nonfaculty clinic expenses. Unlike expenditures, the proxies available to explain nonfaculty clinic finances did not adequately capture the variation in clinic expenses. Using nonfaculty dental clinic expenses per DDSE (Table 6) and total nonfaculty dental clinic expenses (Table 7) as a dependent variable reveals that none of the explanatory variables included explain expenditures. Only the cost of living index was significant at the 10% level. Furthermore, the adjusted R-squared was 0.130 for clinic expenditures per capita and 0.392 for total expenditures, indicating a low

Table 6. Clinic Expenses per DDSE

	Coefficient	Standard Error	Significance
(Constant)	488.189	14568.864	0.973
Clinic faculty (% total faculty)	11824.845	12346.992	0.345
Cost of living index	140.497	75.992	0.073
Medicaid reimbursement index	-3750.981	12144.73	0.759
Private (public = 0)	-2754.808	3484.423	0.435
Total clinic science faculty	-3.425	13.843	0.806
Patient hours by junior and senior students	-1.531	2.126	0.476
Patient visits by junior and senior students	0.127	0.077	0.11
Community patient care days	-38.112	27.281	0.171
DDSE	-16.486	31.133	0.6
DDSE squared	-0.003	0.024	0.888

R-squared adjusted =0.130

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Table 7. Clinic Expenses

	Coefficient	Standard Error	Significance
(Constant)	-10312839	7798661.753	0.195
Clinic faculty (% total faculty)	3231279	6609301.87	0.628
Cost of living index	79946	40678.341	0.058
Medicaid reimbursement index	-2101599	6501031.278	0.748
Private (public = 0)	-202100	1865199.543	0.914
Total clinic science faculty	-3151.362	7410.359	0.673
Patient hours by junior and senior students	-1216.794	1138.091	0.293
Patient visits by junior and senior students	58.78	41.321	0.164
Community patient care days	-20921.096	14603.644	0.161
DDSE	26428.946	16665.511	0.122
DDSE squared	-18.494	12.843	0.159

R-squared adjusted = 0.392

overall fit of the model (13% and 39%, respectively). As such, the analysis suggests that the primary strategy for reducing clinical expenditures is to reduce faculty costs, with the caveat that in doing so a school may also negatively impact clinical revenue and educational quality.

Finally, we looked at total revenue as the dependent variable (Table 8). Most of the explanatory variables used did not explain the variation in revenue across schools. Only the cost of living index, total

faculty, and percentage of volunteer faculty were significant. A higher cost of living increased revenue. More faculty increased revenue, while a higher percentage of volunteer faculty reduced revenue.

DISCUSSION

The results of this study affirm that many of the statistically significant variables that predict dental school expenditures are commonly cited in discussions of expenditures in higher education more broadly, such as size of faculty, cost of living

Table 8. Total Revenue

	Coefficient	Standard Error	Significance
(Constant)	20,547,611	30,978,810	0.51
Private (public = 0)	-9,133,903	6,296,814	0.15
Community patient care days	-13,153.75	53,371.51	0.81
Sponsored research and training dollars	0.82	0.61	0.19
Pedagogy cluster (1 = high didactic and independent study; 2 = high simulation and small group)	-4,965,068	5,294,705.88	0.35
Total patient care clock hours	6,249.90	4,390.97	0.16
Comprehensive patient care (CURRCLIN)	-3,921,599	2,712,269	0.16
Curricular integration (CURRINT)	-631,574	4,128,280	0.88
Technology cluster (CURRTECH)	-3,516,124	5,733,021	0.54
Medicaid reimbursement index	6,055,601	22,998,993	0.79
Cost of living index	261,538	129,613.69	0.05
Total faculty	155,499	40,280	0.00
Part-time faculty (%)	-24,837,087	18,354,363	0.18
Volunteer faculty (%)	-71,571,051	24,626,562	0.01
Ph.D. or M.S. program	6,935,686	6,261,868	0.27
students, all	-10,537	39,362	0.79
students, all, squared	22.29	20.71	0.29

R-squared adjusted = 0.694

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and number of students. The variables that were significant tended to be ones that could be offset by revenue generation, such as research and patient care; play a role in the delivery of education, such as number of full time faculty; or are beyond the control of the school, such as cost of living. As such, they do not provide any clear targets for reducing expenditures without impacting revenue or the educational experience.

The predoctoral curricular models as a whole are not influencing expenses, as evidenced by the ANOVA results. Furthermore, even the individual components of the curricular model clusters did not predict expenditures, with the exception of research and the total amount of patient care that students provide. Both of these factors increase expenditures, but those expenses may be offset by increased revenue. Even if they are not fully compensated, both of these factors are important components of the educational process.

The regression found that private schools have a lower expenditure per student. A closer look at the data reveals that the average expense per DDSE at public schools was higher at \$122,868 (S.D. \$34,462),ⁱ while at private schools the average expense was \$95,079 (S.D. \$30,802). Public schools tend to conduct more research (public schools averaged \$4,919,707 [S.D. \$5,245,508] than private schools \$2,794,239 [S.D. \$3,248,864]),

which may be contributing to the higher expenditures. Further investigation into the differences is needed to understand the relationship between public versus private schools and expenditure per student.

The other factors that affect costs are generally well-known components. The cost of living index is important given the range of locations in which schools operate. Having a larger faculty raises expenses but also increases revenue, while having a larger share of part-time and volunteer faculty reduces expenses but also reduces revenue. Again, this is likely a trade-off between quality (smaller student-to-faculty ratios) and cost. Finally, having more students reduced the cost per student, as more of the fixed costs of the facility and equipment can be distributed among more students. However, the number of students squared was not significant, meaning that under the specifications we used, we did not find an optimum number of students that maximizes net revenue.

Dental school clinics comprise a large share of a school's budget and often operate at a net loss. Unfortunately, we did not have adequate proxies to capture the factors that were driving the variations in clinical expenditures across dental schools. The variables used come from sources that were not designed to capture the variations in nonfaculty dental expenditures across schools. Future surveys may want to specifically address this shortcoming.

ⁱ Expense per DDSE excluded one school that had recently opened and did not yet have a full set of students across which to distribute costs.

CONCLUSION

The data available do not reveal a singular approach to modeling dental schools that would result in increased revenue or reduced expenses. Said differently, there is no “magic bullet” or single “best way” to model dental schools.

Dental education, with its emphasis on research and clinical operations, is an inherently expensive undertaking. Most, if not all, of the variables explored in this study will impact revenue and expenses. However, only four of the variables were found to be statistically significant in explaining the variation in expenses among dental schools: number of faculty, level of research activities,

cost of living, and clinic expenses (measured as patient care). Many individual dental schools have identified strategies to increase revenue or reduce expenses that have been successful in their specific institutions. However, given the significant variation in the curricular approach and revenue model of dental schools, it does not appear there are quick, easy and generalizable strategies to reduce expenses or increase revenue across dental schools, at least without sacrificing the quality of the educational experience or the investment in research required to have dentistry to maintain its position as a learned profession.

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ADA Study on Approaches to and Implications of Alternative Dental Education Models

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Domain 3: Ensuring the Level of Research and Scholarship Needed to Maintain Dentistry as a Learned Profession

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ADA Study on Approaches to and Implications of Alternative Dental Education Models
*Domain 3: Ensuring the Level of Research and Scholarship Needed to
Maintain Dentistry as a Learned Profession*

EXECUTIVE SUMMARY

The *ADA Study on Approaches to and Implications of Alternative Dental Education Models* explores three primary research questions:

1. How can we classify different models of U.S. dental schools based on key curricular and financial variables they share in common? (Domain 1)
2. What are the major revenue and expense drivers for dental education, and how do these differ across (types of) dental schools? (Domain 2)
3. Is the profession attracting and retaining the faculty needed to lead the research enterprise (and to ensure that dentistry continues to be a learned profession)? (Domain 3)

The report that follows focuses specifically on Domain 3.

Research and scholarship within dental schools are necessary for dentistry to maintain its position as a science-based, learned profession alongside other health care professions. Dental research allows the profession to advance the care of patients and incorporate scientific discoveries into dental care.

While traditional definitions of research have tended to focus on laboratory-based basic sciences, today we understand that research and scholarship within dentistry extends beyond the “bench” to include other forms of research, such as educational research; practice-based research; translational research; clinical, behavioral,

social and health sciences research; and interprofessional education research efforts, among others. Advancements within all of these aspects of research and scholarship are essential to the future of the profession.

Research and scholarship are most typically measured at the individual or institutional level (e.g., impact rating or number of citations of journal articles, level of grant funding by institution). Few methods exist to measure the level of research and scholarship at the “system” level. Based on input from the ADA, dental educators and dental researchers, we identified the following four indicators to serve as proxies for the level of research and scholarship occurring throughout the dental education community: the percentage of dental school faculty with Ph.D.s, levels of NIH funding, levels of total research funding, and the number of peer-reviewed dental-related journals focusing on dentistry and oral health. We used data from the National Institutes of Health (NIH) RePORTER database, Commission on Dental Accreditation (CODA) *Survey of Dental Education Group III-Financial Management*, ADEA *Survey of Dental School Faculty*, and Web of Science citations database to identify trends in the number of funded research projects, the level of research funding, the percentage of dental school faculty with Ph.D.s, and the number of academic journals focusing on dentistry and oral health.

Trends in the percentage of dental school faculty with Ph.D.s, levels of NIH funding and total research funding, and the number of peer-reviewed dental-related journals reveal a

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mixed picture for the current state of the research enterprise. Over the past decade, there appears to be a decrease in the number of full-time Ph.D. faculty, who often take the lead in conducting oral health research. In addition, there has been a significant decline in NIH dollars, and specifically funding from the National Institute of Dental and Craniofacial Research (NIDCR), to support the work of these researchers. NIDCR dental school funding fell by 33% from 2005 to 2014 in constant 2014 dollars. Total NIH funding to dental schools in constant dollars fell by 27% over the same time period. However, the decline in NIH funding to dental schools may be slightly more nuanced than often presented, as it is conflated with the overall decline in NIH and NIDCR funding. While the share of NIDCR funding to dental schools has declined in the last 10 years after adjusting for inflation, the share of NIH funding from other NIH Institutes and Centers to dental schools has increased, partially offsetting the decline in NIDCR funding. As a result, dental schools' share of inflation-adjusted total NIH funding has remained fairly level over the past decade.

An important finding from this study is that the decline in research funding is not experienced equally among all dental schools. The subset of schools with the largest research budgets saw an increase in their research expenditures in 2014. At the same time, the subset of schools founded since 1980 also appear to be ramping up their research efforts. As such, the decline in research funding appears to

impact the remaining subset of dental schools most significantly.

In another positive trend, one proxy for measuring the growth in new knowledge within a profession is the establishment of new journals within the field. Over the past six years, the number of peer-reviewed journals focused on dentistry and oral health has increased 25%. Since journals serve as the primary forum for presenting research findings, the increase in the number of journals suggests there continues to be growth in the volume of published, peer-reviewed research related to dentistry and oral health, a clear indicator of continued vibrancy of the field and its position as a learned profession.

Based on the findings from this study, several opportunities exist for the entire dental community to contribute to maintaining and advancing dentistry as a learned profession. Advocating for research support, including continued efforts to increase funding for NIH and NIDCR, and for increased investment in the research enterprise within dental schools (both in terms of research capacity and the number of faculty engaged in research), is a priority. In addition, leadership and support for fostering a "culture of research" within all dental schools is critical to the future of research in dentistry and leadership within the broader research community. Such a culture would include the active promotion of research and scholarship by university and dental school leadership, engagement of students and residents in research activities (such as ADEA/AADR Student Research Day) and mentorship opportunities (such as the ADEA Academic

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Dental Careers Fellowship Program), allowing faculty protected time to conduct research and scholarly activities, and supporting participation of faculty in professional meetings focused on research and scholarship. Each of these components is important for maintaining dentistry's position as a learned profession.

These investments in infrastructure and human capital are essential for ensuring that dentistry maintains its respected status as a learned profession. However, as illustrated in the report for Domain 2 of this study, faculty and research are key drivers of the cost of dental education. Therefore, there may be inherent tension between the desire to invest in the research enterprise needed for the future and the desire to reduce the cost of dental education.

INTRODUCTION

Over the past 150 years, dentistry has shifted from a technical to a science-based, learned profession. One of the earliest calls for this shift was from Dr. William J. Gies, who in 1920 along with 24 colleagues, founded the International Association for Dental Research (IADR) in an effort to provide a forum for dentists and scientists to increase and enhance dental research, and founded the American Association of Dental Schools (ADEA's predecessor) in 1923 to strengthen the quality of dental education. Shortly thereafter, in 1926, with funding from the Carnegie Foundation for the Advancement of Teaching, Dr. Gies published *Dental Education in the United States and Canada*, the seminal report on dental education.¹ What would

become known as the "Gies Report" emphasized the importance of research within dental schools in order to provide a scientific basis for dentistry.² In 1936, Dr. Isaac Schour, Dean of the University of Illinois at Chicago College of Dentistry and President of IADR, stated that dental schools "...[M]ust meet the challenge not only to further research, *per se*, but also to train students, both graduate and undergraduate, to do research and to inculcate in the minds of all students an intelligent appreciation of and respect for research".³

While traditional definitions of research have tended to focus on laboratory-based basic sciences, today we understand that research and scholarship within dentistry extends beyond the "bench" to include other forms of research, such as educational research; practice-based research; translational research; clinical, behavioral, social, and health sciences research; and interprofessional education research efforts, among others. Advancements within all of these aspects of research and scholarship are essential to ensure that dentistry maintains its position as a learned profession alongside the other health professions. Dental schools must continue to contribute to the generation of new knowledge, both by translating recent scientific breakthroughs in areas such as genomics, proteomics, pharmacotherapy and systems biology into clinical practice, and by making new, innovative breakthroughs in diseases and conditions unique to the oral, dental and craniofacial region.⁴

Maintaining and attracting a scientific, evidence-based profession requires at least four components: faculty and students with

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the interest in and capacity to conduct research, research funding to support the work of faculty and students along with necessary infrastructure, a culture in dental schools that places an emphasis on research, and peer-reviewed journals and other platforms through which to share findings. This study draws evidence from a variety of sources, including NIH, CODA, ADEA, and Web of Science citations database, to track recent trends in dental research as a basis for assessing whether the profession is attracting and retaining the faculty and staff needed to lead the research enterprise and ensure dentistry maintains its respected status as a learned profession.

METHODS AND DATA

Data on faculty came from the annual ADEA *Survey of Dental School Faculty*, which provides a wide range of information on the characteristics of dental school faculty, including highest degrees earned. This is an institutional survey based on responses from 98% of U.S. dental schools (not individual faculty members). One of the important characteristics of dental educators is their educational backgrounds (defined by type of degrees). In this report we focus on dental school faculty with Ph.D.s (including those with and without dental degrees) as one proxy measure for determining whether the profession is attracting and retaining the faculty who can lead the research enterprise, since faculty with Ph.D.s have been shown more likely to be engaged in research.⁵ We appreciate that there are many faculty members with dental and other doctoral degrees (such as D.M.Sc.,

Dr.P.H.), but without Ph.D.s, who are highly respected scientists as well.

The two sources of information on research funding came from NIH and CODA. The NIH data came from the NIH RePORTER database. The CODA data is from the CODA Survey of Dental Education Group III-Financial Management, an annual survey of dental school finances that includes information on expenditures on research activities. All dollar amounts were adjusted to 2014 constant dollars using the consumer price index for urban consumers.

Data on the trends in publications are from a list of journals categorized as Dentistry, Oral Surgery & Medicine, from 2009 to 2014. The list was compiled by the University of Hong Kong Libraries using the Journal Citation Reports, ISI Journal Citation Report published by Web of Science, Thomson Reuters (<https://lib.hku.hk/denlib/impactfactor.html>).

Context: The Role of Full-time Faculty in Advancing Research

One of the most significant (and expensive) components of a dental school is human capital. People are central to dental schools' research, education and clinical missions. During the 2013–14 academic year, there were 10,710 full-time and part-time educators at U.S. dental schools. While the majority of faculty are employed part-time (54%), the focus of our analysis is on the 46% who are full-time faculty,⁶ as this subset of faculty members are more likely to be engaged in research activities.

All faculty are essential to the functioning of a dental school, but full-time faculty are the

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foundation of any dental school because they play an essential part in multiple aspects of the institution: teaching courses, conducting research, mentoring students and serving on school and campus committees. While dental school faculty members serve in a variety of roles, it is important to understand that each individual has a primary appointment: basic science, behavioral science, clinical science or research.

The majority of full-time faculty have a primary appointment in clinical science (2,490). Approximately 9% of full-time faculty (429) have a primary appointment in research. However, this does not mean other faculty do not conduct research. As one of the key requirements for obtaining promotion and tenure is an active research agenda, we can extrapolate that the approximately 40% of full-time faculty who are tenured or on the tenure track are engaged in some level of research activity.

Trends in the Number of Faculty Holding Ph.D.s

Research in dental schools is performed by a broad cross-section of faculty with diverse skillsets and backgrounds.

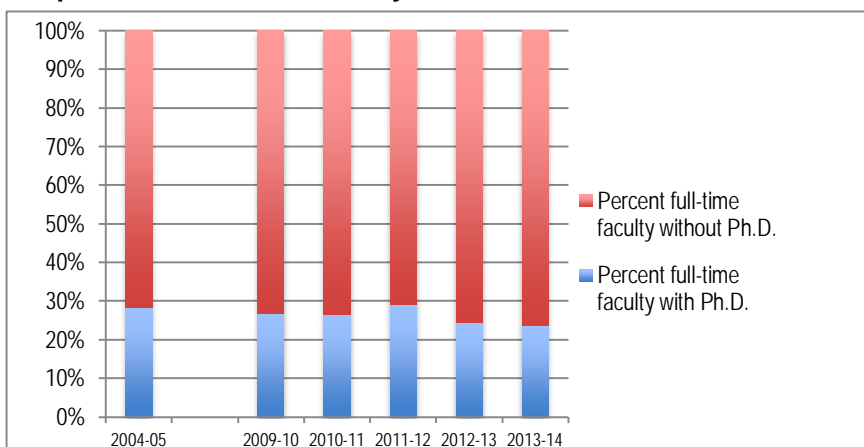
The majority of dental educators have a dental degree, a Ph.D., or both. Dental educators with Ph.D.s (usually in a biomedical science) are most often in research and tenured or tenure-track positions and expected to obtain external funding to

support their research activities and a portion of their salaries.⁵ Therefore, one way to estimate a dental school's capacity to perform research is to track the number of faculty with Ph.D.s employed by the school.

In academic year 2011–12, the percentage of Ph.D.s among all full-time faculty reached a five-year high of 29.0%. This level is relatively unchanged from 2004–05 (28.4%). However, following the 2011–12 high, both the absolute number and percentage of Ph.D.s among full-time faculty have declined over the past two years. The share of Ph.D.s among full-time faculty dropped to 23.7% in 2013–14 (Graph 1). Looking at absolute numbers, there was a decrease of 230 faculty with Ph.D.s from 2011–12 (1,408) to 2013–14 (1,178) during a time period in which the total number of full-time faculty increased from 4,861 in 2011–12 to 4,964 in 2013–14. The number and share of faculty with dual D.D.S. and Ph.D. follows a similar arc, with a recent high of 698 (15.7%) in 2011–12, but falling to 560 (12.6%) in 2013–14.

The appropriate number of faculty with Ph.D.s required for dentistry to be a learned

Graph 1: Dental School Faculty With Ph.D.s



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profession cannot easily be determined. We can, however, examine what has happened over the past 20 years. Twenty years ago, the number and share of faculty with Ph.D.s was comparable to the 2011–12 academic year. Given the relative stability of the percentage of faculty with Ph.D.s over the past 20 years, and if we assume that the profile of Ph.D.s two decades ago (in 1994) was adequate to lead the research enterprise, then we must determine why the number and share of faculty with Ph.D.s has decreased sharply over the past two years and whether is this a short-term fluctuation or the start of a longer-term trend.

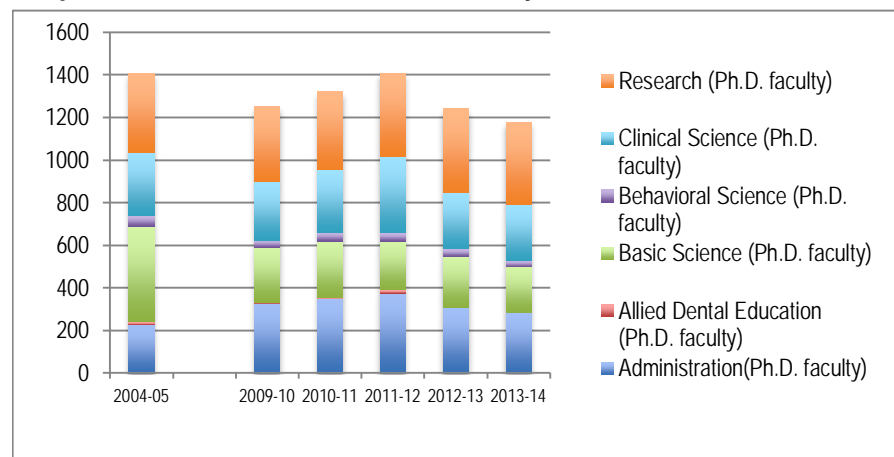
A closer look at data on the primary appointment of the faculty with Ph.D.s may provide one possible explanation for the decline in the total number of Ph.D. faculty. As stated earlier, about half of all full-time faculty have a primary appointment of clinical sciences and less than 10% have a primary appointment of research. However, the primary appointment of the largest share of full-time faculty with Ph.D.s is in research (Graph 2), followed by administration, clinical sciences and basic sciences. In 2013–14, there were 388 Ph.D.s in research (nearly all of full-time faculty in this category), 282 in administration, 261 in clinical sciences, 213 in basic sciences, 30 in behavioral sciences, and four in allied dental education. The major

change in distribution of primary appointments of faculty with Ph.D.s over the past 10 years occurred within the basic sciences, which had 213 faculty with Ph.D.s in 2013–14, down from 450 full-time faculty with Ph.D.s in 2004–05.

One possible explanation for this decline in full-time faculty with Ph.D.s in the basic sciences is the transition within dental education to an integrated curricular model. In July 2013, CODA implemented revised Predoctoral Dental Education Standards. One of the revised standards, Standard 2-6ⁱ, called for integration in some or all parts of the dental school curriculum. According to 2014 data from the CODA *Survey of Dental Education Group IV: Curriculum* (CODA Curriculum Survey), 60 dental schools reported the integration of at least a few courses, if not the entire curriculum. In some instances, integrated courses can reduce the number of faculty required.

Another potential explanation relates to the increased centralization of basic science faculty within the university structure. As health

Graph 2: Distribution of Full-Time Faculty with a Ph. D.



ⁱ CODA Standard 2-6 states: Biomedical, behavioral and clinical science instruction **must** be integrated and of sufficient depth, scope, timeliness, quality and emphasis to ensure achievement of the curriculum's defined competencies.

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professions universities increasingly shift to interprofessional and team-based science and research, some schools are centralizing their basic science research faculty to support collaboration and achieve cost savings. While these researchers may still be employed by the university and contributing to dental research, they may not be counted among the dental school faculty.

An alternative possibility that might explain the decline in full-time faculty with Ph.D.s in basic sciences is related to the increasing number of schools requiring all advanced basic science courses to be fulfilled prior to dental school matriculation (such as microbiology, genetics and biochemistry). This further reduces the need for basic science faculty within the dental school. Additional research might provide other explanations for the decline in basic science faculty with Ph.D.s, which appears to be the primary contributor to the decrease in the share of Ph.D.s among full-time dental school faculty.

Funding the Research Enterprise

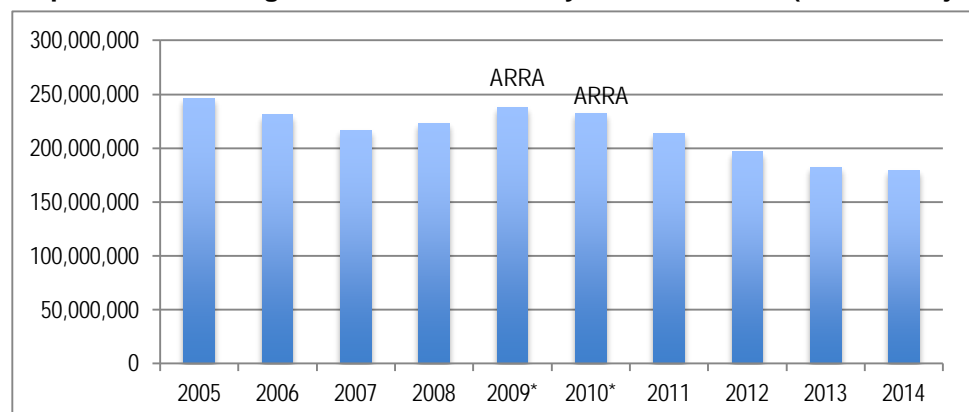
Trends in NIH Funding

Funding is an essential component of building and maintaining the research capacity of dental schools. Research funding can come from a variety of different sources; however, the most significant source of research funding in health care is

from NIH. NIH funding is a common metric used within health-related disciplines to measure research yield of individual hospitals and departments.⁷ Within NIH, NIDCR is a critically important funding source for dental research, and we include relevant data for NIDCR funding in this report where appropriate for context. However, as suggested by Lipton and Kinane,⁸ it is more appropriate to focus on total NIH funding rather than only funding from NIDCR when assessing funding for dental school research, because approximately 33% of the total money that dental schools receive from NIH is from outside the NIDCR.

NIH funding to dental schools has fluctuated since 2005, but overall, funding has declined over the past 10 years (Graph 3). In 2005, NIH funded 588 projects and gave \$246 million in grants to U.S. dental schools (in constant 2014 dollars). Funding levels began to decline in 2006, followed by an uptick in 2009 and 2010 that was largely the result of increased funding for research made available through the American Recovery and Reinvestment Act of 2009 (ARRA). NIDCR distributed \$101 million in ARRA funds for dental and craniofacial research over the

Graph 3: NIH Funding to Schools of Dentistry and Oral Health (Inflation-adjusted)



* NIH distributed additional funding under ARRA.

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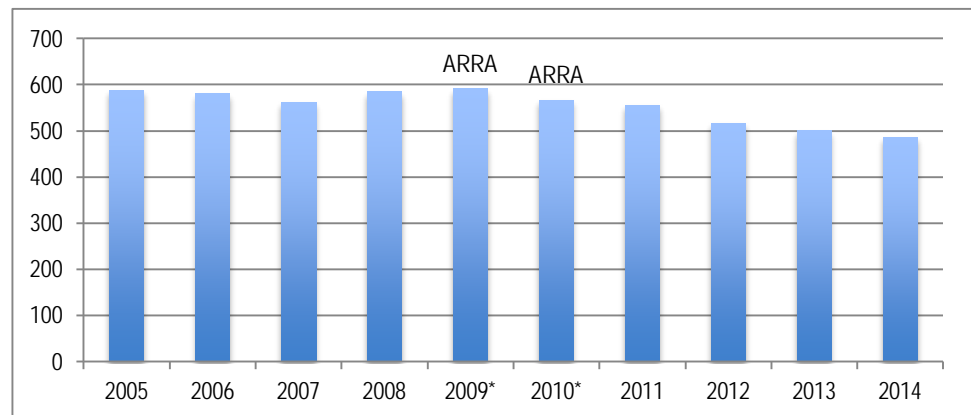
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following two years.⁹ As a result of this short-term stimulus funding, NIH funded 591 projects at \$238 million in 2009. However, in the five years following passage of the ARRA, NIH funding to schools of dentistry and oral hygieneⁱ has steadily declined. By 2014, NIH-funded grants to dental schools had decreased to \$179 million, which provided funding for 486 projects (Graph 4). However, in terms of the share of total NIH awards being made to dental schools, there was little change (1.06% of funded projects in 2005 and 0.96% in 2014) (Graph 5). It is also important to note that while the number of projects awarded to dental schools has declined, the size of grants has increased.

The steady decline in dental school funding, however, must be viewed in the context of an overall decline in NIH funding to all recipients. Between 2005 and 2014, NIH's total budgetⁱⁱ fell from \$34.8 billion

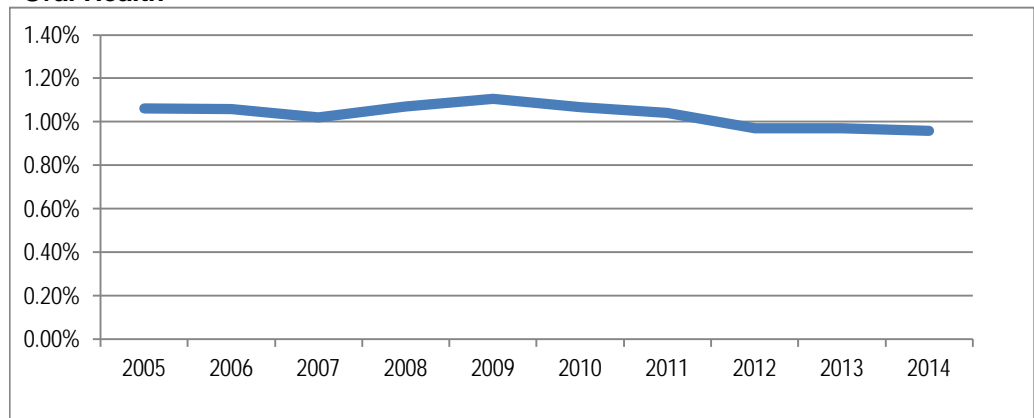
to \$30.1 billion in inflation adjusted dollars, while their research and training budget fell from \$25.1 billion to \$21.5 billion. While the amount of NIH's research and training funding granted to dental schools has been reduced in absolute dollars, the percentage of total NIH research and training funds to dental schools has remained essentially unchanged. Dental schools' share of the NIH research and training budget declined from 0.86% in 2005 to 0.81% in 2014

Graph 4: Number of NIH Projects to Schools of Dentistry and Oral Health



* NIH distributed additional funding under ARRA.

Graph 5: Percentage of NIH Funded Projects Going to Schools of Dentistry and Oral Health



ⁱ The label "Schools of Dentistry and Oral Hygiene" is a designation used by NIH.

ⁱⁱ This report makes a distinction between NIH's total budget, which includes dollars that are specifically designated for operating expenses, such as facility maintenance and staff salaries, and NIH's research and training budget, which includes the dollars spent to fund external research and training.

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(Graph 6). This suggests that there has not been a dramatic shift in the share of NIH research and training funding going to dental schools. If dental schools were still receiving 0.86% of the NIH research and training budget in 2014 as they did in 2005, it would translate into nearly \$10 million more in funding, a significant but not substantial amount of NIH's research funding overall.

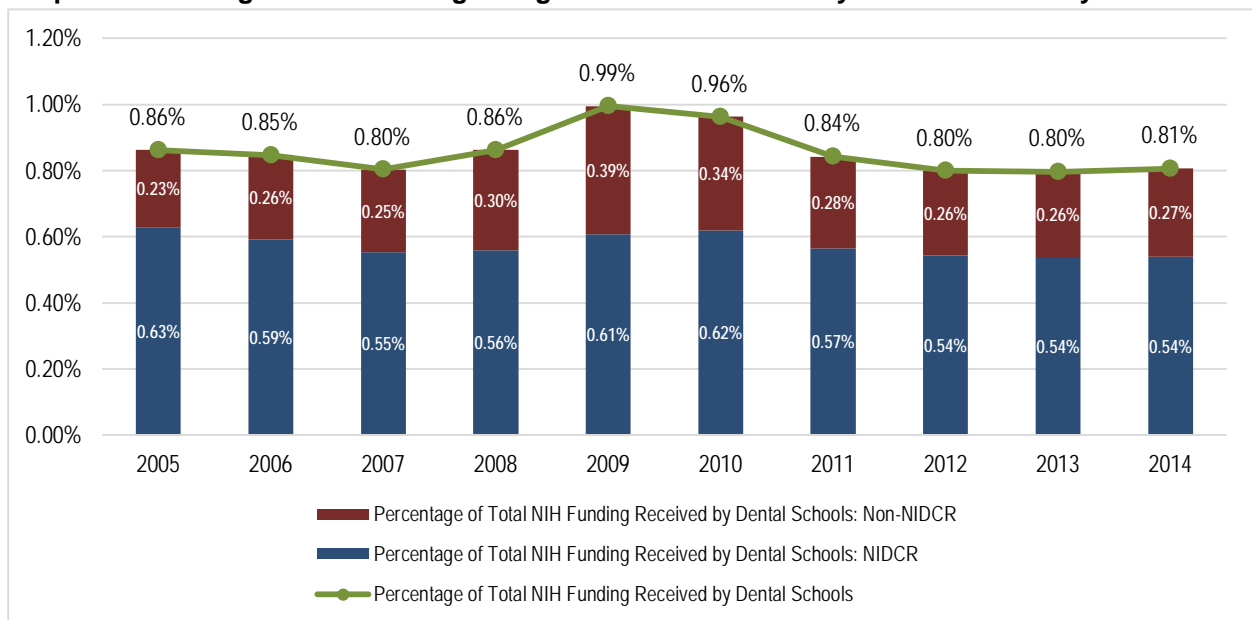
Although dental schools receive funding from more than 20 NIH Centers and Institutes outside of NIDCR, the recent decline in the percentage of NIDCR funding to dental schools is, understandably, an area of concern for many.⁹ In 2005, half of NIDCR funding went to U.S. dental schools. There was an uptick in funding in 2010 and 2011 due to ARRA funding, but by 2014, the percentage declined to 41.4 (Graph 7). Based on conversations with NIDCR, AADR and several dental deans, the decline in the share of NIDCR funding to dental schools can largely be attributed to two

factors: 1) the shift in NIH's and NIDCR's funding research priorities into areas of science that have not been traditional areas of focus for dental school faculty, and 2) a decline in the number of proposals submitted by dental school faculty to NIDCR.

According to former NIDCR Director Dr. Harold Slavkin, under the leadership of Dr. Lawrence Tabak during the 2000s, "the NIDCR significantly increased translational and clinical research, behavioral research, and an emphasis upon saliva as a diagnostic fluid."¹⁰ More recently, under the leadership of Dr. Francis Collins, NIH has placed an emphasis on areas of research such as personalized medicine, genetics and genomics which, by and large, have not been primary foci of dental schools' research portfolios.

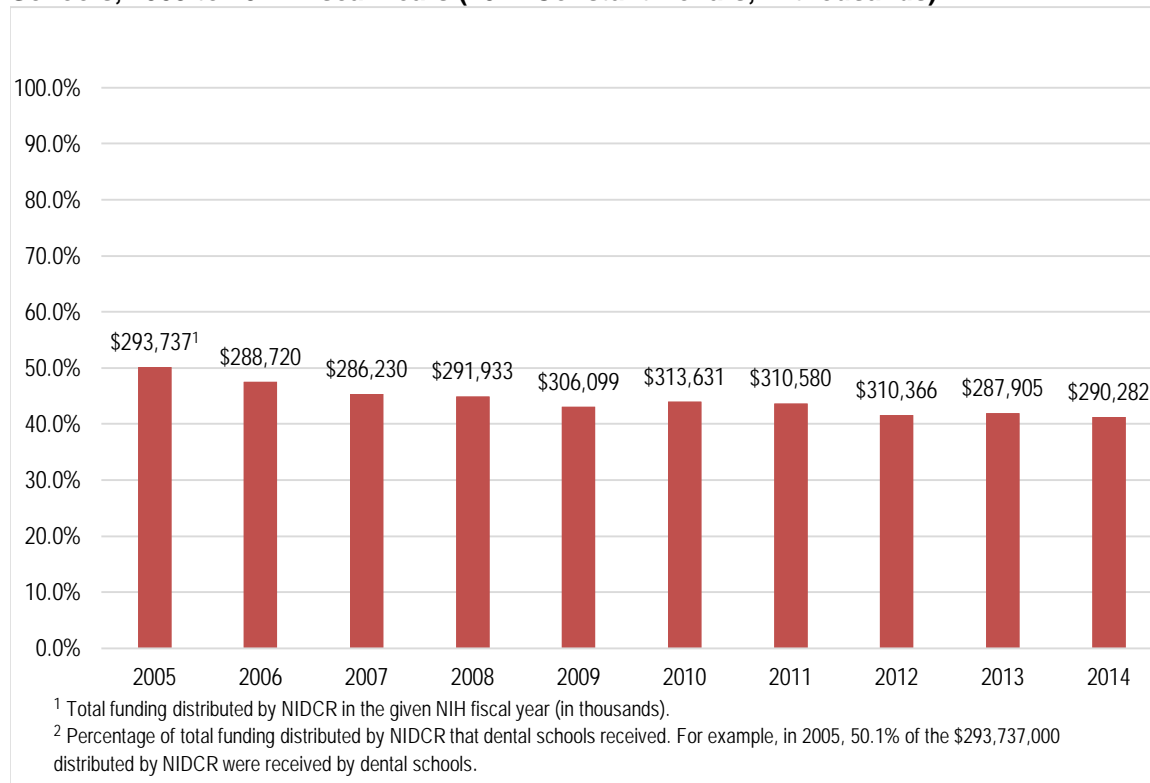
Along with this change in research priorities has come a shift to team science. More research funding is going to multidisciplinary research teams that span across the university and health professions. Further, more funding is

Graph 6: Percentage of NIH Funding Going to Schools of Dentistry and Oral Health by Source



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Graph 7: Amount of Total NIDCR Funding and Percentage of NIDCR Funding Received by Dental Schools, 2005 to 2014 Fiscal Years (2014 Constant Dollars, in thousands)



promoting research in community-based settings to foster collaboration outside of the traditional dental school research environment—laboratories and clinics—and translating scientific knowledge into action. All of our analysis of the share of NIDCR and NIH funding to dental schools is based on the primary categorization of the funded project. Because the principal investigator in these team-based research efforts may be outside of the dental school, the reports may underestimate the level of research activity occurring in dental schools, as there are many dental school faculty who are critical parts of NIDCR-funded research projects that are categorized outside of dental education.

The second factor contributing to the decline in NIDCR funding to dental schools is

the reported decline in the number of proposals submitted by dental school faculty. While data are not available to determine the relative competitiveness of proposals from dental schools, NIDCR has publicly discussed the need to increase the number of grant proposals submitted. Several strategies for increasing the number of grant proposals to NIDCR, and other funding sources, were suggested in our discussions with dental educators and researchers: increasing the number of full-time Ph.D. researchers who are primarily focused on research within the dental schools, supporting protected time for faculty to undertake research, and providing more institutional support and training to assist faculty in preparing grant proposals.

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While the decline in NIDCR funding to dental schools is a significant challenge that should be addressed, it is also important to view this decline in the context of the overall trend in NIH funding to dental schools (as Lipton and Kinane⁸ suggested), which as previously noted showed little change in the last 10 years. As Lipton and Kinane stated, “The proportion [of NIH funding from other Centers and Institutes] has grown each year, with non-NIDCR support increasing from 26% to 35% between 2005 and 2009.”⁸ Updated analysis reveals that the share of non-NIDCR funding to dental schools has declined slightly since 2009 (31% in 2014) but is still higher than in 2005. Therefore, the decline in the share of NIDCR funding to dental schools may partially be due to, and partially offset by, more dental school researchers shifting their source of funding from NIDCR to other centers within NIH.

Trends in the Total Level of Research Expenditures

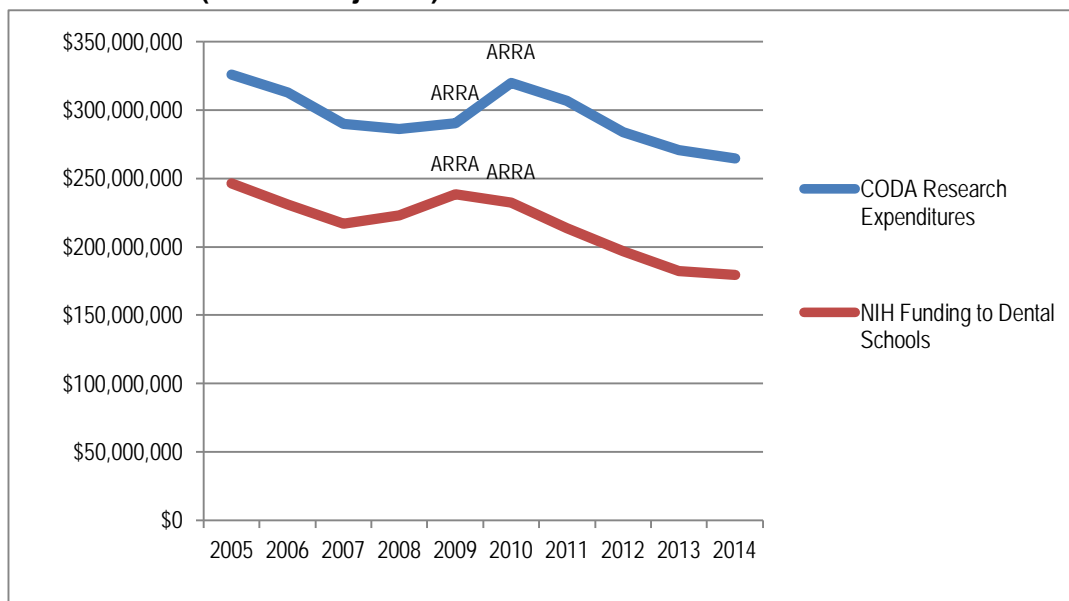
NIH is the major funder of dental research, but it is not the only source of funding. Faculty may

also obtain research funding from other federal or state agencies or from foundations or corporations. The CODA surveys ask schools about their total expenditures on research. Because the expenditures on research must match the funding received for research activities, this data provides a good estimate of total research activity at a school.

Trends in the total level of research funding, as reported by CODA, mirrors NIH funding trends (Graph 8). Examining the 10-year period from 2005 to 2014, total research expenditures among all dental schools was the highest in 2005 at \$326 million. Total research expenditures began to decline in 2006, rose to \$320 million as a result of ARRA (stimulus) funding, and then began a steady downward trend through 2014.

On the positive side, large amounts of research dollars are also coming into dental schools from sources other than NIH. Total research expenditures as reported to CODA in 2014 were \$260 million. In 2014, NIH funded \$180 million. Although interpretation of year-to-

Graph 8: Total Dental School Research Expenditures as Reported to CODA and NIH Funding to Dental Schools (Inflation-adjusted)



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year comparisons between NIH and CODA dollars may be limited, as schools and the NIH report multiyear funding projects differently, it is clear there is a large amount of additional funding that dental schools are receiving. Since 2005, non-NIH funding to dental schools has fluctuated but overall has remained relatively stable. As such, it does not appear the non-NIH funds will be able to offset further decreases in NIH funding.

Research at the Subset of Schools With the Largest Research Budgets.

The decline in total research funding has not been experienced equally by all schools. Of the 65 CODA-accredited dental schools in the United States, 15 schools had research budgets greater than \$10 million in 2014. That year, these schools received 67.5% of all NIH funding awarded to dental schools (Graph 9).

Between 2005 and 2014, these 15 schools received approximately 65% (62.7% to 68.3%) of all NIH funding awarded to dental schools, and the majority of total research funding during the same time period (ranging from 55.7% to 63.4%).

While total research funding to dental schools declined in 2014, this group of 15 schools saw an increase in research funding

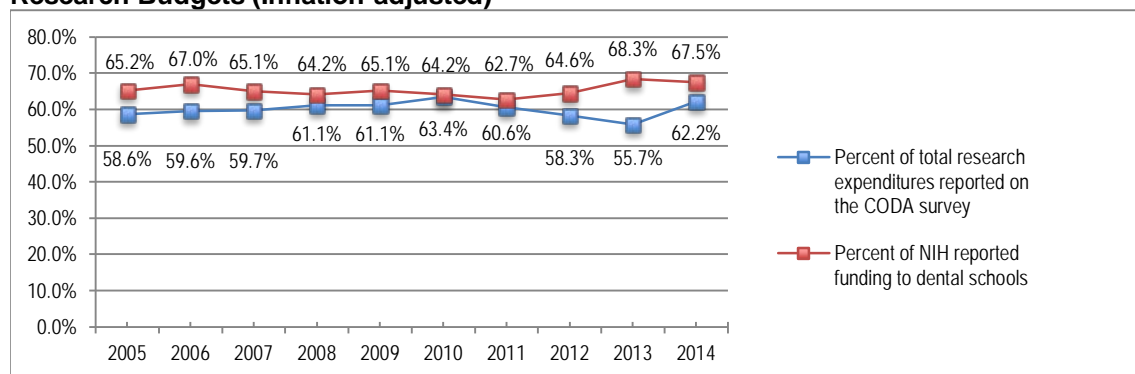
that year, suggesting that the decline in funding referenced earlier is not distributed evenly among all schools and is being experienced most significantly among the remaining 50 dental schools. This concentration of research funding in a subset of schools is not unique to dentistry and is seen in other health professions as well. If research funding continues to decline and become even more competitive, this subset of schools, with a well-developed research infrastructure and proven track record, will likely be at an advantage in competing for grant dollars. The next few years will determine whether this was a one-year jump or the start of a new trend.

Research at Dental Schools Founded Since 1980

According to Dominick DePaola, D.D.S., Ph.D., former Associate Dean for Nova Southeastern University College of Dental Medicine:

“Under the best of circumstances, it takes dental schools a significant period of time to develop and sustain a robust research program. The dental school at the University of Texas Health Science Center in San Antonio, for example, took about 20

Graph 9 Percentage Share of Research Funding Among the 15 Dental Schools With the Largest Research Budgets (Inflation-adjusted)



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years to establish a viable, flourishing research program.”⁸

Recognizing that it takes significant time and investment for a dental school to establish and develop a robust research enterprise, we also looked at the subset of dental schools that were founded since 1980. It is understood that it will take these schools time to build up their research capacities; however, we would expect to see a steady increase in their level of research activity over time.

While this subset of schools currently comprises a small percentage of total NIH research funding (2.5%), research expenditures among these schools have seen an upward trend, increasing roughly three-fold since 2005 from about \$2 million in 2005 to \$6.5 million in 2014 (Graph 10). Given that seven of these schools opened in 2011 or later, we should expect to see continued increases in research expenditures among this subset of schools in the years ahead.

Journals and Publications

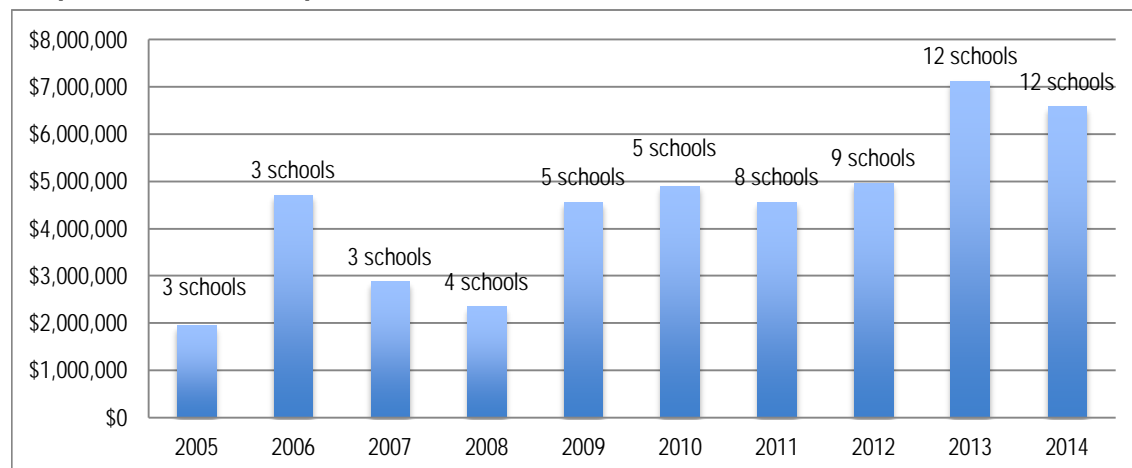
An additional indicator of dental research and scholarship is the quantity of peer-reviewed

published journal articles related to dentistry and oral health. Dental journals have a long history of advancing dental science—the first dental periodical, the *American Journal of Dental Science*, was introduced in 1839.² In the latter part of the 20th century, major biological and medical journals began to publish articles that described the results of dental and craniofacial research, providing evidence that the science of dentistry had matured into a discipline that was accepted widely by the broader scientific community.²

The total number of publications is a useful indicator of research because it is objective and quantifiable; it is also a useful indicator of NIH funding.⁹ In general, more publications are associated with more NIH funding.¹¹ However, it is not a direct correlation because good research faculty will often find alternative ways to publish if they lose their NIH funding.^{12,13}

While journals such as the *Journal of the American Dental Association*, the *Journal of Dental Education*, and the *Journal of Dental Research* continue to serve as the primary forums for the publication of research and scholarship within the profession, the number

Graph 10: Research Expenditures at Dental Schools Founded Since 1980



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of articles that can be published in any given year is limited by the size and publishing schedule of these journals. As such, one proxy for measuring the growth in new knowledge within a profession is the establishment of new journals within the field.

Over the past six years, the number of peer-reviewed journals focused on dentistry and oral health has increased by 25%. This growth has outpaced many science, technology and medical fields, which on average increase their number of journals by 3.5% per year.¹⁴ According to data from the Institute for Scientific Information, between 2009 and 2014, 23 more journals are now listed under the heading of Dentistry, Oral Surgery & Medicine (Graph 11).¹⁵ This is in addition to the increase in the number of articles referencing oral health appearing in scientific journals beyond the dental community. While the number of journals does not speak to the quality of the research, because journals serve as the primary forum for presenting research findings, the increase in the number of journals suggests that there continues to be growth in the volume of

published, peer-reviewed research related to dentistry and oral health, a clear indicator of continued vibrancy of the field and its position as a learned profession.

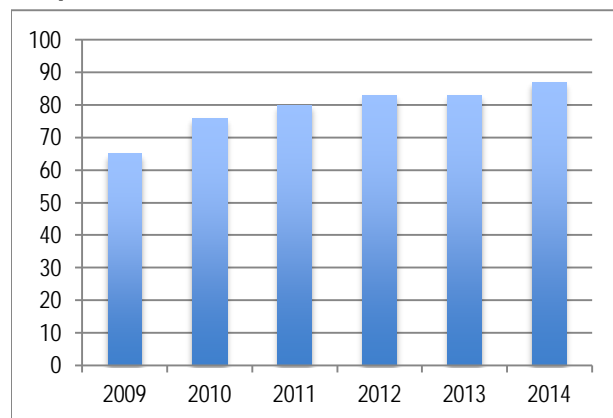
CONCLUSION

Dental research is fundamental not only to discovering new ways to prevent and address oral diseases, but also to fostering innovative approaches to reduce persistent oral health disparities, enabling better overall health.¹⁶

While there is no evidence that dentistry is losing its place as a learned profession, recent declines in research funding and changing research priorities may present challenges to ongoing efforts to develop, an appreciation and respect for research among graduates of dental schools.³

Because research and scholarship are most typically assessed at the individual or institutional level (e.g., impact rating or number of citations of journal articles, level of grant funding by institution), few methods exist to measure the level of research and scholarship at the “system” level. Based on input from the ADA, dental educators and dental researchers, we identified four indicators to serve as proxies for the level of research and scholarship occurring throughout the dental education community: the percentage of dental school faculty with Ph.D.s, levels of NIH funding, levels of total research funding, and the number of peer-reviewed dental-related journals focusing on dentistry and oral health. These proxy indicators reveal a mixed picture of the current state of the research enterprise. As

Graph 11: Number of Dental-related Journals



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both faculty numbers and funding levels are expected to fluctuate and are heavily influenced by economic factors outside the control of dental schools, it is more useful to look at the longer-term trends than short-term fluctuations.

Over the past decade, there appears to be a decrease in the number of full-time faculty with Ph.D.s at dental schools. In addition, there has been a large decline in dollars to NIH, and specifically NIDCR, funding to support the work of these researchers. NIDCR funding fell by 33% and NIH funding fell by 27% in constant 2014 dollars from 2005 to 2014. However, the decline in NIH funding to dental schools may be slightly more nuanced than often presented, as it is conflated with the overall decline in NIH and NIDCR budget levels. While the share of NIDCR funding to dental schools has declined in the last 10 years, the share of NIH funding outside of NIDCR to dental schools has increased. As a result, dental schools' share of total NIH funding has remained fairly level over the past decade. The inflation-adjusted changes in NIH funding to dental schools are more related to changes in NIH's overall budget. While the fall in NIH funding may still trend back up over the next few years, if not reversed the drop in funding could impact the level of research and scholarship essential to support the future of the profession.

An important finding from this study is that the decline in research funding is not experienced equally among all dental schools. The subset of schools with the largest research budgets saw an increase in their

research expenditures in 2014. At the same time, the subset of schools founded since 1980 also appear to be ramping up their research efforts. Schools typically focus on their teaching missions in the early years, turning their attention to building the research enterprise over time as the school becomes more established and brings on its full cadre of faculty. While research expenditures among this subset of schools remains small in absolute dollars, the numbers are trending up as these schools build their research capacities and increasingly incorporate research within their dental school missions. Several more years of data are needed to determine whether these increases are sustained and whether NIH funding follows. It is worth noting, however, that some schools will likely remain more research intensive, while other schools will place greater emphasis on teaching or service.

Finally, the increase in number of journals publishing in the field of dentistry and oral health offers the most promising sign for the continued position of dentistry as a learned profession. There has been an impressive increase in the number of peer-reviewed journals available. While the number of journals does not speak to the quality of the research, the opportunities they provide to publish is a necessary component to creating a successful research program and a vibrant profession.

As part of this study, the ADA asked, "How can the dental community provide more effective advocacy for research support?" Based on the findings from this study, there

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are several opportunities for the dental community to consider. First, given the critical role that NIH and NIDCR funding plays in supporting dental research, ongoing advocacy by the ADA, ADEA and the American Association for Dental Research to increase NIH funding should continue to be a primary focus of these associations' advocacy agendas. Fortunately, as part of the FY16 Omnibus Appropriations Bill, NIH's budget allocation was up 6.6% to \$32.084 billion, an increase of \$2 billion from the prior year, including an increase of over \$17 million for NIDCR. This is the largest boost in NIH funding in over a decade. Whether this was a one-year boost, similar to 2009, or the start of a more positive trend is yet to be determined.

Second, continued efforts to increase the competitiveness of dental school faculty to receive research grants from NIH and other sources is important to reverse the decline in percentage of NIDCR funding being directed to dental schools and to increase total research activity among dental schools. The dental community should support efforts to increase the number of faculty actively engaged in research, particularly the subset of full-time

faculty with Ph.D.s (both with and without dental degrees). This includes efforts to foster a culture of research within dental schools, build the "researcher pipeline" for the future, and increase faculty development efforts to strengthen research competitiveness and capacity into new research disciplines and settings among current faculty. In addition, new investments in the research infrastructure of dental schools are needed to remain competitive into the future.

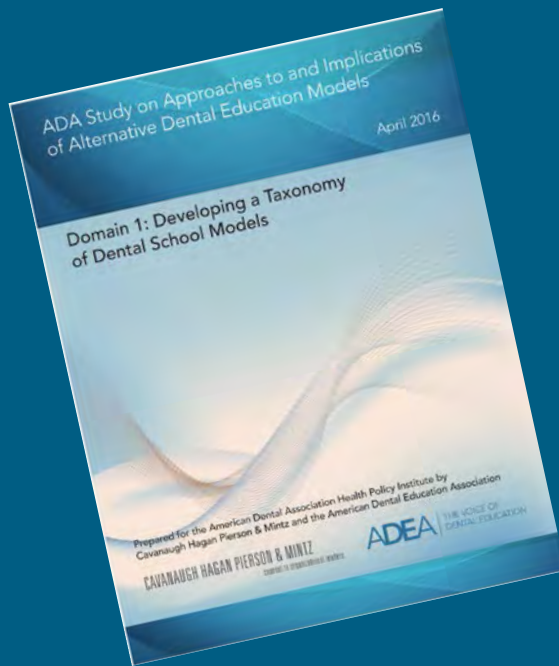
Investments in human capital and infrastructure are essential for ensuring that dentistry maintains its respected status as a learned profession. However, as illustrated in the report for Domain 2 of this study, faculty and research are also key drivers of the cost of dental education. Therefore, there may be inherent tension between the desire to invest in the research enterprise needed for the future and the desire to reduce the cost of dental education.

Through these advocacy efforts and investments, the dental community can ensure the appropriate level of scholarship needed for dentistry to maintain its respected status as a learned profession into the future.

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Findings From the ADA Study on Approaches to and Implications of Alternative Dental Education Models

Report to the ADA Health Policy Institute

May 2016

Project Background

November 2013:

ADA House of Delegates passed Resolution 56H-2013, which called for the ADA to “collaborate with various stakeholders to define the scope and specific aims of a comprehensive study of current dental education models.”

June 2014:

ADA CDEL’s Dental Education Committee hosted a stakeholder meeting to define the scope and aims of a study of dental education models.

November 2014:

ADA HOD passed Resolution 35B-2014 to “conduct a study of current dental education models.”

February 2015:

ADA releases RFP to conduct the “ADA Study on Approaches to and Implications of Alternative Dental Education Models.”

Three Domains of the ADA Study

Domain 1: Developing a Taxonomy of Dental School Models

How can we classify different models of U.S. dental schools based on key curricular and financial variables they share in common?

Domain 2: Examining the Variation in Expenditures Across U.S. Dental Schools

What are the major revenue and expense drivers for dental education, and how do these differ across (types of) dental schools?

Domain 3: Ensuring the Level of Research and Scholarship Needed to Maintain Dentistry as a Learned Profession

Is the profession attracting and retaining the faculty needed to lead the research enterprise (and to ensure that dentistry continues to be a learned profession)?

Key Takeaway From Domain 1: Developing a Taxonomy of Dental School Models

If you've seen one dental school, you've seen one dental school.

The high level of variation and fluidity among dental schools' curricular activities limits the ability to easily group schools into a simple and meaningful taxonomy that would remain static over time.

Further analysis showed that the predoctoral curricular model is not a predictor of the variation in expenditures across dental schools.

Key Takeaway From Domain 2: Examining the Variation in Expenditures Across U.S. Dental Schools

There is no “single best” financial model for dental schools that would result in increased revenue or reduced expenses.

Most, if not all, of the variables explored in the study will ***impact*** revenue and expenses.

However only four variables were found to be statistically significant in ***explaining the variation*** in expenses among dental schools:

1. Number of faculty
2. Level of research activities
3. Cost of living
4. Clinic expenses (measured as patient care)

Key Takeaway From Domain 3: Ensuring the Level of Research and Scholarship Needed to Maintain Dentistry as a Learned Profession

There is a mixed picture for the current state of the research enterprise across the dental education community. And there is an inherent tension between the level of financial investment needed to advance research and scholarship and the desire to reduce the cost of dental education.

The Good News

- Dental schools' share of inflation-adjusted total NIH funding has remained fairly level.
- Number of peer-reviewed journals focused on dentistry and oral health has increased by 25% over the past 6 years.

The Bad News

- Decrease in the number of full-time Ph.D. faculty, who often take the lead in conducting oral health research.
- Significant decline in NIH dollars, and specifically funding from NIDCR, to support the work of dental school researchers.

The ADA Study on Approaches to and Implications of Alternative Dental Education Models

A closer look at the findings

The Project Team: A Collaboration between CHP&M and ADEA



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The ADA-ADEA Joint Study Group

The Joint Study Group was comprised of volunteer leaders appointed by the two associations plus ADA and ADEA staff representatives. The Joint Study Group informed the research process by making collective sense of the data collected and shaping the report's findings and recommendations. The members of the Joint Study Group also served as the reviewers for the research reports.

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Domain One: Developing a Taxonomy of Dental School Models

How can we classify different models of U.S. dental schools based on key curricular and financial variables they share in common?

Overview of Approach to Domain 1: Developing a Taxonomy of Dental School Models

Utilizing a *cluster analysis* process, a statistical tool that sorts different objects into groups in such a way that it maximizes similarities within groups, while at the same time maximizing differences across groups, we identified key variables useful in distinguishing the curricular approaches of dental schools.

We used data from the 2014 CODA Survey of Dental Education Group IV: Curriculum (CODA Curriculum Survey) and the 2014 Survey of Dental Education Group III – Financial Management

Goal: Create a multi-factorial grouping of schools that goes beyond the single variable descriptions that have been used in the past.

Key Curricular Variables Used to Build the Taxonomy

Variable	Measurement
Community patient care	# of days that students spend in community clinics care over all years of dental school.
Total patient care	# of hours students spend providing patient care over all years of dental school.
Sponsored research and training	Dollar amount of sponsored research and training at a dental school.
Comprehensive patient care	When schools use the Comprehensive Patient Care model (number of years).
Curricular integration	Degree of curricular integration in major sections of the dental school curriculum.
Pedagogy (captured in four CODA questions)	Preliminary cluster analysis that categorizes schools by reported clock hours spent on teaching through simulation, didactic, independent study and small groups.
Technology (captured in seven CODA questions)	Preliminary cluster analysis that categorizes schools based on their use of technology to support their curricula.

All data taken from the CODA Curriculum Survey (2014).

Created Five Clusters of Dental Schools

Table 3. Cluster Groups and Rank of Variables by Importance

Ranking of importance within each cluster	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
1	Curricular Integration: 100% of schools in this cluster reported multiple curriculum components integrated into thematic units without discipline boundaries	Clinic Curriculum: 38% of schools in this cluster reported using the Comprehensive Patient Care model during the second through the final year of the program (1)	Clinic Curriculum: 100% of schools in this cluster reported using the Comprehensive Patient Care model in the last two years of the program	Pedagogy: 100% of schools in this cluster are high didactic and independent study	Curricular Integration: 83% of schools in this cluster reported the entire curriculum is integrated around themes, strands or threads
2	Clinic Curriculum: 52% of schools in this cluster reported using the Comprehensive Patient Care model in all years of the program	Patient Care: Schools in this cluster reported an average of 1,754 hours of patient care over all years	Pedagogy: 100% of schools in this cluster are high simulation and small group	Technology: 71% of schools in this cluster reported developing/piloting technology	Clinic Curriculum: 83% of schools in this cluster reported using the Comprehensive Patient Care model during the second through the final year of the program
3	Technology: 71% of schools in this cluster reported full implementation	Curricular Integration: 100% of schools in this cluster reported few courses integrated, but not entire curriculum	Community patient care: Schools in this cluster reported an average of 28 days of community-based patient care over all years	Community patient care: Schools in this cluster reported an average of 26 days of community-based patient care over all years	Patient Care: Schools in this cluster reported an average of 3,093 hours of patient care over all years
4	Pedagogy: 58% of schools in this cluster are high simulation and small group	Pedagogy: 100% of schools in this cluster are high simulation and small group	Curricular Integration: 83% of schools in this cluster reported few courses integrated, but not entire curriculum	Clinic Curriculum: 55% of schools in this cluster reported using the Comprehensive Patient Care model in the last two years of the program	Research: Sponsored research and training programs averaged \$2.2 million
5	Research: Sponsored research and training programs averaged \$5.3 million	Community patient care: Schools reported an average of 33 days of community-based patient care over all years	Patient Care: Schools in this cluster reported an average of 2,610 hours of patient care over all years	Patient Care: Schools in this cluster reported an average of 2,270 hours of patient care over all years	Community patient care: Schools in this cluster reported an average of 136 days of community-based patient care over all years
6	Patient Care: Schools in this cluster reported an average of 2,325 hours of patient care over all years	Research: Sponsored research and training programs averaged \$3.4 million	Technology: 50% of schools in this cluster reported full implementation	Curricular Integration: 66% of schools in this cluster reported few courses integrated, but not entire curriculum	Technology: 83% of schools in this cluster reported full implementation
7	Community patient care: Schools reported an average of 49 days of community-based patient care over all years	Technology: 63% of schools in this cluster reported full implementation	Research: Sponsored research and training programs averaged \$3.9 million	Research: Sponsored research and training programs averaged \$3.6 million	Pedagogy: 83% of schools in this cluster are high simulation and small group (group 2)

(1) The result that only 38% of the schools reported using Comprehensive Patient Care during their second through final years is an example of how the clusters are based on a variety of variables, not just the top reported variable.

Descriptions of the Five Clusters

CLUSTER	DESCRIPTION
Cluster 1	Primarily consists of schools reporting multiple curricular components integrated into thematic units without discipline boundaries, using the Comprehensive Patient Care model in all years of the program, and fully integrating technology into their teaching.
Cluster 2	Primarily consists of schools beginning the Comprehensive Patient Care model in year two and integrating a few courses, but not the entire curriculum. In addition, all schools in this cluster make high use of simulation/small group instruction.
Cluster 3	Primarily consists of schools that have implemented the Comprehensive Patient Care model during the last two years of the program and make high use of simulation/small group instruction.
Cluster 4	Primarily consists of schools making high use of didactic and independent study and working toward greater implementation of technology.
Cluster 5	Primarily consists of schools that have fully integrated their entire curriculum around themes, strands or threads; use the Comprehensive Patient Care model beginning in year two; and report a higher than average number of patient care hours and community patient care days.

Developed a Multi-factorial Taxonomy That Goes Beyond the Traditional, Single Dimensional Groupings of Dental Schools

Table 4. Distribution of Dental Schools Within Clusters by Select Criteria

		Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
Total Number of Dental Schools in the Cluster (n=64)		21	8	18	11	6
Institutional Status	Public	10	6	12	8	3
	Private	11	2	6	3	3
Year dental school was founded	Pre-1980	14	8	17	11	3
	1980 -	7	0	1	0	3
Level of NIH Research Funding	Top 20 sponsored research funded schools	7	2	6	5	0
	Additional schools	14	6	12	6	6
Class Size	Larger (> 400)	5	1	12	3	1
	Smaller (< 400)	16	7	6	8	5

What We Learned in Domain 1:

If You've Seen one Dental School, You've Seen one Dental School

The cluster analysis produced a data-driven, multi-dimensional snapshot of U.S. dental schools, and offers a more nuanced framework for understanding the different ways that dental schools organize their predoctoral curricula.

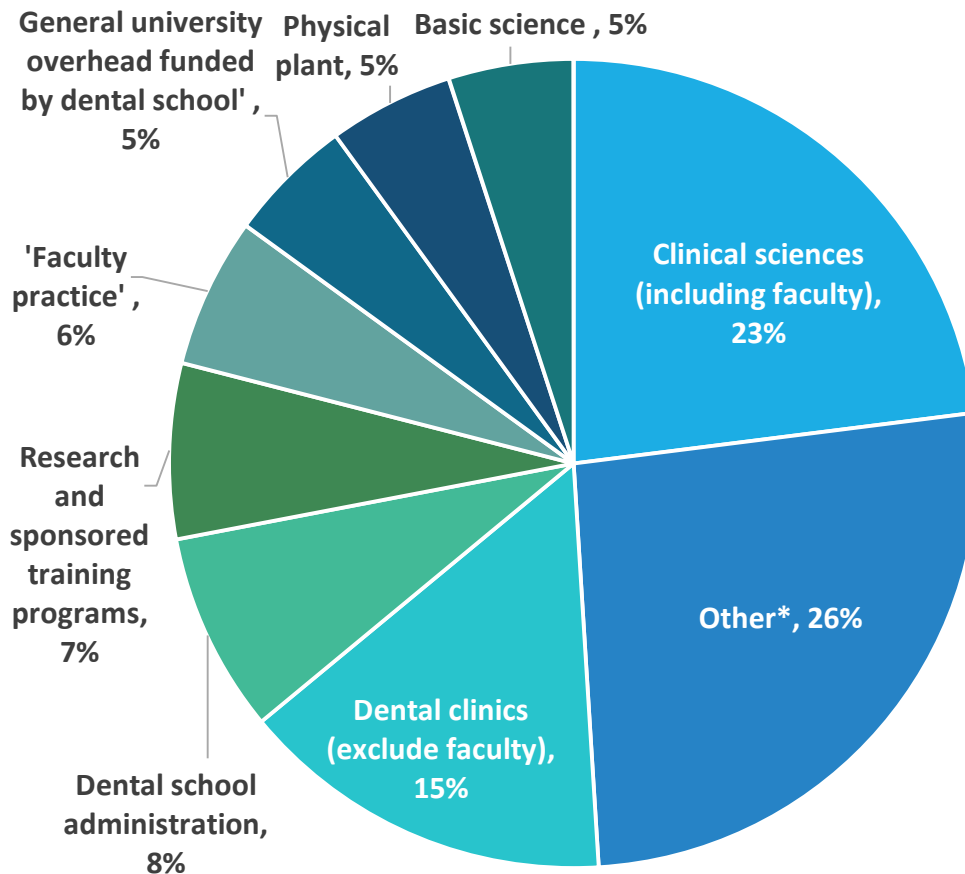
Dental schools vary significantly in their curricular design, both within and across groupings of similar schools. The variation among schools means that U.S. dental schools are not easily grouped with a subset of identical schools.

As each school's curriculum continues to evolve, the definition of the clusters and the composition of them are very fluid and will change over time.

Domain Two: Examining the Variation in Expenditures Across U.S. Dental Schools

What are the major revenue and expense drivers for dental education, and how do these differ across (types of) dental schools?

Distribution of Expenditures at U.S. Dental Schools



*OTHER EXPENSES INCLUDE:

- Total capital expenditures, current operating funds
- Total financial aid
- Total of general university overhead funded by other units
- Total other costs funded by dental school
- Total computer services
- New construction, current operating funds
- Total capital expenditures, funded by other units
- Total capital expenditures, debt financing
- Resident stipends and benefits paid directly to resident by the hospital
- New construction, debt financing
- Building remodeling and renovations, current operating funds
- Community-based clinics
- Total library/learning resources
- Total continuing education
- New construction, funded by other units
- Total other costs funded by other units
- Equipment, current operating funds
- Building remodeling and renovations, funded by other units
- Patient care services funded by other units
- Information technology, current operating funds
- Equipment, funded by other units
- Equipment, debt financing
- Other major capital expenditures, funded by other units
- Other major capital expenditures, current operating funds
- Technology, debt financing
- Other major capital expenditures, debt financing
- Information technology, funded by other units
- Building remodeling and renovations, debt financing

Overview of Approach to Domain 2: Examining the Variation in Expenditures Across U.S. Dental Schools

Using data from the 2014 CODA *Survey of Dental Education Group IV: Curriculum*, the 2014 CODA *Survey of Dental Education Group III-Financial Management*, and the *American Dental Education Association (ADEA) Clinic Finance Survey, 2015*, we explored key variables that drive revenues and expenses, including the impact predoctoral curricular models have on the variation in expenditures across dental schools.

Conducted an *analysis of variance* (ANOVA), a statistical test used to determine whether or not the means of several groups are equal, to examine whether dental schools with similar curricular models also had similar levels of expenditures.

Conducted a *regression analysis* to determine which dental school attributes are correlated with four key variables: 1) total expenditures, 2) expenditures per student, 3) nonfaculty dental school clinic expenditures and 4) total revenue.

Goal: To better understand what is driving the variation among schools, in order to develop a better understanding of the opportunities that might exist to reduce expenditures and/or increase revenue.

Differences in predoctoral curricular models do not explain the differences in expenditures across dental schools.

Using the taxonomy from Domain 1, we examined whether the expenditures of schools *within* a curricular cluster are more similar than the expenditures of schools *across* different clusters. If they are it would suggest that a dental school's curricular model is correlated to its revenue and expenses.

The ANOVA showed that curricular models were not correlated with the variation across dental schools in total expenditures or expenditures per student.

This is an important finding, as recent discussions on the cost effectiveness of dental schools have often focused on the curriculum as a significant contributor to the variation in dental school expenditures.

What other variables might explain the variation in dental school revenue and expenditures?

Clinical Variables

Independent Variables		Clinical Variables
Community patient care days	Medicaid reimbursement index	Dental clinic expenditures (nonfaculty)
Total patient care clock hours	Cost of living index	Clinic expenses per DDSE
Comprehensive patient care	Ph.D. or M.S. program	Number of patient visits by junior and senior students
Curricular integration	DDSE	Clinic revenue from junior and senior students
Pedagogy cluster	Students, all	Patient hours by junior and senior students
Technology cluster	Part-time faculty (%)	Number of junior and senior students
Sponsored research and training dollars	Volunteer faculty (%)	Clinic faculty (% total faculty)
	Total faculty	

Data from the 2014 CODA Survey of Dental Education Group III: Financial Management and Group IV: Curriculum; and 2015 ADEA Clinic Finance Survey.

Regression analysis was used to determine which factors were *statistically significant* in explaining variation in revenue and expenditures.

Dependent Variable	What Does It Show?
Total expenditures	Which factors influence the overall cost of operating a dental school, with number of students being one of many factors?
Expenditures per student	Which factors influence the cost of educating a student (accounting for differences in the overall number of all students enrolled)?
Expenditures per DDSE	Which factors influence the cost of educating a students (accounting for differences in resources used by different types of students)?
Total Revenue <i>Resident tuition and fees 2012–13</i> <i>Nonresident tuition and fees 2012–13</i>	To what extent do the variables used to explain expenditures also explain variation in revenue?

Top Factors That Influence Total Expenditures (Model Explains 90% of the Variation in Total Expenditures)

Table 5. Top Factors That Influence Total Expenditures

Private (public = 0)	Decrease (public schools had higher expenditures)
Sponsored research and training dollars	Increase
Pedagogy cluster	Decrease (higher didactic and independent study had higher expenditures)
Total patient care clock hours	Increase
Cost of living index	Increase
Total, all faculty	Increase
Volunteer faculty (%)	Decrease
Students (DDSE)	Increase

Clinical Expenses per DDSE

Because clinical faculty compose the greatest share of overall clinical expenses, they dominate any analysis of total clinical expenditures.

To advance the conversation of clinical expenses beyond faculty, we examined factors that may contribute to nonfaculty clinical expenses.

None of the variables examined explain the variation in nonfaculty dental clinic expenses per DDSE or total nonfaculty dental clinic expenses.

As such, the analysis suggests that a strategy for reducing clinical expenditures may be to reduce faculty, with the caveat that doing so may also negatively impact clinical revenue and educational quality.

What Explains the Variation in Total Revenue?

Variable	Impact
Cost of Living Index	Higher cost of living INCREASED revenue
Total faculty	More faculty INCREASED revenue
Percentage of volunteer faculty	Higher percentage of volunteer faculty DECREASED revenue

Revenue and Expenses: *A Catch-22*

The **level of research** activity increases expenditures, but this expense may be offset by revenue generated (grants), is a critical component of the educational experience, and contributes to dentistry being a “learned profession.”

The **total amount of patient care** that students provide increase expenditures, but this expense may be offset by revenue generating and is a critical component of the educational experience.

Having **more full-time faculty** raises expenses, but also increases revenue.

Having **more part-time and volunteer faculty** reduces expenses but also reduces revenue.

Having **more students** reduces the cost per student (as more of the fixed costs can be distributed among more students); however, the number of student squared is not significant (meaning that there is not an “optimum” number of students that maximized net revenue).

What We Learned in Domain 2:

There is no Magic Bullet

Dental education, with its emphasis on research and clinical operations, is an inherently expensive undertaking.

Most, if not all, the variables explored will impact revenue and expenses. However, only four variables were found to be statistically significant in explaining the variation in expenses among dental schools: number of faculty, level of research activities, cost of living, and clinic expenses (measured as patient care).

The variables that were predictors of dental school expenditures tended to be ones that:

- Could be offset by revenue generation (research and patient care);
- Play a role in the delivery of education (number of full-time faculty and clinical care);
- Are beyond the control of the school (cost of living).

The predoctoral curricular model (as a whole) is not a predictor of expenditures.

While individual schools may have identified strategies that have been successful at their specific institution, given the significant variation among schools, there does not appear to be easily generalizable strategies or a singular approach to modeling dental schools that would result in increased revenue or reduced expenses

Domain 3: Ensuring the Level of Research and Scholarship Needed to Maintain Dentistry as a Learned Profession

Is the profession attracting and retaining the faculty needed to lead the research enterprise (and to ensure that dentistry continues to be a learned profession)?

An Expanded Understanding of Research and Scholarship

Traditional definition: Laboratory-based basic sciences

Modern definition: Laboratory-based basic sciences and. . .

- Educational research
- Practice-based research
- Translational research
- Clinical, behavioral, social and health sciences research
- Interprofessional education research

Advancements within *all of these aspects of research and scholarship* are essential to the future of the dental profession.

Overview of Approach to Domain 3: Ensuring the Level of Research and Scholarship Needed to Maintain Dentistry as a Learned Profession

Few methods exist to measure the level of research and scholarship at the “system” level.

We identified four indicators to serve as proxies for the level of research and scholarship occurring throughout dental education:

- Percentage of dental school faculty with Ph.D.s
- Levels of NIH funding
- Levels of total research funding
- Number of peer-reviewed dental-related journals focusing on dentistry and oral health

We used data from the National Institutes of Health (NIH) RePORTER database, 2014 Commission on Dental Accreditation (CODA) Survey of Dental Education Group III-Financial Management, ADEA Survey of Dental School Faculty, and Web of Science citations database.

Goal: To assess the level of research at the dental education “system” level and then identify opportunities “for the dental community to provide more effective advocacy for research support.”

There is a mixed picture for the current state of the research enterprise across the dental education community. And there is an inherent tension between the level of financial investment in research and scholarship needed to maintain dentistry as a learned profession and the desire to reduce the cost of dental education.

The Good News

While the share of NIDCR funding to dental schools has declined, the share of NIH funding from other Institutes and Centers has increased, partially offsetting the decline in NIDCR funding. As a result, dental schools' share of inflation-adjusted total NIH funding has remained fairly level.

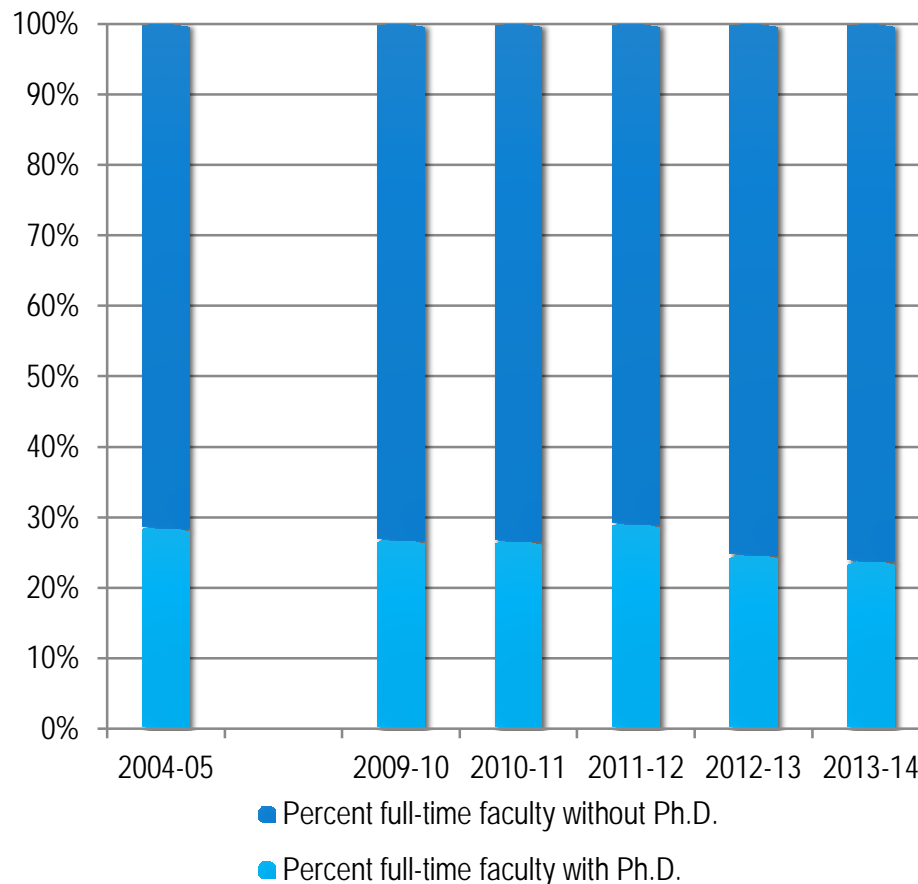
The number of peer-reviewed journals focused on dentistry and oral health, a proxy for measuring the growth in new knowledge within a profession, has increased by 25% over the past 6 years.

The Bad News

There has been a decrease in the number of full-time Ph.D. faculty, who often take the lead in conducting oral health research.

There has been a significant decline in NIH dollars, and specifically funding from NIDCR, to support the work of dental school researchers.

After holding relatively steady for the past two decades, the percentage of full-time faculty with Ph.D.s (*with or without a dental degree*) has declined over the past two years.



Percentage of Ph.D.s declined from 29% in 2011-12 to 23.7% in 2013-14.

Absolute number of Ph.D.s declined from 1,408 to 1,178 (loss of 230 faculty) during the same period.

Decline was most pronounced among faculty with a primary appointment within the basic sciences.

Potential drivers of the decline:

- Shift to the integrated curricular model
- Centralization of the basic sciences within the university
- Reduced need for basic sciences within the dental school as more schools are requiring basic science courses to be completed prior to matriculation

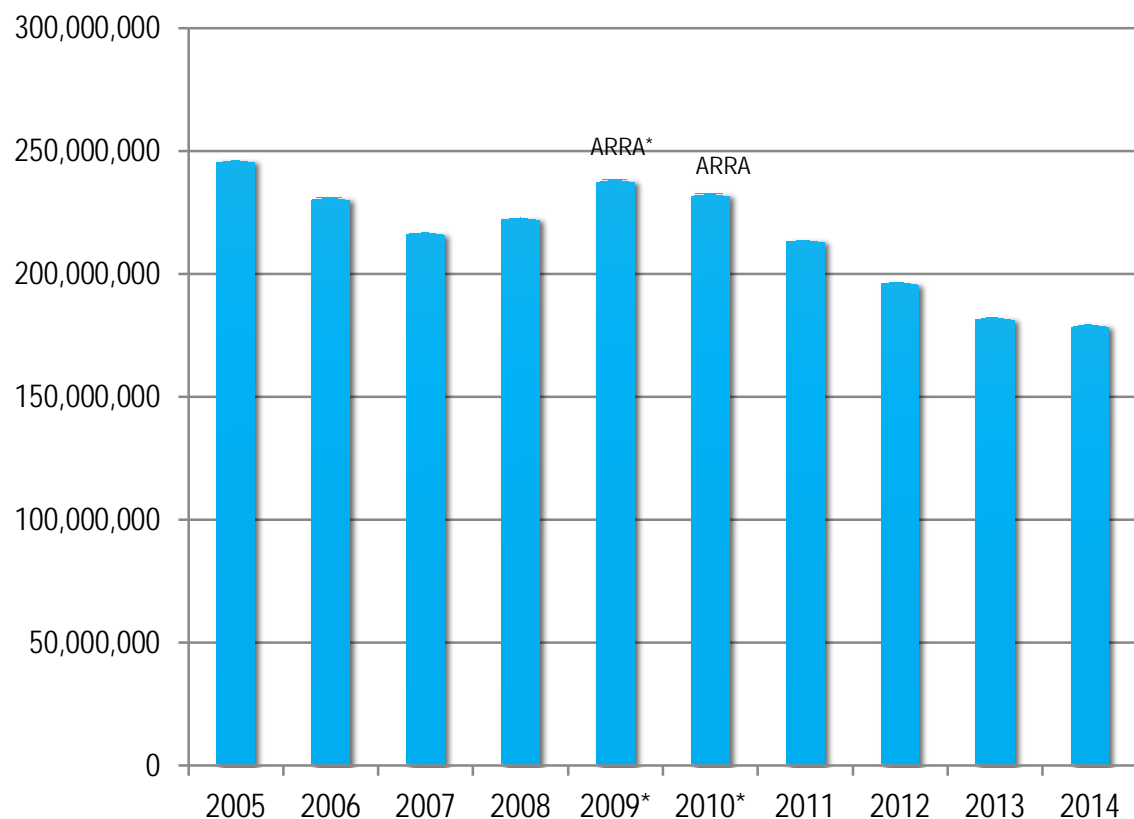
Funding is an essential component of building and maintaining the research capacity of dental schools.

Research funding can come from a variety of different sources; however, the most significant source of research funding in health care is from NIH.

Within NIH, NIDCR is a critically important funding source for dental research; however, it is important to focus on total NIH funding rather than only funding from NIDCR when assessing funding for dental school research.

Approximately 33% of the total money that dental schools receive from NIH is from outside the NIDCR.

NIH Funding to Schools of Dentistry and Oral Health (Inflation-adjusted)



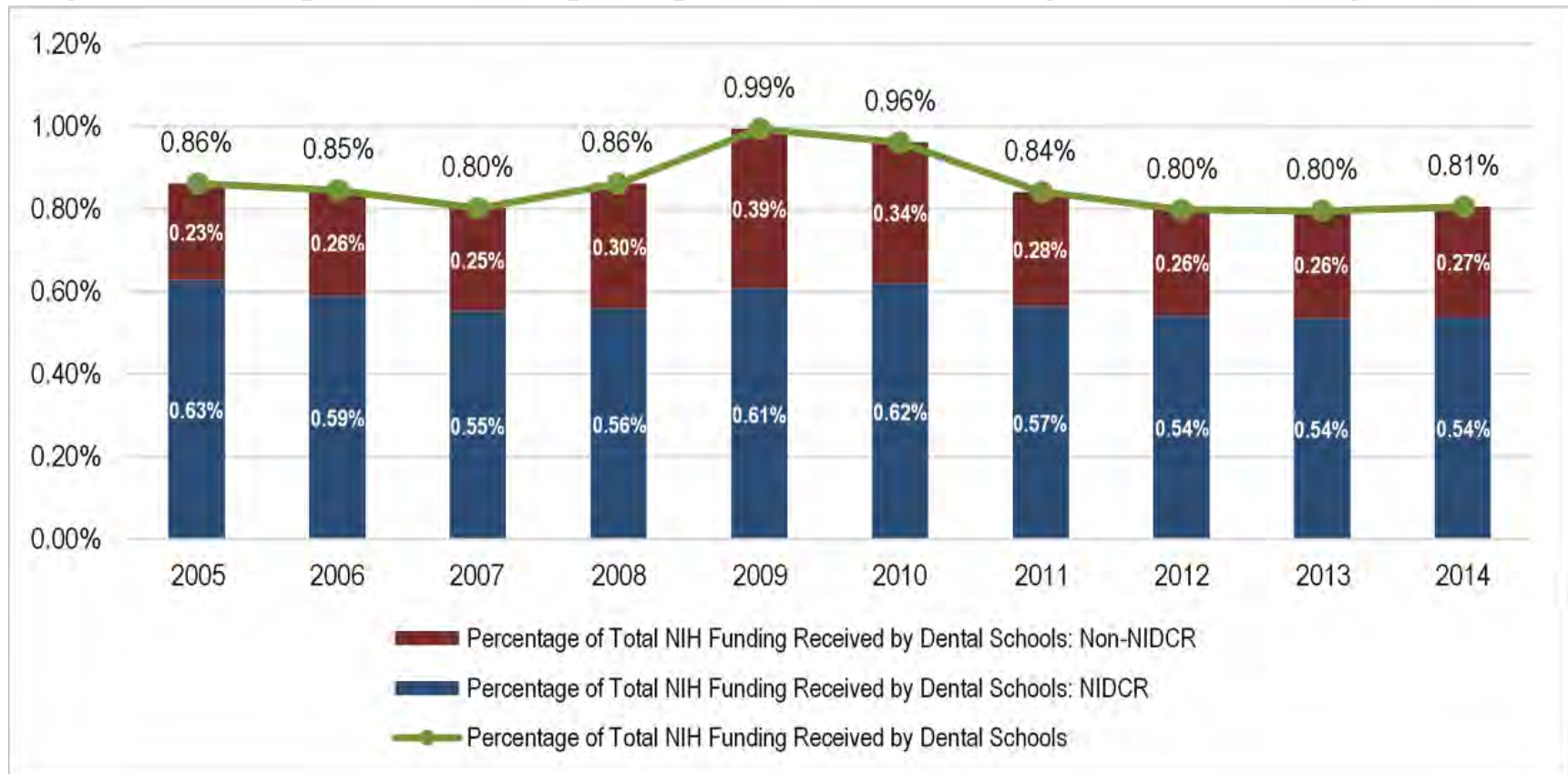
Overall, NIH funding to dental schools has declined over the past 10 years (with a brief uptick due to ARRA funding in 2009-10).

In 2005, NIH funded 588 projects and made grants of \$246M to dental schools (in constant 2014 dollars).

In 2014, NIH funded 486 projects and made grants of \$179M to dental schools.

While real dollars have declined, dental schools' share of NIH research and training funds has remained relatively unchanged over the past decade.

Graph 6: Percentage of NIH Funding Going to Schools of Dentistry and Oral Health by Source



What is driving the decline in NIDCR funding?

In 2005, 50% of NIDCR funding went to dental schools. By 2014, the percentage had declined to 41.4%.

Graph 7: Amount of Total NIDCR Funding and Percentage of NIDCR Funding Received by Dental Schools, 2005 to 2014 Fiscal Years (2014 Constant Dollars, in thousands)

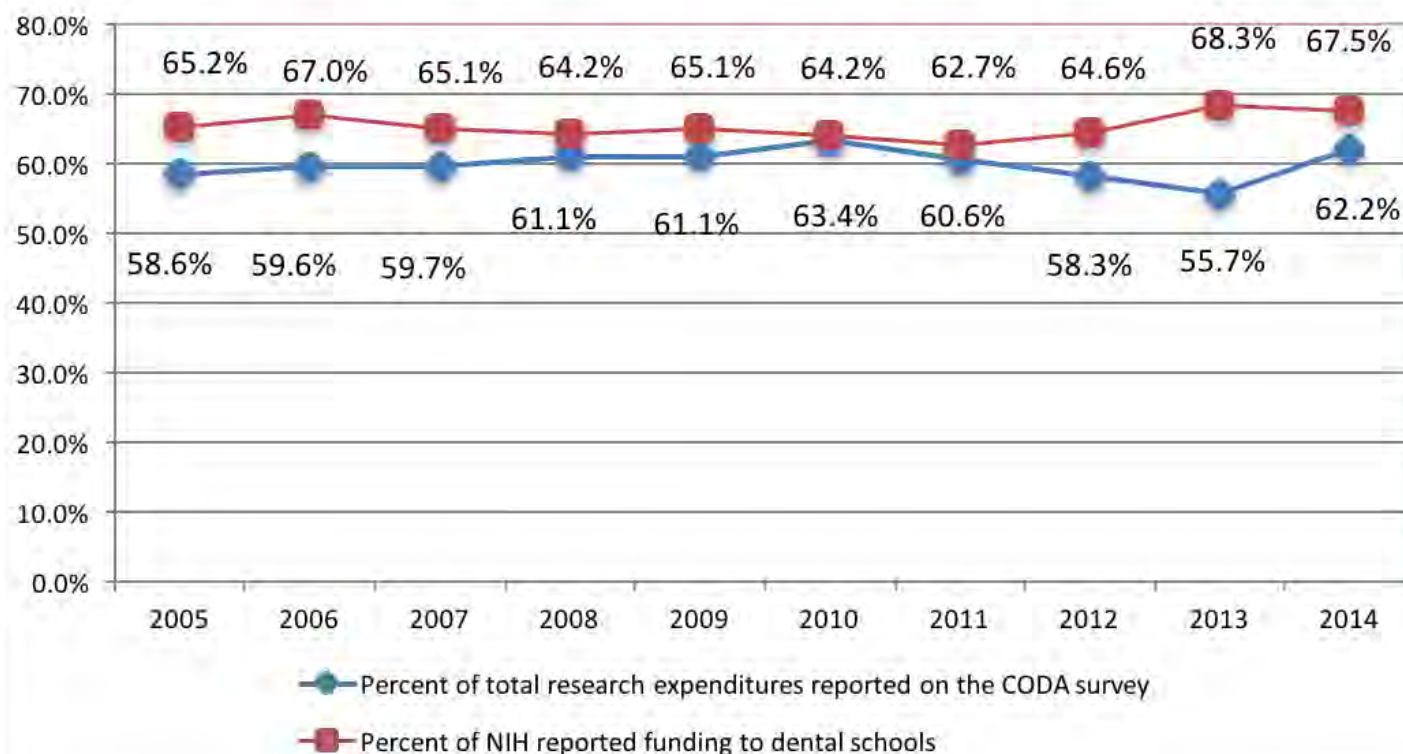


The decline in NIDCR funding appears to be largely attributable to:

1. The shift in NIH's and NIDCR's funding research priorities into areas of science that have not been traditional areas of focus for dental school faculty, and
2. A decline in the number of proposals submitted by dental school faculty to NIDCR.

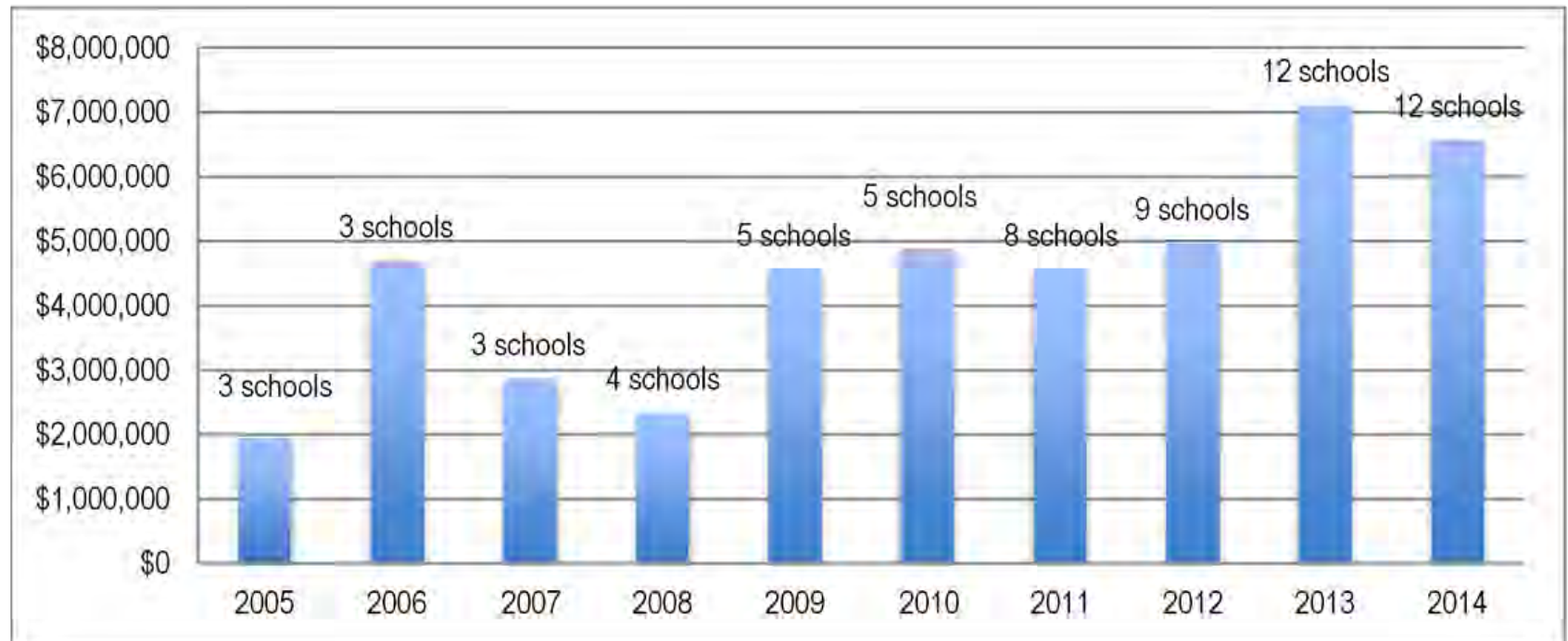
The decline in total research funding has not been experienced equally by all schools. Of the 65 U.S. dental schools, the 15 schools with research budgets greater than \$10M received 67.5% of all NIH funding awarded to dental schools in 2014.

Graph 9 Percentage Share of Research Funding Among 15 dental Schools With the Largest Research Budgets (Inflation-adjusted)



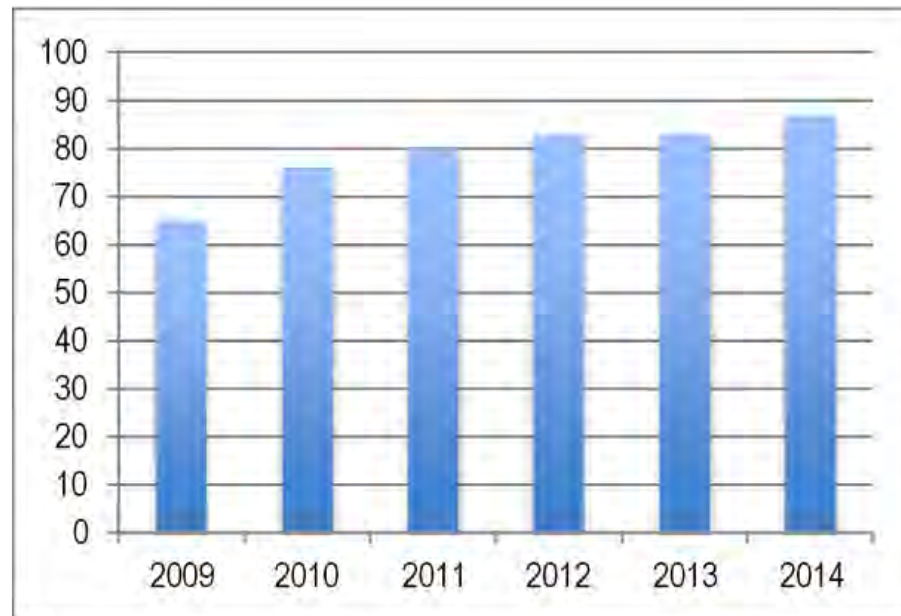
While still a small percentage of total NIH research funding, research expenditures at the subset of schools founded since 1980 have increased three-fold since 2005.

Graph 10: Research Expenditures at Dental Schools Founded Since 1980



There has been a 25% increase in the number of peer-reviewed journals focused on dentistry and oral health over the past six years.

Graph 11: Number of Dental-related Journals



Between 2009 and 2014, 23 new journals were listed under the heading of Dentistry, Oral Surgery & Medicine in the Web of Science citations database.

In addition, there was an increase in the number of articles referencing oral health appearing in scientific journals beyond the dental community.

While the number of journals does not speak to the quality of the research, because journals serve as the primary forum for presenting research findings, the increase in the number of journals suggests there continues to be growth in the volume of published, peer-reviewed research related to dentistry and oral health, a clear indicator of continued vibrancy of the field and its position as a learned profession.

Opportunities for the Dental Community to Provide More Effective Advocacy for Research Support

Ongoing advocacy by the ADA, ADEA and AADR to increase NIH funding should continue to be a primary focus of these associations' advocacy agendas.

Continued efforts to increase the competitiveness of dental school faculty to receive research grants from NIH and other sources is important to reverse the decline in percentage of NIDCR funding being directed to dental schools and to increase total research activity among dental schools.

- Foster a culture of research within dental schools
- Build the “researcher pipeline” for the future
- Support efforts to increase the number of faculty actively engaged in research, particularly the subset of full-time faculty with Ph.D.s
- Increase faculty development efforts to strengthen research competitiveness and capacity
- Make investments in the research infrastructure of dental schools to remain competitive into the future.

What We Learned in Domain 3:

There is a Tension Between Needed Investments in the Research Enterprise and the Cost of Dental Education

Investments in human capital and infrastructure are essential for ensuring that dentistry maintains its respected status as a learned profession.

However, as illustrated in the report for Domain 2 of this study, faculty and research are also key drivers of the cost of dental education.

Therefore, there may be inherent tension between the desire to invest in the research enterprise needed for the future and the desire to reduce the cost of dental education.

In Summary

If you've seen one dental school, you've seen one dental school.

There is no “single best” financial model for dental schools that would result in increased revenue or reduced expenses.

Dentistry remains a learned profession, but additional investment in the research enterprise is needed to maintain this position.

Resolution No. 73 NewReport: N/A Date Submitted: September 2016Submitted By: Council on Scientific AffairsReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Membership-Obj. 1: Leaders and Advocates in Oral Health

How does this resolution increase member value: See Background

PROPOSED REVISION OF THE ADA POLICY ON INTRAORAL/PERIORAL PIERCING AND TONGUE SPLITTING

Background In accordance with House Resolution 170H-2012, the Council on Scientific Affairs reviews Association policies on a range of scientific issues every five years, and proposes policy revisions or other recommendations as appropriate to inform ADA policy-making based on the best available evidence.

Proposed Update of the 2012 ADA Policy on Intraoral/Perioral Piercing and Tongue Splitting: In 2016, the Council conducted a detailed review of the available research evidence on injuries, complications and adverse events associated with intraoral/perioral piercing and tongue splitting. Based on the considerable evidence of complications associated with oral piercing (e.g., infections, injuries/damage to hard and soft tissues, gingival recession and severe complications, such as Ludwig's angina, endocarditis, brain abscess), and the inherent dangers presented by the practice of tongue splitting, the Council recommended establishing a more concise and succinct policy position for the Association.

In July 2016, the Council approved a proposal to recommend that the ADA House of Delegates amend the 2012 ADA Policy on Intraoral/Perioral Piercing and Tongue Splitting by deletion and addition to reaffirm and rephrase the final statement in the 2012 policy statement to read as follows:

Resolved, that the American Dental Association advises against the practices of cosmetic intraoral/perioral piercing and tongue splitting, and views these as invasive procedures with negative health sequelae that outweigh any potential benefit.

In CSA's review of the 2012 ADA policy statement, the Council concluded that the policy presents overly detailed and technical information, plus a list of references that requires periodic and continual updating over time. The Council recommends revising the closing statement in the current ADA policy in this proposed policy update. The Council's revised policy language includes a verb change emphasizing that the ADA "advises against" (rather than "opposes") the practices of oral piercing and tongue splitting.

In connection with CSA's recommendation to amend this ADA policy, the Council directed ADA Science Institute staff to convert the 2012 policy statement content into an updated "Oral Health Topic" page on ADA.org addressing oral piercing (<http://www.ada.org/en/member-center/oral-health-topics/oral-piercing>), which presents the current ADA policy language (adopted by the 2012 House of Delegates). The ADA policy statement content that has been proposed for rescission (in the draft resolution below) will be reviewed and updated for the ADA.org "Oral Health Topics page" on oral piercing, regardless of the

House's decision regarding CSA's recommendation to amend the ADA policy on this topic. The planned update of the ADA.org page on oral piercing will present information of direct relevance to dentists, including content about oral and systemic adverse events associated with oral/perioral piercing and tongue splitting, plus recommendations for oral piercing management.

The following resolution is presented for House consideration, with a recommendation to vote yes.

Resolution

73. Resolved, that the ADA recommends that the ADA Policy Statement on Intraoral/Perioral Piercing and Tongue Splitting (*Trans.* 1998:743; 2000:481; 2004:309; 2012:469) be amended as follows (additions are underscored; deletions are ~~stricken~~):

~~Piercing and tongue splitting are forms of body art and self-expression in today's society. However, oral piercings, which involve the tongue (the most common site),¹⁻³ lips, cheeks, uvula or a combination of sites, and tongue splitting can be associated with a number of adverse oral and systemic conditions.~~

~~As with any puncture wound or incision, piercing and tongue splitting can cause pain,³⁻⁵ swelling,²⁻⁶ and infection.^{4,5,7} Potential complications of intraoral and perioral piercings specifically are numerous, although available scientific literature is rather limited and consists mainly of case reports. Possible adverse outcomes secondary to oral piercing include increased salivary flow;^{5,8} gingival injury or recession,^{2,6,9-13} damage to teeth,^{1,2,5,6,14} restorations and fixed porcelain prostheses; interference with speech,^{1,3,4} mastication^{3,4} or deglutition;⁴ scar-tissue formation;⁸ and development of metal hypersensitivities.^{15,16} Because of the tongue's vascular nature, prolonged bleeding can result if vessels are punctured during the piercing procedure.¹⁷ In addition, the technique for inserting tongue jewelry may abrade or fracture anterior dentition,^{1,2,5,7,14} and digital manipulation of the jewelry can significantly increase the potential for infection.⁴⁻⁷ Airway obstruction due to pronounced edema²⁻⁵ or aspiration of jewelry poses another risk, and aspirated or ingested jewelry could present a hazard to respiratory or digestive organs.^{3,6} In addition, oral ornaments can compromise dental diagnosis by obscuring anatomy and defects in radiographs. There have been reports of the jewelry becoming embedded in surrounding tissue, requiring surgical removal.^{6,9} It also has been speculated that galvanic currents from stainless-steel oral jewelry in contact with other intraoral metals could result in pulpal sensitivity.¹⁸~~

~~Secondary infection from oral piercing can be serious. Piercing has been identified as a possible vector for bloodborne hepatitis (hepatitis B, C, D and G) transmission.^{19,20} Cases of endocarditis also have been linked to oral piercing.^{21,22} In addition, the British Dental Journal reported a case of Ludwig's angina, a rapidly spreading cellulitis involving the submandibular, sublingual and submental fascial spaces bilaterally, that manifested four days after a 25-year-old patient had her tongue pierced.²³ Intubation was necessary to secure the airway. When antibiotic therapy failed to resolve the condition, surgical intervention was required to remove the barbell-shaped jewelry and decompress the swelling in the floor of the mouth. In another case, a healthy 19-year-old woman contracted herpes simplex virus, presumably through a recent tongue piercing. The infection progressed to fulminant hepatitis and subsequent death.²⁴~~

~~Although reports describing the morbidity and mortality associated with tongue splitting are currently not available in the literature, the risk of complications secondary to surgical procedures (including pain, swelling and infection) is well known. Therefore, the Association recommends that its members discourage patients who request the procedure by educating them of the risks associated with this surgery.~~

Resolved, that ~~Because of its potential for numerous negative sequelae, the American Dental Association opposes~~ advises against the practices of cosmetic intraoral/perioral piercing and tongue splitting, and views these as invasive procedures with negative health sequelae that outweigh any potential benefit.

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BOARD RECOMMENDATION: Vote Yes.

BOARD VOTE: UNANIMOUS (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO BOARD DISCUSSION)

Resolution No. 74 NewReport: N/A Date Submitted: September 2016Submitted By: Council on Scientific AffairsReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: Amount One-time Amount On-going FTE 0

ADA Strategic Plan Objective: Membership-Obj. 1: Leaders and Advocates in Oral Health

How does this resolution increase member value: See Background

PROPOSED REVISION OF THE ADA POLICY ON RESEARCH FUNDS

Background: In accordance with House Resolution 170H-2012, the Council on Scientific Affairs reviews existing Association policies on scientific issues every five years, and proposes policy revisions or other recommendations as appropriate to support evidence-informed policy development.

Proposed Revision of ADA Policy on Research Funds: In July 2016, the Council approved several draft revisions to 1999 ADA Policy on Research Funds (*Trans.* 1984:519; 1999:974) for transmittal to the 2016 House of Delegates for review and approval. The current policy reads as follows:

Resolved, that the Board of Trustees reevaluate the expenditures currently being made by the Association for and in support of basic and applied scientific laboratory research activities relating to the practice of dentistry as outlined and prioritized by the Association's Research Agenda titled "Research Issues of Importance to the Practicing Dentist."

The Council recommended amending the above policy based on the following rationale:

- The 1999 policy presents "directive" language to the Board of Trustees, rather than a policy or guiding principle for the entire Association. In accordance with the ADA *Constitution and Bylaws*, the Board is duly authorized, as the ADA's managing body, to "[p]repare a budget for carrying on the activities of the Association for each ensuing fiscal year." Budgetary and funding proposals for "basic and applied science laboratory research" are typically presented to the Board by the Council or other departments within the ADA Science Institute. Any Board evaluation of such recommendations may be performed within—or beyond—the parameters of the ADA Research Agenda, in accordance with the Board's preferences and consensus.
- The ADA Research Agenda is updated biennially to identify and promote key dental research priorities for the dental profession, and it serves as a research advocacy tool for the Association to promote the advancement of dental research and science. Any internal ADA expenditures pertaining to the Research Agenda may be addressed by the Board of Trustees as it deems appropriate, and such considerations should not be unnecessarily restricted by ADA policy.

Rather than proposing rescinding the 1999 Research Funds policy, the Council proposed amending the policy statement to read as follows:

Resolved, that the ADA urges appropriate external agencies and organizations to provide funding for basic and clinical research that advances the scientific basis of dentistry and the oral and craniofacial health sciences.

This proposed policy amendment is fully aligned with CSA's long-standing advocacy for the dental research enterprise and urging appropriate external agencies and organizations (e.g., the National Institute for Dental and Craniofacial Research) to "provide funding for basic and clinical research that advances the scientific basis of dentistry and the oral and craniofacial health sciences," as stated in the proposed amendment. This amended policy statement would complement the Council's Bylaws responsibility to promulgate a "biennial research agenda" for the dental profession, and it would establish updated principles for ADA research advocacy to advance dentistry and the oral and craniofacial sciences. The amended policy language would serve as a platform for the ADA to promote adequate research funding by "external agencies and organizations," and it would support ADA advocacy for stronger dental research programs and enhancing the overall infrastructure for dental research (e.g., adequate staff support, research grants, technology, instrumentation and facilities).

The following resolution is presented for House consideration, with a recommendation to vote yes.

Resolution

74. Resolved, that the ADA Policy on Research Funds (*Trans.*1984:519; 1999:974) be amended as follows (additions are underlined; deletions are ~~stricken~~):

Resolved, that ~~the Board of Trustees reevaluate the expenditures currently being made by the Association for and in support of basic and applied scientific laboratory research activities relating to the practice of dentistry as outlined and prioritized by the Association's Research Agenda titled "Research Issues of Importance to the Practicing Dentist."~~the ADA urges appropriate external agencies and organizations to provide funding for basic and clinical research that advances the scientific basis of dentistry and the oral and craniofacial health sciences.

BOARD RECOMMENDATION: Vote Yes.

BOARD VOTE: UNANIMOUS (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO BOARD DISCUSSION)

Resolution No. 75 NewReport: N/A Date Submitted: September 2016Submitted By: Council on Scientific AffairsReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Membership-Obj. 1: Leaders and Advocates in Oral Health

How does this resolution increase member value: See Background

PROPOSED REVISION OF THE ADA POLICY ON COMPARATIVE EFFECTIVENESS RESEARCH

Background: In accordance with House Resolution 170H-2012, the Council on Scientific Affairs reviews Association policies on a range of scientific issues every five years, and proposes policy revisions or other recommendations as appropriate to inform ADA policymaking based on the best available evidence.

Proposed Revision of ADA Policy on Comparative Effectiveness Research (Patient-Centered Outcomes Research) (Trans.2011:457): In July 2016, the Council approved several draft revisions to 2011 ADA Policy on Comparative Effectiveness Research (Patient-Centered Outcomes Research) [CER/PCOR] for transmittal to the 2016 House of Delegates for consideration as amendments to the 2011 policy. The Council's proposed revisions are presented in Appendix 1 to this report.

The Council's recommendations for updating the 2011 policy statement include:

- Renaming the policy statement to clarify terminology:* The Council recommended renaming the policy to address CER and PCOR as two distinct concepts that are related and compatible, but not "equivalent." The Institute of Medicine defines CER as "the generation and synthesis of evidence that compares the benefits and harms of alternative methods to prevent, diagnose, treat, and monitor a clinical condition or to improve the delivery of care" (ref: <http://www.ncbi.nlm.nih.gov/pubmed/20473202>). While CER focuses on comparative investigations of health care interventions, PCOR is defined as "[r]esearch that compares clinical interventions," and focuses primarily on "clinical outcomes that are *important and meaningful to patients*" (emphasis added). The Patient-Centered Outcomes Research Institute (PCORI) has also reported that PCOR and CER are compatible, but non-equivalent concepts: "The definition of PCOR includes many components of CER, but is intended to be broader to also include other focuses and other research methodologies" (ref: <http://www.pcori.org/assets/PCOR-Definition-Revised-Draft-and-Responses-to-Input.pdf>). PCOR aims to bring patient perspectives to the forefront, and "helps people and their caregivers communicate and make informed healthcare decisions, allowing their voices to be heard in assessing the value of healthcare options" (ref: <http://www.pcori.org/research-results/patient-centered-outcomes-research>).
- Integrating additional editorial revisions to clarify information and remove policy language that is unnecessarily restrictive:* The Council proposed several amendments to the 2011 policy statement to revise language that was considered "unnecessarily restrictive" for CER and PCOR on dental health care interventions. One example is CSA's proposed revision of the following statement to address "adequate consideration" of specific populations in CER and PCOR studies (deletions in ~~strikethrough~~, additions underlined):

CER and PCOR must ~~stratify studies to~~ adequately consider specific populations by race, gender, ethnicity, age, economic status, geography or any other relevant variable to assure the applicability of the study.

- *Adding one new principle (#7) to the policy to address dental patient outcomes in CER/PCOR studies:* The Council proposed adding one new principle (#7) to the updated policy statement to emphasize that CER/PCOR “should address dental treatment outcomes” as a primary research need for dental clinicians and a priority for dental patient-centered outcomes research in the future (e.g., analysis of dental treatment outcomes data from electronic health records, standardization of dental patient-reported outcome measures).

The Council recommends that the House review and approve the updated policy statement on CER and PCOR, as presented in Appendix 1 to this report. The following resolution is presented for House consideration.

Resolution

75. Resolved, that the ADA Policy on Comparative Effectiveness Research (Patient-Centered Outcomes Research) (*Trans.*2011:457) be amended by deletion and addition as presented in Appendix 1 of this report.

BOARD RECOMMENDATION: Vote Yes.

BOARD VOTE: UNANIMOUS (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO BOARD DISCUSSION)

APPENDIX 1

UPDATED DRAFT POLICY STATEMENT ON COMPARATIVE EFFECTIVENESS RESEARCH
(PATIENT-CENTERED OUTCOMES RESEARCH)(additions underlined, deletions ~~stricken~~)**Policy Statement on Comparative Effectiveness Research and (Patient-Centered Outcomes Research)**

The American Dental Association (ADA) has a long history of identifying and supporting scientific advances in dentistry. Through rigorous scientific inquiry and knowledge sharing, the ADA supports advancements in dental research that improve the health of all Americans.

As an organization with a strong ~~belief in~~ commitment to evidence-based dentistry and improving patient outcomes, the ADA supports comparative effectiveness research and patient-centered outcomes research (CER and PCOR) as methodologies that can lead to improved clinical outcomes, more cost-effective and personalized treatments, higher quality and increased patient satisfaction. Concurrently, such research should be designed to address important variables that may impact outcomes, such as patient ~~subgroups~~ populations, to help address biological variability and individual patient needs.

Through the 2010 Patient Protection and Affordable Care Act, Congress has established an independent, non-profit organization to conduct comparative effectiveness research and patient-centered outcomes research ~~this research~~. This organization, the Patient-Centered Outcomes Research Institute (PCORI), ~~is in the process of obtaining~~ seeks public input and feedback prior to adoption of priorities, agendas, methodological standards, peer review processes and ~~or~~ dissemination strategies.

Therefore, the ADA urges PCORI or other CER/PCOR entities to incorporate the following principles when evaluating diagnostic or treatment modalities pertaining to the provision of oral health care.

1. CER/PCOR Must ~~be~~ Well Designed.

Objective, independent researchers should conduct thorough, rigorous and scientifically valid research with specific outcome measures. The researchers' and sponsors' Actual, potential and perceived conflicts of interest must be disclosed.

Protocols must be developed to ensure sound, reliable and reproducible research. Additionally, all efforts must be made to reduce ~~eliminate the introduction of~~ bias into research protocols, literature reviews and clinical summaries.

Patient safety, confidentiality of personal health information and data security must be assured. Institutional review boards (IRBs) must be used to consider whether any risk to patients is balanced by potential research gains. ~~It is essential to obtain~~ Informed consent must be obtained from patients participating in CER and PCOR studies.

CER and PCOR must adequately consider ~~stratify studies to~~ specific populations by race, gender, ethnicity, age, economic status, geography or any other relevant variable to assure the applicability of the study.

Long-term and short-term studies should be performed and adequately funded. Periodic reevaluation must be done to determine the efficacy of oral health related to CER/PCOR.

2. CER and ~~AND~~ PCOR Processes Must ~~be~~ Open and Transparent.

Setting research priorities, developing research techniques and selecting investigators must be accomplished following an equitable, transparent process that emphasizes engagement with patients and openness to ideas from individuals across the health care community. As the experts in oral health delivery, dentists and/or dental researchers must have central roles in these processes.

3. CER/PCOR Should Not Limit Innovative Treatments or Diagnostics.

CER/PCOR should not act to limit the continued development of innovative therapeutic or diagnostic

1 modalities provided they are in accordance with ADA policy, which may not initially produce marked
2 clinical superiority but which demonstrate the potential for improved outcomes.
3

4 4. The Doctor/Patient Relationship Must Be Maintained.

5
6 The unique dentist/patient relationship and patient autonomy are overriding principles that must be
7 included when assessing CER/PCOR information. Results from CER/PCOR studies should not be used
8 to mandate or predetermine a course of treatment for an individual patient, nor should it be used to
9 determine a standard of care.

10
11 5. CER/PCOR Should Be Widely Disseminated.

12
13 Balanced, clear, accurate, effective and timely communication of results, written with the audience in
14 mind, should be made. ~~Study results should include any limitations of the study.~~ PCORI or other
15 CER/PCOR research entities should work with the ADA to disseminate results to the profession that are
16 relevant to oral health care providers.

17
18 6. CER/PCOR Should Not Be Payment Driven.

19
20 PCORI or other CER/PCOR entities should not make recommendations on payment or coverage
21 decisions. The primary ~~purpose and~~ focus of research designed and/or supported by PCORI or other
22 CER and PCOR entities should be ~~the improvement of~~ to improve patient outcomes, quality of care
23 and/or quality of life.

24
25 7. CER/PCOR Should Address Dental Treatment Outcomes.

26
27 The dental profession needs PCOR and CER for improved evaluation of health outcomes in clinical practice.
28 This includes independent evaluation of the effectiveness of specific treatments in dental practice, and
29 improved measurement and assessment of patient-centered outcomes over time.

Resolution No. 81 NewReport: N/A Date Submitted: September 2016Submitted By: Council on Scientific AffairsReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: _____

Amount One-time _____ Amount On-going _____ FTE _____

ADA Strategic Plan Objective: Membership-Obj. 1: Leaders and Advocates in Oral Health

How does this resolution increase member value: See Background

RESPONSE TO RESOLUTION 69H-2014—PROPOSAL TO ADOPT ADA POLICY ON OPTIMIZING DENTAL HEALTH PRIOR TO SURGICAL/MEDICAL PROCEDURES AND TREATMENT

Background: In 2016, the Council explored the development of new Association policy on Optimizing Dental Health Prior to Surgical/Medical Procedures and Treatment, in accordance with Resolution 69H-2014, which directed CSA to explore the fiscal implications of developing “a policy statement and evidence-based guidelines for physicians and surgeons to eliminate the impact of untreated dental disease prior to and concurrent with complex medical or surgical procedures.”

A thorough review of the fiscal implications of developing evidence-based guidelines on these topic areas is presented in a separate report to the 2016 House of Delegates, titled “Council on Scientific Affairs: Response to 69H-2014—Proposal to Convene Three Expert Panels to Address Optimizing Dental Health Prior to Surgical/Medical Procedures and Treatment.” Delegates are encouraged to review and consult that report in conjunction with this proposal to establish new Association policy.

Proposal to Adopt New Association Policy on Optimizing Dental Health Prior to Surgical/Medical Procedures and Treatment: In 2016, the Council worked with an expert working group that was assigned to address Resolution 69H-2014 and to consider the development of draft policy language, for consideration by the ADA House of Delegates, regarding the optimization of dental health prior to surgical and/or medical procedures and treatment, in partial fulfillment of Resolution 69H-2014.

Following a thorough review of the best available evidence (as addressed in the accompanying CSA report addressing Resolution 69H-2014), the Council developed and approved a draft policy statement in August 2016, which is presented as a resolution (below) for House consideration.

The importance of good oral health prior to the performance of major surgical or medical procedures cannot be ignored. In fact, in 2000, the Institute of Medicine (IOM) investigated the importance of this concept to promote change in the Health Care Finance Administration policy.¹ The IOM Committee found that evidence was lacking for determining the importance of obtaining proper dental care prior to surgery for major medical conditions, such as cardiovascular disease, cancer or organ transplantation. Despite the lack of strong evidence, the IOM report emphasized the importance of maintaining optimal dental health prior to these medical and surgical procedures as an important opportunity to enhance patient health, inter-professional practice, and team-based care.

¹ Field MJ, Lawrence RL, Zwanziger L, eds. Chapter 4. Medically necessary dental services. In: *Extending Medicare Coverage for Preventive and Other Services*. Washington, DC: The National Academy Press; 2000.

The Council concluded that developing and adopting a new, overarching ADA policy would clarify the Association's position with regard to optimizing dental health prior to the performance of complex medical or surgical procedures as an essential component of clinical care. To the extent that dental care helps to reduce oral infection, the Council agreed that it is both reasonable and plausible that optimizing dental care can promote a better overall health outcome. Achieving better overall health outcomes, in turn, requires interprofessional communication and collaboration to specify that the dental patient is free from acute oral infection, and to minimize the possibility of sustaining complications after medical treatment or surgical procedures. The prevention and management of oral infection have considerable health implications when such infections have the potential to negatively impact the health of patients who are immunocompromised or those who otherwise are at greater risk of adverse medical outcomes because of their underlying health problems.

The Council on Scientific Affairs submits the following resolution for House consideration, with a recommendation to vote yes.

Resolution

81. Resolved, that the following "ADA Policy Statement on Optimizing Dental Health Prior to Surgical/Medical Procedures and Treatment" be adopted:

The ADA believes that optimizing dental health prior to the performance of complex medical and surgical procedures is an essential component of clinical care. Interprofessional communication and collaboration are essential to specify that the dental patient is free from acute oral infection, and to minimize the possibility of post-medical/surgical complications. The prevention and management of oral infection have considerable health implications when such infections have the potential to seriously complicate the medical management of patients who are immunocompromised or otherwise at greater risk of adverse medical outcomes because of their underlying health problems. Obtaining a dental examination and consultation prior to initiation of complex surgical and medical treatments is especially indicated for patients with serious and potentially fatal systemic disease.

BOARD COMMENT: The Board appreciates the work of the Council and supports the resolution. The Board recommends that Reference Committee C amend the resolution by changing the word "dental" to "oral," to be more comprehensive and inclusive of the entire craniofacial complex.

BOARD RECOMMENDATION: Vote Yes.

BOARD VOTE: UNANIMOUS.

Resolution No. 83 NewReport: N/A Date Submitted: August 2016Submitted By: Commission on Dental AccreditationReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Organizational Capacity-Obj. 6: Role and responsibility of each element of the tripartite clearly defined and agreed upon

How does this resolution increase member value: Not Applicable

1 REVISION OF THE RULES OF THE COMMISSION ON DENTAL ACCREDITATION

2 **Background:** In summer 2016, the Commission on Dental Accreditation (CODA) directed that the *Rules*
 3 *of the Commission on Dental Accreditation* be revised to include the Commission's new mission
 4 statement, which was developed in accordance with CODA's 2017-2021 strategic plan. The revised
 5 CODA mission statement is effective January 1, 2017.

6 In accordance with ADA *Bylaws*, Section 130, Duties, the Commission may submit amendments to its
 7 *Rules* to the ADA House of Delegates for approval by majority vote. Appendix 1 includes the proposed
 8 revisions, with additions underscored and deletions ~~stricken~~.

9 Resolution

10 **83. Resolved,** that the *Rules* of the Commission on Dental Accreditation be amended as noted in
 11 Appendix 1 of the Commission's Supplemental Report 1 to the House of Delegates.

12
 13 **BOARD RECOMMENDATION: Vote Yes.**

14 **BOARD VOTE: UNANIMOUS.**

Appendix 1: Rules of the Commission on Dental Accreditation**Article I. MISSION**

The Commission on Dental Accreditation serves the public and profession by developing and implementing accreditation standards that promote and monitor the continuous quality and improvement of dental education programs. ~~The Commission on Dental Accreditation serves the oral health care needs of the public through the development and administration of standards that foster continuous quality improvement of dental and dental related educational programs.~~

Article II. BOARD OF COMMISSIONERS

Section I. LEGISLATIVE AND MANAGEMENT BODY: The legislative and management body of the Commission shall be the Board of Commissioners.

Section 2. COMPOSITION: The Board of Commissioners shall consist of:

Four (4) members shall be selected from nominations open to all trustee districts from the active, life or retired members of this association, no one of whom shall be a faculty member working more than one day per week of a school of dentistry or a member of a state board of dental examiners or jurisdictional dental licensing agency. These members shall be nominated by the Board of Trustees and elected by the American Dental Association House of Delegates.

Four (4) members who are active, life or retired members of the American Dental Association shall be selected by the American Association of Dental Boards from the active membership of that body, no one of whom shall be a member of a faculty of a school of dentistry.

Four (4) members who are active, life or retired members of the American Dental Association shall be selected by the American Dental Education Association from its active membership. These members shall hold positions of professorial rank in dental schools accredited by the Commission on Dental Accreditation and shall not be members of any state board of dental examiners.

The remaining Commissioners shall be selected as follows: one (1) certified dental assistant selected by the American Dental Assistants Association from its active or life membership, one (1) licensed dental hygienist selected by the American Dental Hygienists' Association, one (1) certified dental laboratory technician selected by the National Association of Dental Laboratories, one (1) student selected jointly by the American Student Dental Association and the Council of Students of the American Dental Education Association, one (1) dentist for each ADA recognized dental specialty who is board certified in the respective special area of practice and is selected by the respective specialty sponsoring organization, one (1) dentist representing postdoctoral general dentistry who is jointly appointed by the American Dental Education Association and the Special Care Dentistry Association and four (4) consumers who are neither dentists nor allied dental personnel nor teaching in a dental or allied dental education institution and who are selected by the Commission, based on established and publicized criteria. In the event a Commission member sponsoring organization fails to select a Commissioner, it shall be the responsibility of the Commission to select an appropriate representative to serve as a Commissioner. A member of the Standing Committee on the New Dentist (when assigned by the ADA Board of Trustees) and the Director of the Commission shall be ex-officio members of the Board without the right to vote.

Section 3. TERM OF OFFICE: The term of office of the members of the Board of Commissioners shall be one four (4) year term except that the member jointly selected by the American Dental Education Association and the American Student Dental Association shall serve only one two (2) year term.

1 Section 4. POWERS:

- 2
- 3 A. The Board of Commissioners shall be vested with full power to conduct all business of the
- 4 Commission subject to the laws of the State of Illinois, these *Rules* and the *Constitution and*
- 5 *Bylaws* of the American Dental Association.
- 6
- 7 B. The Board of Commissioners shall have the power to establish rules and regulations not
- 8 inconsistent with these *Rules* to govern its organization and procedures.
- 9

10 Section 5. DUTIES:

- 11
- 12 A. The Board of Commissioners shall prepare a budget at its winter meeting each year for
- 13 carrying on the activities of the Commission for the ensuing fiscal year and shall submit said
- 14 budget to the Board of Trustees of the American Dental Association for funding in accordance
- 15 with Chapter XIV of the *Bylaws* of the American Dental Association.
- 16
- 17 B. The Board of Commissioners shall submit an annual report of the Commission's activities to
- 18 the House of Delegates of the American Dental Association and interim reports, on request,
- 19 to the Board of Trustees of the American Dental Association.
- 20
- 21 C. The Board of Commissioners shall appoint special committees of the Commission for the
- 22 purpose of performing duties not otherwise assigned by these *Rules*.
- 23
- 24 D. The Board of Commissioners shall appoint consultants to assist in developing accreditation
- 25 standards and conducting accreditation evaluations, including on-site reviews of predoctoral,
- 26 advanced dental educational and allied dental educational programs and to assist with other
- 27 duties of the Commission from time to time as needed.
- 28

29 Section 6. MEETINGS:

- 30
- 31 A. REGULAR MEETINGS: There shall be two (2) regular meetings of the Board of
- 32 Commissioners each year.
- 33
- 34 B. SPECIAL MEETINGS: Special meetings of the Board of Commissioners may be called at
- 35 any time by the Chairman of the Commission. The Chairman shall call such meetings on
- 36 request of a majority of the voting members of the Board provided at least ten (10) days
- 37 notice is given to each member of the Board in advance of the meeting. No business shall be
- 38 considered except that provided in the call unless by unanimous consent of the members of
- 39 the Board present and voting.
- 40 C. LIMITATION OF ATTENDANCE DURING MEETINGS: In keeping with the confidential nature of the
- 41 deliberations regarding the accreditation status of individual educational programs, a portion of the
- 42 meetings of the Commission, and its committees shall be designated as confidential, with attendance
- 43 limited to members, the American Dental Association Trustee Liaison, selected staff of the Commission
- 44 and affiliated or other accreditors as the Commission deems appropriate. During this part of the meeting,
- 45 only confidential accreditation actions may be considered.

46 Section 7. QUORUM: A majority of the voting members of the Board of Commissioners shall constitute

47 a quorum.

48

49 Article III. APPEAL BOARD

50 Section 1. APPEAL BOARD: The appellate body of the Commission shall be the Appeal Board which

51 shall have the authority to hear and decide appeals filed by predoctoral and advanced dental educational

1 and allied dental educational programs from decisions rendered by the Board of Commissioners of the
2 Commission denying or revoking accreditation.

3 Section 2. COMPOSITION: The Appeal Board shall consist of four (4) permanent members. The four
4 (4) permanent members of the Appeal Board shall be selected as follows: one (1) selected by the Board
5 of Trustees of the American Dental Association from the active, life or retired membership of the American
6 Dental Association giving special consideration whenever possible to former members of the Council on
7 Dental Education and Licensure, one (1) member selected by the American Association of Dental Boards
8 from the active membership of that body, one (1) member selected by the American Dental Education
9 Association from the active membership of that body and one (1) consumer member who is neither a
10 dentist nor an allied dental personnel nor teaching in a dental or allied dental educational program and
11 who is selected by the Commission, based on established and publicized criteria. In addition, a
12 representative from either an allied or advanced education discipline would be included on the Appeal
13 Board depending upon the type and character of the appeal. Such special members shall be selected by
14 the appropriate allied or specialty organization. Since there is no national organization for general
15 practice residencies and advanced education programs in general dentistry, representatives of these
16 areas shall be selected by the American Dental Education Association and the Special Care Dentistry
17 Association. One (1) member of the Appeal Board shall be appointed annually by the Chairman of the
18 Commission to serve as the Chairman and shall preside at all meetings of the Appeal Board. If the
19 Chairman is unable to attend any given meeting of the Appeal Board, the other members of the Appeal
20 Board present and voting shall elect by majority vote an acting Chairman for that meeting only. The
21 Director of the Commission shall provide assistance to the Appeal Board.

22 Section 3. TERM OF OFFICE: The term of office of members on the Appeal Board shall be one four (4)
23 year term.

24 Section 4. MEETINGS: The Appeal Board shall meet at the call of the Director of the Commission,
25 provided at least ten (10) days notice is given to each member of the Appeal Board in advance of the
26 meeting. Such meetings shall be called by the Director only when an appeal to the appellate body has
27 been duly filed by a predoctoral or advanced dental educational or allied dental educational program.

28 Section 5. QUORUM: A majority of the voting members of the Appeal Board shall constitute a quorum.

29
30 Section 6. VACANCIES:

- 31
32 A. In the event of a vacancy in the membership of the Appeal Board of the Commission, the
33 Chairman of the Commission shall appoint a member of the same organization, or in the case
34 of a consumer of the general public, possessing the same qualifications as established by
35 these Rules, to fill such vacancy until a successor is selected by the respective representative
36 organization.
37 B. If the term of the vacated position has less than fifty percent (50%) of a full four-year term
38 remaining at the time the successor member is appointed, the successor member shall be
39 eligible for a new, consecutive four-year term. If fifty percent (50%) or more of the vacated
40 term remains to be served at the time of the appointment, the successor member shall not be
41 eligible for another term.
42

43 Article IV. ACCREDITATION PROGRAM

44 Section 1. ACCREDITATION STANDARDS: The Commission, acting through the Board of
45 Commissioners, shall establish and publish specific accreditation standards for the accreditation of
46 predoctoral and advanced dental educational and allied dental educational programs.

47 Section 2. EVALUATION: Predoctoral and advanced dental educational and allied dental educational
48 programs shall be evaluated for accreditation status by the Board of Commissioners on the basis of the

1 information and data provided on survey forms and secured by the members of, and consultants to, the
2 Board of Commissioners during site evaluations.

3 If the Board of Commissioners decides to deny, for the first time, accreditation to a new educational
4 program or to withdraw accreditation from an existing program, the Board of Commissioners shall first
5 notify the educational program of its intent to deny or withdraw accreditation. Such notice, together with
6 announcement of the date of the next meeting of the Board of Commissioners, shall be sent to the
7 educational program by tracked mail or courier service signature required, within fourteen (14) days
8 following the intent to deny or withdraw decision of the Board of Commissioners. Within thirty (30) days
9 after receipt of such notice, the educational program may, in writing, request a hearing before the Board
10 of Commissioners at its next meeting. Within fifteen (15) days after receipt of the request, the Board of
11 Commissioners shall schedule a hearing and notify the educational program of the date, time and place of
12 such hearing. A request for a hearing due to the Board of Commissioner's decision to deny for the first
13 time, accreditation to a new program, shall automatically stay the decision to deny accreditation. In the
14 event the educational program that has been denied initial accreditation for the first time does not make a
15 timely request for a hearing, the Board of Commissioners' findings and proposed decision to deny
16 accreditation shall become final.
17

18 Section 3. HEARING: Upon completion of an evaluation for accreditation status, the Board of
19 Commissioners shall notify the predoctoral, advanced or allied dental educational program (hereinafter
20 called "educational program") of its findings and decision regarding the program's accreditation status.
21 Two types of hearings can be held to review the appropriateness of the decision made by the
22 Commission:
23

24 A. CHALLENGE: This type of hearing is available to a program/institution that wishes to
25 challenge the decision of the Commission to change its accreditation status or to a new
26 program that wishes to challenge the decision of the Commission to deny, for the first time,
27 initial accreditation. When an institution/program believes that the Commission has made an
28 error in judgment, a hearing may be requested. The hearing before the Commission would
29 be held at the next regularly scheduled meeting. Representatives of the institution/program
30 may present arguments that the Commission, based on the information available when the
31 decision was made, made an error in judgment in determining the accreditation status of the
32 program. The educational program need not appear in person or by its representatives at the
33 hearing. Legal counsel may represent the educational program at the hearing. During the
34 hearing, the educational program may offer evidence and argument in writing or orally or both
35 tending to refute or overcome the factual findings of the Board of Commissioners. The
36 Director of the Board of Commissioners must receive any written evidence or argument at
37 least thirty (30) days prior to the hearing. No new information regarding correction of the
38 deficiencies may be presented.
39

40 B. SUPPLEMENT: An institution/program may request a hearing in order to supplement written
41 information, which has already been submitted to the Commission. A representative of the
42 institution would be permitted to appear in person before the Commission to present this
43 additional information.
44

45 When a hearing to provide supplemental information is desired, a written request is to be
46 made to the Director of the Commission thirty (30) days prior to the meeting. The chairman
47 and the Director of the Commission determine the disposition of the request and inform the
48 requestor of the date, hour and amount of time which will be allocated for the hearing.

49 Section 4. APPEAL: In the event the final decision of the Board of Commissioners is a denial or
50 withdrawal of accreditation, the educational program shall be informed of this decision within fourteen (14)
51 days following the Commission meeting. Within fourteen (14) days after receipt of the final decision of the
52 Board of Commissioners, the educational program may appeal the decision of the Board of

Commissioners by filing a written appeal with the Director of the Board of Commissioners. The filing of an appeal shall automatically stay the final decision of the Board of Commissioners. The Appeal Board of the Commission shall convene and hold its hearing within sixty (60) days after the appeal is filed. The educational program filing the appeal may be represented by legal counsel and shall be given the opportunity at such hearing to offer evidence and argument in writing or orally or both tending to refute or overcome the findings and decision of the Board of Commissioners. No new information regarding correction of the deficiencies may be presented with the exception of review of new financial information if all of the following conditions are met: (i) The financial information was unavailable to the institution or program until after the decision subject to appeal was made. (ii) The financial information is significant and bears materially on the financial deficiencies identified by the Commission. The criteria of significance and materiality are determined by the Commission. (iii) The only remaining deficiency cited by the Commission in support of a final adverse action decision is the institution's or program's failure to meet the Commission's standard pertaining to finances. An institution or program may seek the review of new financial information described in this section only once and any determination by the Commission made with respect to that review does not provide a basis for an appeal. The educational program need not appear in person or by its representative at the appellate hearing. The Appeal Board may make the following decisions: to affirm, amend, remand, or reverse the adverse actions of the Commission. A decision to affirm, amend or reverse the adverse action is implemented by the Commission. In a decision to remand the adverse action for further consideration, the Appeal Board will identify specific issues that the Commission must address. The Commission must act in a manner consistent with the Appeal Board's decisions or instructions. The Appeal Board shall advise the appellant educational program of the Appeal Board's decision in writing by tracked mail or courier service signature required. The decision rendered by the Appeal Board shall be final and binding. In the event the educational program does not file a timely appeal of the Board of Commissioners' findings and decision, the Board of Commissioners' decision shall become final.

Section 5. HEARING AND APPEAL COSTS: If a hearing is held before the Board of Commissioners, the costs of the Commission respecting such hearing shall be borne by the Commission. If an appeal is heard by the Appeal Board, the costs of the Commission respecting such appeal shall be shared equally by the Commission and the appellant educational program filing the appeal except in those instances where equal sharing would cause a financial hardship to the appellant. However, each educational program shall bear the cost of its representatives for any such hearing or appeal.

Article V. OFFICERS

Section 1. OFFICERS: The officers of the Commission shall be a Chair, Vice-Chair and a Director and such other officers as the Board of Commissioners may authorize. The Chair and Vice-Chair shall be elected by the members of the Commission. The Chair and Vice-Chair shall be active, life or retired member of the American Dental Association.

Section 2. DUTIES: The duties of the officers are as follows:

- A. CHAIR: The Chair shall preside at all meetings of the Board of Commissioners.
- B. VICE-CHAIR: If the Chair is unable to attend any given meeting of the Board of Commissioners, the Vice-Chair shall preside at the meeting. If the Vice-chair is unable to attend the meeting, the other members of the Board of Commissioners present and voting shall elect by majority vote an acting chair for the purpose of presiding at that meeting only.
- C. DIRECTOR: The Director shall keep the minutes of the meetings of the Board of Commissioners, prepare an agenda for each meeting, see that all notices are duly given in accordance with the provisions of these *Rules* or as required by law, be the custodian of the Commission's records, and in general shall perform all duties incident to the office of Director.

1 Article VI. MISCELLANEOUS

2 The rules contained in the current edition of "The American Institute of Parliamentarians Standard Code of
3 Parliamentary Procedure (AIPSC)" shall govern the deliberations of the Board of Commissioners and
4 Appeal Board in all instances where they are applicable and not in conflict with the *Rules* or the previously
5 established rules and regulations of the Board of Commissioners.
6

7 Article VII. AMENDMENTS

8 These *Rules* may be amended at any meeting of the Board of Commissioners by majority vote of the
9 members of the Board present and voting subject to the subsequent approval of the House of Delegates
10 of the American Dental Association.

11 Revised: 8/15; 8/10, 10/02, 10/97, 10/87, 11/82; Reaffirmed: 8/12

Adopted by the Commission on Dental Accreditation, February 1, 2002. Approved by the ADA House of Delegates, October 2002. Revisions adopted by the Commission on Dental Accreditation, August 2010. Approved by the ADA House of Delegates, October 2010. Revision of Mission Statement adopted by the Commission on Dental Accreditation, August 2012. Approved by the ADA House of Delegates, October 2012. Revisions adopted by the Commission on Dental Accreditation, August 2015. Approved by the ADA House of Delegates, November 2015.

Resolution No. 84 NewReport: N/A Date Submitted: September 2016Submitted By: Fourteenth Trustee DistrictReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: \$125,000 Net Dues Impact: \$1.19Amount One-time \$25,000 Amount On-going \$100,000 FTE 1

ADA Strategic Plan Objective: Membership-Obj. 2: Market share will equal 70%

How does this resolution increase member value: See Background

CREATING A NATIVE AMERICAN PRE-DENTAL CURRICULUM

The following resolution was adopted by the Fourteenth Trustee District and transmitted on September 13, 2016, by Dr. A.J. Smith, chair, Resolutions Committee.

Background: Successfully becoming a dentist is difficult, no matter who you are, but for many Native Americans, the barriers can be insurmountable. Many find that the adjustment to university life feels like going to a foreign country. The opportunity to navigate financial aid and compete for a position in a graduate professional program is daunting even for the most talented Native American student.

Many universities have partnered with organized dentistry to nurture potential dental students with pre-dental societies and mentoring programs. Unfortunately, many are poorly equipped to provide the special support Native American students may require to thrive and be successful. The goal of this program would be to provide materials and methods to pre-dental faculty and advisors, supporting programs that already exist and encouraging new efforts.

This resolution allows the ADA to seek collaboration with educators and Native American leaders to develop a pre-dental curriculum to supplement the academic requirements to enter dental school. The ADA has already endorsed a pipeline program, to promote the dental profession to Native American students. This project takes a next logical step to improve both the quantity and quality of Native American students on the supply side of the pipeline. It shows our profession's commitment to diversify and better represent the variety of patients and populations we treat.

Federal funding may be available for efforts like this, but accessing these funds requires the leadership and commitment to collaborate that the ADA can provide. The relationships we build will give credibility when we encourage Native American leaders to make choices about the most effective ways to address the serious dental needs their people have.

Resolution

84. Resolved, that the ADA seek collaboration with dental educators, representatives of the Society of American Indian Dentists (SAID), and Native American leaders to create a taskforce to develop appropriate materials and methods to allow Native American pre-dental students to successfully prepare and gain entry into dental school, and be it further

Resolved, that the taskforce seek funding for the project from the Health Resources and Services Administration (HRSA) and other federal sources, as well as private and charitable foundations and corporate sponsors, and be it further

1 **Resolved**, that once completed, the Council on Dental Education and Licensure develop a plan to
2 distribute the materials, train pre-dental advisors and mentors in utilizing it and encourage its adoption
3 by pre-dental educational institutions, and be it further

4 **Resolved**, that a report be prepared on the progress of the project for the House of Delegates in
5 2017 and each subsequent year until the project is completed.

6 **BOARD COMMENT:** The Board appreciates the 14th District's interest in increasing the enrollment of Native
7 American students in our dental schools, but reminds the House that in 2012, the ADA sunset the Career
8 Guidance and Diversity Activities Committee, including the staff who supported this endeavor. At that time,
9 the Council on Dental Education and Licensure and the Board agreed that career guidance activities for
10 predental students did not directly support the ADA strategic plan or ADA's mission and that career guidance
11 activities were better supported at the state and local levels. Further, other national organizations such as the
12 American Dental Education Association and the National Association of Health Profession Advisors had, and
13 still have, extensive career guidance programming to support career exploration for diverse student
14 populations. New accreditation standards implemented in 2013 require dental schools to document that they
15 have programs in place to enroll a diverse student body. The Board is also aware of several ongoing national
16 pipeline projects targeting the Native American population. Since 2012, the Association has made a renewed
17 commitment to work with predental and dental students and dental schools as a key strategy to meeting
18 membership objectives. Significant new work is underway and is described in Board Report 6 to the House of
19 Delegates: Dental School Strategy (Worksheet:6006).

20 Collaborating with dental educators, representatives of the Society of American Indian Dentists (SAID), and
21 Native American leaders, establishing a task force, seeking funding and developing and maintaining
22 curriculum materials will require funding for one new full-time staff member whose skill set includes grant
23 writing, career guidance and curriculum development at an annual cost of \$100,000 (salary and benefits) as
24 well as for a 9 member task force to meet twice in 2017 at an approximate cost of \$25,000. Given the
25 resources and organizations already established to increase diversity in our dental schools, coupled with the
26 ADA's renewed commitment to offer resources to predental students, the Board does not believe it is
27 necessary to allocate specific funding at this time for this activity.

28 **BOARD RECOMMENDATION: Vote No.**

29 **BOARD VOTE: UNANIMOUS.**

Resolution No. 86 NewReport: N/A Date Submitted: September 2016Submitted By: Board of TrusteesReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: \$173,000 Net Dues Impact: \$1.645 First Year OnlyAmount One-time Amount On-going \$173,000 FTE 1

ADA Strategic Plan Objective: Membership-Obj. 1: Leaders and Advocates in Oral Health

How does this resolution increase member value: See Background

**1 RESPONSE TO RESOLUTION 69H-2014—PROPOSAL TO CONVENE THREE EXPERT PANELS TO
2 ADDRESS OPTIMIZING DENTAL HEALTH PRIOR TO SURGICAL/MEDICAL PROCEDURES AND
3 TREATMENT**

4 The Council on Scientific Affairs submitted a resolution to perform the work, but it was ruled out of order
5 for parliamentary reasons. This resolution is designed to correct those deficiencies and allow the
6 proposed work to move forward. For clarity the Board restates below the exact background statement
7 originally provided by the council.

8 **Background:** In 2014, the ADA House of Delegates adopted Resolution 69H, Optimizing Dental Health
9 Prior to and Concurrent With Surgical/Medical Procedures and Treatment, which asked that: (1) the ADA,
10 through appropriate agencies, investigate the fiscal implication of the development of a policy statement
11 and evidence-based guidelines for physicians and surgeons to eliminate the impact of untreated dental
12 disease prior to and concurrent with complex medical or surgical procedures; and that (2) the same
13 agencies investigate other approaches to address this issue that may accomplish the intent at lower cost.

14 The importance of good oral health prior to the performance of major surgical or medical procedures
15 cannot be ignored. In fact, in 2000, the Institute of Medicine (IOM) investigated the importance of this
16 concept to promote change in the Health Care Finance Administration policy.¹ The IOM Committee found
17 that evidence was lacking for determining the importance of obtaining proper dental care prior to surgery
18 for major medical conditions, such as cardiovascular disease, cancer or organ transplantation. Despite
19 the lack of strong evidence, the IOM report emphasized the importance of maintaining optimal dental
20 health prior to these medical and surgical procedures as an important opportunity to enhance patient
21 health, inter-professional practice, and team-based care.

22 The Council on Scientific Affairs (CSA) was tasked to work with the Council on Access, Prevention, and
23 Interprofessional Relations (CAPIR) to address the scope, feasibility, and fiscal impact of initiatives aimed
24 at reducing the impact on health outcomes of untreated oral disease prior to complex medical and
25 surgical procedures.² The CSA asked Science Institute staff to assist in convening an expert working

¹ Field MJ, Lawrence RL, Zwanziger L, eds. Chapter 4. Medically necessary dental services. In: *Extending Medicare Coverage for Preventive and Other Services*. Washington, DC: The National Academy Press; 2000.

² Chrvla CAS, Sharfstein S, eds; Committee on Serious and Complex Medical Conditions, Institute of Medicine. *Definition of Serious and Complex Medical Conditions*. Washington, DC: The National Academy Press; 1999. The Committee describes a serious and complex condition as one that is persistent, substantially disabling or life threatening, and that requires treatments and interventions across a broad scope of medical, social, and mental health services. The committee contends that patients with

group to deliberate patient populations that could benefit most from oral evaluations and interventions prior to undergoing major surgical and medical procedures.

Methods

The expert working group was convened, consisting of the following ADA member volunteers: Elliot Abt, DDS; Scott DeRossi, DMD; Mark Koday, DDS; Lauren Patton, DDS; Thomas Sollecito, DMD; and Nathan Triester, DMD, DMSc. Prior to the meeting, ADA staff and the working group chair developed an outline highlighting the charge from the House and identifying medical and surgical conditions that might be influenced by a pre-procedural oral evaluation/intervention.

Using this preliminary outline, a broad literature search was performed to identify studies, guidelines and expert clinical opinion pieces highlighting the importance of dental evaluation/treatment prior to medical or surgical therapies resulting in improved patient outcomes. Staff from the ADA Center for Evidence-Based Dentistry (EBD) completed a search of the research literature for all articles from 2005 until the present, limited to dental management of patients undergoing cardiac surgery, cancer therapy and organ transplantation.

The literature search and screening process for relevance, yielded under 100 results for all of the three groups combined. Some key documents were used to help determine patient populations that would most likely benefit from dental evaluation/intervention prior to major medical or surgical procedures.

Results

After conducting the literature search, EBD Center staff found some literature on the three topic areas (cardiac surgery, cancer therapy, organ transplantation), and noted that most of the published information was in the form of case reports, case series, and narrative reviews. The expert working group deliberated topics that would have the greatest impact and agreed to retain the topics from the IOM report¹ as the main focus, highlighting that these are still the most relevant medical conditions that might benefit from dental intervention. To help distinguish this new initiative from the IOM report, the working group decided to further classify which patients in these populations were most at risk from a medical-outcomes approach, rather than a health insurance policy standpoint.

Based on the literature search, the working group first identified diseases and conditions that would most likely benefit from dental evaluation/intervention prior to a major medical or surgical procedure. Next, the working group identified specific oral diseases and dental interventions that could improve health outcomes for patients undergoing major medical/surgical procedures. Importantly, the working group focused on acute oral disorders that would prevent or complicate medical/surgical therapy and identified those as the issues of greatest concern.

The working group recommended that initial efforts should focus on diseases and conditions that would most likely benefit from dental evaluation or intervention “prior” to a major medical or surgical procedure, rather than “concurrent” with such procedures as specified in Resolution 69H-2014. Specific patient populations requiring major medical/surgical procedures were identified as:

Cardiovascular Disease: defined as patients who are scheduled for (1) cardiac valve repair/replacement or (2) left ventricular assist device (LVAD) placement as a bridge to transplantation.

Cancer: defined as patients with head and neck cancers, hematologic malignancies and solid tumors undergoing myeloablative chemotherapy, high-dose radiation therapy to the head and neck region or immunotherapy. These patients could be further categorized as those scheduled to receive intravenous anti-resorptive therapy as part of their treatment.

serious and complex conditions are those with the greatest need for the specialized services of a multidisciplinary group of professionals whose services can be coordinated through a broad care management approach.

1 Solid Organ Transplant: defined as patients with an end-stage medical condition requiring solid organ
2 transplantation.

3 Prosthetic Joint Replacement: defined as patients who are contemplating an orthopedic joint
4 replacement.

5 The expert working group recommended that the CSA address any or all of the identified, high-impact
6 patient populations (based upon resources). The working group determined that priority focus should be
7 directed to patients with cardiovascular disease, cancer, and solid organ transplants.

8 In an attempt to prioritize and distribute resources accordingly, the working group felt that information
9 directed at patients with prosthetic joint implants has been previously discussed and developed via an
10 ADA evidence-based clinical practice guideline on the management of these type of patients³
11 (subsequent efforts for dissemination of that document were successfully implemented as mandated by
12 Resolution 68H-2014). Accordingly, the working group concluded that no additional work on this subject
13 or patient group is warranted at this time.

14 At its February 2016 meeting, the Council approved the expert working group's proposal to conduct a
15 series of reviews that provide guidance regarding the importance of dental evaluation/treatment prior to
16 major medical or surgical therapies, with discussion of the type and extent of dental evaluation and
17 intervention that might be indicated. Ultimately, these papers would inform ADA guidance to dentists on
18 this issue, as well as provide a vehicle through which the ADA can advocate for the important need to
19 foster interprofessional collaboration and team-based care in improving health outcomes.

20 **Conclusion**

21 While more research is needed on the implications of dental disease and dental interventions to guide
22 clinicians in caring for patients with serious health problems, the Council endorsed a proposal (developed
23 by the CSA expert working group) to review and compile available literature for the development of
24 evidence-based resources to assist clinicians with obtaining a dental examination and consultation prior
25 to initiation of complex surgical and medical treatments, particularly for patients with serious and
26 potentially fatal systemic disease, including but not limited to:

- 27 • Cardiac patients who are scheduled for cardiac valve repair/replacement or LVAD
28 placement as a bridge to transplantation;
- 29 • Cancer patients, prior to head and neck radiation and chemotherapy; and
- 30 • Organ transplant patients prior to surgery.

31 To implement Resolution 69H-2014, the Council approved the expert working group's proposal to perform
32 rapid reviews of the available scientific evidence, including the following steps:

- 33 1) Convening a panel of six experts for each of the three priority conditions that would most likely
34 benefit from dental evaluation/intervention prior to major medical or surgical procedures.
35
- 36 2) Identifying medical and dental considerations that need to be addressed with discussion of the
37 type and extent of dental evaluation and intervention that might be indicated;

³ Sollecito TP, Abt E, Lockhart PB, Truelove E, Paumier TM, Tracy SL, Tampi M, Beltrán-Aguilar ED, Frantsve-Hawley J. 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. *J Am Dent Assoc.* 2015 Jan;146(1):11-16.e8.

3) Assessing the dental and medical literature for each of these conditions. This includes defining the workflow and timeline, implementing the search strategy, and collating and reviewing the relevant literature.

4) Reaching consensus and providing recommendations for educating dentists, physicians, and surgeons about the importance of dental evaluation/treatment prior to major medical or surgical therapies, including the type and extent of dental evaluation and intervention that is warranted.

Fiscal Implication

The rapid-review process for each topic would require two, 1-day, in-person meetings of expert panel members and EBD Center staff to compile information and prepare a report for review and approval by the CSA, in collaboration with CAPIR.

In year 1, expert panels would be convened to complete rapid review #1 (cardiovascular disease) and begin rapid review #2 (cancer). In year 2, work on rapid review #2 (cancer) would be completed along with rapid review #3 (solid organ transplant). Due to resource and logistical constraints, the Council recommends that these rapid reviews be completed in sequence rather than simultaneously.

The costs of convening two expert panel meetings is estimated to be \$18,000 for each topic area. The CSA recognizes that the EBD Center currently lacks the capacity to fully implement the proposed project plan. The CSA deems that, to do this work, a new hire will be required. The total financial impact in each of the next two years would be \$173,000 (\$346,000 total).

The following resolution is presented for House consideration, with a recommendation to vote yes.

Resolution

86. Resolved, that the Council on Scientific Affairs work with other appropriate ADA agencies and external stakeholders to develop evidence-based resources to optimize oral health prior to the performance of complex medical and surgical procedures.

BOARD RECOMMENDATION: Vote Yes.

BOARD VOTE: UNANIMOUS.

Resolution No. None N/AReport: Council on Scientific Affairs Report 1 Date Submitted: September 2016Submitted By: Council on Scientific AffairsReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: _____Amount One-time _____ Amount On-going _____ FTE 0

ADA Strategic Plan Objective: Membership-Obj. 1: Leaders and Advocates in Oral Health

How does this resolution increase member value: See Background

1 **RESPONSE TO RESOLUTION 67H-2014—EVALUATION OF THE SAFETY OF INTRAORAL** 2 **TATTOOS**

3 **Background:** In 2014, the House of Delegates adopted Resolution 67H-2014, which directed CSA to
4 “investigate the safety of intraoral tattoos.” The Council on Scientific Affairs (CSA) was designated as lead
5 agency on this resolution, with support from CAPIR and the Council on Communications.
6

7 Resolution 67H-2014 requested a report to the 2015 House of Delegates (HOD), and an initial status
8 update was provided in CSA’s annual report to the 2015 HOD. From fall 2015 to spring 2016, the Council
9 developed the attached report on safety considerations pertaining to intraoral tattoos (Appendix 1), which
10 was approved by CSA as the Council’s primary response to the assignment in Resolution 67H-2014.
11

12 **Evaluation of the Safety of Intraoral Tattooing:** The Council report includes a comprehensive search of
13 the PubMed database, with specified inclusion/exclusion criteria, and an evaluation of study findings from
14 dental and dermatological journals. The Council anticipated that it would not find any controlled clinical
15 trials on intraoral tattooing, so the inclusion criteria for CSA’s report were expanded to include case
16 reports, magazine articles and even anecdotal reports presented online.
17

18 As part of CSA’s investigation of evidence on intraoral tattoos, the report includes an evaluation of the
19 quality of the evidence on intraoral tattooing, using the [Grading of Recommendations, Assessment,](#)
20 [Development and Evaluation](#) (GRADE) methodology. This GRADE evaluation is included in Table 2
21 (Appendix 2) within the attached report, and it found that the evidence in this topic area was of very low
22 quality, with little support to justify any strong recommendations to be presented as Association policy at
23 this time.

24 **Considerations Regarding Educational Program Expansion:** Resolution 67H-2014 also requested
25 that the ADA “expand its educational program and prepare material on the dangers of oral piercing and
26 intraoral tattoos that target younger children, young adults, adolescents and their parents.”

27 The CSA Science Information Subcommittee conducted a detailed evaluation of the recommendation for
28 ADA educational program expansion, as noted in Resolution 67H-2014. The attached report developed in
29 response to Resolution 67H-2014 documents a rather limited evidence base on the safety and the
30 undesirable effects associated with intraoral tattooing. As of July 2016, there are no well-designed
31 observational studies in the published literature addressing adverse effects pertaining to the practice.

1 Based on the limited evidence available, and no significant safety concerns to date, the Council
2 recommended against pursuing any further study on intraoral tattooing at this time, and that other, more
3 pressing issues be addressed as matters of higher priority. The Council also recommended against
4 placing any undue emphasis on intraoral tattooing in the ADA's educational program to avoid any
5 improper messaging or drawing unnecessary attention to the practice, which has only incidental reports of
6 pain, infection or other adverse effects, most of which are associated with cosmetic tattooing of the lips
7 (i.e., semi-permanent makeup).

8 The Council recognizes that tattooing of the oral mucosa can introduce potential risks of exposure to
9 bloodborne pathogens or other potentially infectious materials. In addition, proper sterilization of the
10 devices used for intraoral tattooing may not be adequately addressed in non-sterile settings (e.g., tattoo
11 parlors and/or body art establishments). As of July 2016, the Council confirmed that there were no known
12 reports of significant injury or bloodborne pathogen transmission related specifically to the practice of
13 intraoral tattooing.

14 Resolutions

15 This report is informational and no resolutions are presented.

16 **BOARD RECOMMENDATION: Vote Yes to Transmit.**

17 **BOARD VOTE: UNANIMOUS (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO**
18 **BOARD DISCUSSION)**

APPENDIX 1

REVIEW OF THE SAFETY OF INTRAORAL TATTOOS: A REPORT OF THE AMERICAN DENTAL ASSOCIATION COUNCIL ON SCIENTIFIC AFFAIRS (RESPONSE TO RESOLUTION 67H-2014)

EXECUTIVE SUMMARY

Background: This report addresses Resolution 67H-2014, which requested a review of the safety of intraoral tattoos, by summarizing evidence from peer-reviewed articles and non-peer-reviewed resources.

Methods: Review of the literature.

Results: This review identified 35 articles and four additional sources (e.g., one online book, two magazine/newspaper articles, and one letter to the editor) that address inner-lip, intraoral or perioral tattooing procedures, including reported adverse reactions or potential health complications associated with such tattoos. Seventeen observational studies were identified with limited reports of transient complications (e.g., pain, tenderness, bleeding) that are potentially attributable to intraoral or gingival tattoos. The search did not identify any articles with significant long-term adverse events or prolonged health complications secondary to intraoral tattooing. The majority of studies identified in this search (21 references) were published in dermatology journals, and address short-term histologic reactions (e.g., swelling) or other localized complications associated with cosmetic tattooing (micropigmentation) of the lips.

Conclusion: The available literature on adverse events associated with intraoral tattoos is extremely limited. Although adverse events from traditional decorative skin tattoos are considered relatively uncommon, there are no tattoo-ink products or procedures that have been properly evaluated to confirm their safety for use or application within the oral cavity.

INTRODUCTION

At ADA 2014-America's Dental Meeting, the House of Delegates adopted Resolution 67H-2014, which reads as follows:

Resolved, that the appropriate agency investigate the safety of intraoral tattoos, and be it further

Resolved, that the ADA expand its educational program and prepare material on the dangers of oral piercing and intraoral tattoos, that target younger children, young adults, adolescents and their parents, and be it further

Resolved, that a report on this activity be presented to the 2015 House of Delegates.

This resolution was assigned to the ADA Council on Scientific Affairs (CSA) as lead reporting agency, with support from the Council on Access, Prevention and Interprofessional Relations (CAPIR) and the Council on Communications. The CSA presented an initial status report on intraoral tattooing in its annual report to the 2015 House of Delegates.

Tattooing is an ancient and contemporary practice of bodily decoration or alteration through intradermal deposition of tattoo pigment. Facial tattoos were performed in ancient Egypt¹ and by the indigenous Maori

people of New Zealand.² Facial tattooing was also practiced by Alaskan Aleut peoples and other communities in the Pacific Northwest region.^{3,4}

In modern times, tattooing of the lip, tongue, and other oral sites is an ethnic custom or traditional practice seen primarily in some African communities.⁵⁻⁷ Also in recent years, celebrity sporting of intraoral tattoos (placed on the inner lip, tongue, palate or other oral sites) has drawn media attention in the U.S. and other countries.^{8,9}

METHODS

Search Strategy: A literature search was conducted in December 2015 using the PubMed and Google Scholar databases (1980-December Week 2 2015) and the Quetzal® search engine (<https://www.quetzal-search.info/pages/about.shtml>) to identify articles on intraoral or perioral tattooing. Search terms and phrases for this literature review included: *tattoo* or *tattoos* or *tattooing* or *micropigmentation* or *cosmetic tattoo* or *permanent make-up*, in combination with *lip*, *oral*, *mucosal*, *mucosa*, *inner lip*, *tongue*, *cheek* or *palate*. These search terms were selected to obtain information on reported adverse events or other potential safety concerns pertaining to: permanent, traditional tattoos (decorative interdermal or intramucosal application of tattoo ink by tattoo artists); and permanent and/or semi-permanent cosmetic tattoos of the lip or perioral region (typically provided by cosmetologists).

Literature searches were limited to articles published in English or Spanish. Articles were included if they addressed one or more of the following:

- tattooing of the oral mucosa (usually on the inner side of the lower or upper lip), gingiva, tongue, or the surface area of the lips, hard palate or other oral sites, as well as lip-liner tattoos; and
- any health complications, adverse events or other sequelae associated with intraoral or perioral tattoos (e.g., cosmetic tattoos on the lip).

Exclusion Criteria: Articles addressing the following topics were excluded from the search: traumatic tattoos, oral mucosal wounds or punctured oral mucosa (from injury or laceration); non-permanent tattoos (e.g., henna tattoos); localized pigmented lesions within the oral cavity (e.g., amalgam tattoos or titanium tattoos from implants; note: these pigmented lesions were considered unrelated to traditional decorative or cosmetic tattooing, and therefore beyond the scope of Resolution 67H-2014). Decorative “tooth tattoos” were excluded because they do not involve intradermal or intramucosal deposition of tattoo ink.

Literature Evaluation: The quality of the evidence on the safety of intraoral tattooing was evaluated using the GRADE system.^{10,11} Primary findings from this evaluation are presented in Table 2 (Appendix 2) to this report.

RESULTS

This literature search yielded 35 articles^{5-7,12-43} and one letter to the editor⁴⁴ that addressed tattoos placed in the intraoral or perioral region (e.g., oral mucosa inside the upper or lower lip [typically the lower]; gingiva or tongue; surfaces of the upper or lower lips; palate, cheek, teeth or other oral sites). Searches of grey-literature sources and reference lists from included articles identified two additional studies,^{45,46} one online book³ and two online news articles,^{8,9} which were also considered in this evaluation.

A 2015 letter to the editor of the *British Dental Journal* (BDJ) described inner-lip tattooing as an increasing trend in England, and it mentions infection, swelling, granuloma, formation, and scarring as potential adverse effects.⁴⁴ The BDJ letter references the Skin-Artists website⁴⁷ as its source of information. The same website⁴⁷ indicates that tattoo ink from an inner-lip tattoo can result in gingival recession around the lower anteriors in contact with the tattoo; however, no case reports or research evidence are cited to support this claim.

Of the 35 references identified in this literature search on intraoral tattoos, eight articles^{5,15,24,29,34,38,41,43} and one letter to the editor⁴⁴ were published in dental or oral surgery journals. Only two articles in dental journals^{5,24} present patient reports of adverse reactions or complications related to intraoral tattooing, primarily indications that gingival tattooing resulted in “immediate discomfort” or post-procedural pain. A 2015 study from Colombia⁴³ investigated 11 individuals with intraoral tattoos but reported only minor reactions or irregularities (e.g., observations of slight puffiness and mild tenderness without pain). One case report indicated that a Mauritanian woman reported severe pain that “lasted for several days” after received gingival tattooing with lampblack.²⁴

The majority of the identified articles (21 in all)^{13,14,16,17,19-23,,25-27,31-33,35-37} were published in dermatology journals, and several studies provide information on adverse events or complications associated with perioral tattoos, primarily cosmetic tattoos of the upper or lower lip. Table 1 summarizes potential complications associated with perioral tattoos.

Table 1. Reported and/or Potential Complications Associated with Perioral Tattoos

<ul style="list-style-type: none"> • Swelling, tenderness or crusting^{12,17,18,20,27} • Bacterial infection (e.g., nontuberculous mycobacterial infection)^{18,45} • Pseudolymphomatous reaction (e.g., cutaneous T cell pseudolymphoma)²⁰ • Granulomatous or lichenoid reaction^{22,23,27,28,33} • Infection with viral species (e.g., herpes simplex)¹⁸ 	<ul style="list-style-type: none"> • Papule formation^{25,27,31} • Eruptive keratoacanthoma¹⁶ • Verrucous hyperplasia²¹ • Pain or pruritis (itching)^{10,12,16,24} • Tattoo-ink migration to lymph nodes¹⁵ • Scar sarcoidosis^{25,26}
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The 2015 Colombian study⁴³ also reported that the most common intraoral tattoo color and location was black monochrome letters applied to the lower lip. On day 15 after intraoral tattoo placement, the researchers found no irreversible damage to the oral mucosa; after 60 days, the lip tattoos had reportedly lost color and definition, but no clinically relevant changes to the mucosal tissues were observed.⁴³

Estimated Prevalence of Intraoral Tattoos: This search did not identify any studies with prevalence data on the number of individuals with intraoral tattoos in the U.S. A 2006 national telephone survey estimated the prevalence of tattoos, on any location of the body, to be approximately 23 to 36 percent for U.S. adults under age 30, but none of the respondents indicated that they had an intraoral or lip tattoo.¹³ Additional correspondence with a European researcher of tattoo-associated health effects confirmed that there is little epidemiological data on lip or oral mucosal tattoos.⁵⁰

Despite the scarce epidemiological data on intraoral tattoos, some research and anecdotal reports suggest that permanent makeup (or “micropigmentation”) procedures are becoming increasingly popular among middle-aged and elderly women.⁵¹ Two common types of micropigmentation are the cosmetic lip tattoo and the lip-liner tattoo, which are commonly placed on the upper and lower lips. Micropigmentation has also been reported as a treatment for lip vitiligo.⁵²⁻⁵⁴ Although the medical literature search did not identify any case reports of tattoos placed on the tongue, cheek or palate, such tattoos have been reported in online news articles.⁵⁵

Safety Concerns: Over the past 15 years, some researchers have reported an increase in allergic reactions associated with permanent makeup procedures, including cosmetic tattoos of the upper and lower lip.^{14,33} A 2004 magazine article presented a personal story of one woman’s allergic reaction to lip micropigmentation, including burning, itching, swelling, bleeding, and the reported formation of granulomas and yellowish fluids.⁵⁶ This 2004 case report was later cited by the U.S. Food and Drug Administration in a report that recommended further investigation of the toxicity, phototoxicity and allergenicity of permanent makeup inks.⁵⁷ The case report was also referenced in a 2011 *New York Times* article,⁵⁸ which includes an interview of the woman who sustained the allergic reactions.

Table 2 (Appendix) presents an assessment of the overall quality of evidence on the safety of intraoral or perioral tattooing, according to the GRADE system of evidence classification. The information presented in Table 2 (Appendix 2) comes mostly from case reports published in dermatology journals, and applying the GRADE system for rating the quality of evidence resulted in an evidence classification of “very low quality.” The quality of evidence for intraoral-tattooing adverse events was downgraded primarily due to “very serious imprecision” (e.g., few case reports of adverse events) and “very serious indirectness” (e.g., most case reports address adverse events associated with cosmetic lip tattooing; these permanent

makeup procedures are applied periorally to the upper and lower lips [as either lip liner or for full lip color], rather than intraorally to the oral mucosa, tongue, gingiva or other intraoral surfaces).

Potential Benefit: Several reports and book chapters present information on medical applications of tattooing and various potential health benefits of tattooing procedures,⁵⁹⁻⁶² including camouflaging skin conditions such as vitiligo⁵²⁻⁵⁴ or alopecia¹⁴ and improving the appearance of head and neck free flaps.⁶³ Another recently published study suggested that individuals with more skin tattoos (i.e., tattoo experience) may develop stronger immunological responses to ward off common infections and protect the body from potentially harmful pathogens.⁶⁴

DISCUSSION

Tattooing is the practice of depositing or injecting ink as an indelible marking within skin or mucosal surfaces, usually with a device that uses oscillating needles for intradermal application of pigment. Tattoo machines can reportedly perforate skin or mucosal surfaces at depths of 1-2 millimeters (or greater), and at adjustable speeds ranging from 100 to over 3,000 skin- or mucosal-pricks per minute.⁶⁵

The standard decorative tattooing process produces direct wounding as well as bleeding at the site of tattoo placement.⁶⁶ Similarly, an intraoral tattoo procedure can directly wound or cause bleeding within the oral cavity, which can elevate risk for bacterial or viral infection, particularly if unsterilized needles are used or adequate infection control measures are not appropriately followed (e.g., hand hygiene, disinfection of surfaces and instruments). Although no infection control breaches pertaining to intraoral tattoos have been reported to date, unsafe or unhygienic practices performed in tattoo-parlor settings can elevate potential risks for spread of microorganisms or other potentially infectious material.¹⁴

Overall, this review did not identify peer-reviewed reports documenting significant safety concerns or health complications secondary to decorative or cosmetic tattoos within the oral cavity. Most published articles on this topic focus on adverse reactions from cosmetic tattoos (also known as permanent makeup), which are commonly applied in the perioral region adjacent to the oral cavity (usually the upper or lower lips to improve lip vermilion and appearance). This review did identify 21 dermatologic studies that were included because they appeared in peer-reviewed journals and present information on tattoo-associated infections or reactions in the perioral region, primarily on the surface or the vermilion border of the upper or lower lips.

Like skin tattoos, intraoral tattooing can result in inflammatory reactions or hypersensitivity to the pigments in tattoo ink, which may contain poly-aromatic hydrocarbons⁶⁷⁻⁶⁹ or chemical contaminants.⁷⁰ An important general caveat about tattoo inks and colorants, including those used for oral tattoos, is that they are manufactured for non-medical purposes,³⁸ and have been found to contain a variety of impurities and colorants that have not been tested for use in humans.⁶⁷ An additional consideration is that with intraoral tattoos, there may also be potential for inhalation and ingestion of substances contained in tattooing products, including contaminants, impurities or other auxiliary ingredients.

According to a 2015 review of tattooing safety, post-procedural bacterial skin infections related to tattoos arise in an estimated 1-5% of tattooed individuals.⁶⁷ A 2010 literature review, which was not restricted to those less than 18 years of age, found that adverse reactions with tattoos in the head region were

1 relatively frequent, which the researchers hypothesized to be possibly due to reaction to permanent
2 make-up lip tattooing.³¹

3 As seen with skin tattoos, tattooing within the oral cavity has potential to generate inflammatory reactions,
4 infection, swelling, granuloma formation and scarring.^{26,31} The oral mucosa has significant regenerative
5 capacity, and cell shedding from the oral mucosal surface layer can make intraoral tattoos fade rapidly or
6 be lost entirely within days or weeks.

7 While tattoo-associated bacterial infections of the skin are estimated to occur in less than 5 percent of
8 tattooed individuals,⁶⁷ some reported adverse reactions from cosmetic lip tattoos occurred 3 to 4 years
9 after initial completion of a permanent makeup procedure.^{22,25} Given this, clinicians should be aware of

10
11 adverse events that may occur after cosmetic or decorative tattoos are placed on the lips or within the
12 oral cavity. Dentists could consider monitoring tattooed oral soft tissues for several years after a patient's
13 initial receipt of tattooing, and for several years after laser removal of an inner-lip or intraoral tattoo. In
14 addition, the incidence and onset of adverse reactions from cosmetic tattoos applied to the lips may differ
15 considerably from complications arising from inner-lip or intraoral tattoos, since the lip is commonly
16 exposed to sunlight and ultraviolet radiation exposure, which could induce photosensitivity or
17 photoallergic reactions.^{14,67}

18
19 The oral mucosa has significant lining and protective functions within the oral cavity, and the mucosa's
20 immune system could potentially be compromised through the intentional deposit of tattoo pigment
21 intramucosally. Oral mucosa has a much thinner epithelium than human skin, and a much looser and
22 more vascular underlying connective tissue. The uncertainty of individual safety risks from intraoral tattoo
23 placement is also compounded by a lack of toxicological safety data for tattoo ink pigments, most of
24 which have not been evaluated for intradermal or intramucosal application.⁶⁷

25
26 ***Tattoo Regulation and Licensing:*** In the United States, tattoo pigments have historically lacked
27 regulation at the federal level. As reported in a 2016 Lancet article, the U.S. Food and Drug
28 Administration (FDA) has considered the pigments used in tattoo inks to require premarket approval, but
29 it has not exercised regulatory authority over tattoo inks or the pigments used in them due to their
30 historical usage and the low number of reported adverse events.⁶⁷
31 At present, the FDA has not approved any tattoo pigment for use in the U.S., and the practice of tattooing
32 is largely regulated by U.S. states and local jurisdictions. When safety concerns arise with tattoo pigment
33 products, the FDA has placed safety and educational information pertaining to tattoos on its website.^{71,72}

34
35 In the U.S., tattoo inks are considered to be cosmetics,⁴⁵ which are generally defined as a product placed
36 on human skin, unlike tattoo inks that are injected intradermally or intramucosally. However, there have
37 been a growing number of case reports in the literature and consumer complaints to the FDA regarding
38 tattoo complications,^{67,71} which can be categorized as localized or histologic infection, allergy, scarring
39 and granulomas. Laser removal of tattoos and magnetic resonance imaging (MRI) interference with tattoo
40 ink particles have also been considered potential areas of concern. However, studies have shown that
41 laser treatments to remove intraoral tattoos are relatively effective and complication-free.^{19,35,42} Another
42 study found that MRI procedures on individuals with cosmetic tattoos on the lips and other sites were only
43 associated with an extremely low incidence of minor complications (e.g., burning or slight tingling).⁷⁴

44
45 The FDA added a 2014 Consumer Update addressing how inks in certain tattoo kits can cause localized
46 infection at the site of the tattoo.⁷⁵ In 2011-2012, the Centers for Disease Control and Prevention (CDC)
47 reported that contaminated tattoo ink was associated with 22 cases of non-tuberculous mycobacterial (*M.*
48 *chelonae*) skin infections in 4 U.S. states.⁴⁵ The FDA is reportedly reconsidering its approach to tattoo
49 regulation based on the recent increase in reported adverse events associated with tattoo inks and
50 manufactured tattoo-ink products.⁶⁷ The FDA's National Center for Toxicological Research is also

1 investigating the chemical composition of tattoo inks, their short- and long-term safety, and the effects of
2 natural light or lasers on tattoo pigment.^{14,72} The research on light interactions is aimed at clarifying the
3 safety of tattoo inks that contain synthetic azo pigments, which have been found to become carcinogenic
4 after exposure to light or lasers.^{72,76}

5
6 In 2004, the FDA published a voluntary recall notice for tattoo ink products from one company⁷¹ due to
7 pathogenic bacterial contamination. The 2004 FDA recall notice indicated that “[a]dverse events reported
8 to the FDA include acute reactions such as swelling, cracking, peeling, and blistering; as well as more
9 lasting effects such as scarring, chronic inflammation associated with granulomas, and difficulty eating
10 and talking.”⁷¹ In 2009, the FDA issued a Consumer Update on tattoo ink,⁷² which says the “FDA has not
11 traditionally regulated tattoo inks or the pigments used in them.”

12
13 U.S. states have adopted variable levels of legislation and requirements for tattoo artists and body-art
14 facilities. State laws govern most licensure requirements for tattoo artists, tattoo parlors or body-art

15
16 establishments, as well as standards for routine inspection and requirements for equipment sterilization.⁷³
17 However, enforcement of tattoo legislation varies widely. One U.S. state (Nevada) has no regulations for
18 tattoo or piercing shops, while other U.S. states have established licensing and enforcement provisions,
19 plus annual permit fees, for tattoo and body-piercing facilities.⁷³ Some U.S. states also require licensure
20 of the tattooing parlor or establishment as well.

21
22 Several U.S. states explicitly prohibit the tattooing of minors under age 18, regardless of parental
23 consent, and other U.S. states allow tattooing or piercing procedures for minors with either parental
24 consent or parental presence during the procedure.⁷³ As a wider safety precaution, state and local
25 authorities could consider integrating stronger requirements for the use of standard patient-safety
26 measures in tattoo or piercing establishments (e.g., appropriate infection control procedures.)

27
28 ***Dentists’ Role with Intraoral Tattoos and Piercings:*** Although there is minimal evidence on intraoral
29 tattoo prevalence or safety, the number of individuals with inner-lip, intraoral or cosmetic lip tattoos may
30 be growing. Permanent makeup procedures, also known as cosmetic tattoos, have become increasingly
31 popular in recent years.¹² Regarding decorative intraoral tattoos, one oral medicine and pathology
32 textbook⁷⁷ explains that “intentional tattoos [in the oral cavity] are readily identifiable, often as vulgarities,
33 letters or symbols in the labial or lingual mucosa, and they are often deeply pigmented with a variety of
34 colors.” The same publication also indicates that “[t]attoos have no malignant potential.”⁷⁷

35 In the United States, skin tattoos have become increasingly common over time, with 23 to 36 percent of
36 adults under age 30 reporting the presence of at least one tattoo.¹³ The popularity of tattooing and
37 piercing among young adults has been described as a trend toward individual self-expression,
38 uniqueness, rebelliousness or, in some cases, risk-taking behavior.^{78,79} With each individual patient
39 (tattooed or non-tattooed), dentists are encouraged to maintain a professional, non-judgmental approach
40 and open lines of dialogue to establish a framework of trust in the provision of optimal patient care.

41
42 With regard to intraoral tattoos, dentists could advise patients that, at this time, there are currently no
43 safety data with respect to intramucosal injection of tattoo pigment in the oral soft tissues⁶⁷ but that there
44 have been case reports in dermatology journals (summarized in Table 2; see Appendix) of cosmetic-lip
45 tattoos placed in the perioral region, which have been associated with inflammation, hypersensitivity,
46 granulomatous reactions and other adverse events.

47 Patients who express interest in obtaining any type of tattoo or body piercing should be advised to ask the
48 tattoo artist about the use of new, sterile needles, and whether the tattooing equipment has been
49 adequately sterilized. HCV, HBV or other bloodborne pathogens can be transmitted if tools are not sterile
50 or if the tattoo artist does not follow proper infection-control procedures.⁸⁰⁻⁸²

Individuals who express interest in obtaining an intraoral tattoo should be educated that the color of the lip, oral mucosa, tongue and oral soft tissues is clinically important, and that an intraoral tattoo could potentially “mask” an underlying inflammation in oral mucosal tissue. This masking process could complicate the clinical identification or differentiation of oral pigmented lesions, dysplastic changes or neoplasms on mucosal surfaces.^{8,83-85}

As part of the dentist-patient relationship, dentists should determine what is important to each individual patient, and provide patients with relevant information from the medical literature that can help inform their decision-making with respect to intraoral tattoos. For some individuals, having a lip or oral tattoo may take primacy even when they consider any information provided about potential health complications. Dentists must weigh these considerations when providing any individually tailored educational instruction or messaging, as part of a shared decision-making process.

Expanding the ADA Educational Program on Oral Piercing and Intraoral Tattooing: Resolution 67H-2014 calls for an expansion of the ADA’s educational program (and preparation of materials) on “the dangers of oral piercing and intraoral tattoos that target younger children, young adults, adolescents and their parents.” This request acknowledges there is concern regarding adolescents and young adults obtaining tattoos in the oral cavity, and that tattooing has become increasingly prevalent over time, particularly among celebrities, athletes, musicians, film stars and the general public.

Dentists can serve an influential proactive role by sharing information about potential health complications associated with intraoral tattooing or oral piercing, and address any concerns expressed about patient safety, adequate infection control and risks associated with potential use of unsterilized equipment during tattoo procedures. However, as seen in Table 2 of this report (Appendix 2), the science regarding adverse events associated with intraoral tattooing is insufficient to inform an education campaign as requested in Resolution 67H-2014.

CONCLUSION

The Council concluded that the available literature on adverse events associated with intraoral tattoos is extremely limited. Adverse events or complications associated with tattoos placed within the oral cavity are understudied, and our knowledge of the dangers presented by intraoral or perioral tattooing is limited primarily to case reports of adverse events related to cosmetic lip tattoos. Although adverse events from traditional decorative skin tattoos are considered relatively uncommon, there are no tattoo-ink products or procedures that have been properly evaluated to confirm their safety for use or application within the oral cavity.

At this time, the safety of intraoral tattooing is uncertain and requires further study, specifically related to the toxicological profile of tattoo-ink pigments for intradermal or intramucosal application. The incidence and potential severity of adverse events associated with these practices requires ongoing monitoring and reporting.

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APPENDIX 2

Table 2. Adverse events associated with intraoral or perioral tattooing. Quality assessment of studies using GRADE criteria.


Quality assessment							Estimate of effect/findings	Overall quality of evidence
No. of studies	Study design	Risk of bias (limitations in study design and execution)	Inconsistency (heterogeneity of results)	Indirectness*	Imprecision (random error)	Publication bias		
Inflammatory reactions (e.g., swelling, pain, scabbing, granulomatous reaction) or other transient complications (e.g., bleeding, tenderness, itching)								
17	Observational studies ^{5,7,8,20,24-26,28,32-35,37-39,43,45}	Serious ¹	unknown ²	very serious ³	very serious ⁴	undetected	One 2015 pilot study ⁴³ investigated intraoral (inner lip) tattoos in 11 individuals; only minor adverse events (e.g., pain, tenderness) were reported. Three case reports ^{5,24,40} indicated that gingival tattooing caused bleeding and post-procedural pain, but three other case studies ^{6,38,39} reported no adverse effects associated with intentional tattooing of gingival tissue. Other case reports ^{18,22,23,31,32,36,37} present limited information on sporadic adverse events associated with permanent makeup (micropigmentation) of the lip. These adverse events include: tenderness, swelling, itching, erythema, mild discomfort, transient edema, small papules and ulceration of lip line, one case of nodular erythematous lesions (associated with sarcoidosis), and a granulomatous reaction on vermilion border of the upper lip.	⊕○○○ VERY LOW
Tumors or other suspicious oral mucosal lesions (e.g., basal cell carcinoma, squamous cell carcinoma, keratoacanthoma, tattoo-ink migration to lymph nodes) (assessed with case reports)								
3	Observational studies ^{5,16,21}	serious ¹	unknown ²	very serious ³	very serious ⁴	undetected	Case reports of adverse reactions include: eruptive squamous cell carcinoma of the keratoacanthoma type in a cosmetic lip tattoo ¹⁶ ; presence of tattoo pigment in cervical lymph node during sentinel lymph node biopsy on a patient with oral squamous cell carcinoma ¹⁵ ; and a case of pseudo-epitheliomatous hyperplasia and a keratoacanthoma-like squamous cell carcinoma in a 47-year-old woman, one week after receiving a lip tattoo. ²¹	⊕○○○ VERY LOW
Localized bacterial infection (e.g., cellulitis, tetanus, impetigo, others) in tattooed area within oral cavity or perioral region								
2	Observational studies ^{8,45}	serious ¹	unknown ²	very serious ³	very serious ⁴	undetected	A CDC study ⁴⁵ found that that contaminated tattoo ink was associated with 22 cases of non-tuberculous mycobacterial skin infection. One case study reported secondary bacterial infection, fever, herpes simplex lesions and lip swelling in a 54-year-old South Korean woman within one week after receiving an illegal lip tattoo. ¹⁸	⊕○○○ VERY LOW

1. Case reports of tattoo-associated adverse events are based on uncontrolled observation, providing limited anecdotal evidence and insufficient information on duration or severity of symptoms, ingredients within the tattoo inks (e.g., pigments, solvents, additives) and other variables.
2. The evidence base specific to adverse events from intraoral tattooing consists of individual case reports that do not present statistical data (e.g., measurements of pain, assessment of minor or major infection); accordingly, these studies could not be pooled to assess consistency in study results. For adverse events associated with cosmetic lip (perioral) tattooing, there is unexplained heterogeneity of results, poor reporting of adverse effects or irregularities, and insufficient data for pooling to formally assess heterogeneity.
3. Several case reports present indirect evidence on adverse events related to cosmetic lip tattoos, which are placed in a perioral region (adjacent to the oral cavity).
4. There are no known epidemiologic studies that investigate the incidence or severity of short- or long-term adverse events associated with intraroral tattoos; only case reports of short-term reactions to gingival tattoos or cosmetic lip tattoos were identified in this search. The toxicological risks associated with pigments, diluents and other ingredients used to make tattoo ink also remain unclear.⁶⁷

* Differences in population, comparison, intervention or exposure, and outcome measures (e.g., surrogate outcomes).⁸⁶

APPENDIX 2 (Cont.)

Table 2 (Cont.). Adverse events associated with intraoral or perioral tattooing. Quality assessment of studies using GRADE criteria.

Quality assessment							Estimate of effect/findings	Overall quality of evidence
No. of studies	Study design	Risk of bias (limitations in study design and execution)	Inconsistency (heterogeneity of results)	Indirectness*	Imprecision (random error)	Publication bias		
Allergic disorders (e.g., contact dermatitis, hypersensitivity) (assessed with: self-report by patient/individual, or diagnosis by clinician)								
4	observational studies ^{17,20,22,33}	serious ¹	unknown ²	very serious ³	very serious ⁴	undetected	Single case reports of tuberculoid reaction with 6-month history of papules and pustules on upper and lower lip ¹⁷ ; cutaneous T cell pseudolymphoma at the site of a semi-permanent lip-liner tattoo ²⁰ ; delayed granulomatous reaction to a cosmetic lip tattoo ²² ; and granulomatous dermatitis on lips following a permanent makeup procedure. ³³	 VERY LOW
Viral infection (e.g., HBV, HCV, HIV, verrucae planae)								
0							Note: Cases of tattoo-associated viral infection (e.g., herpes simplex) have been reported for skin tattoos, ⁵⁹ but at present no confirmed case reports of viral infection from intraoral or perioral tattoos have been published in the peer-reviewed literature.	NA

1. Case reports of tattoo-associated adverse events are based on uncontrolled observation, providing limited anecdotal evidence and insufficient information on duration or severity of symptoms, ingredients within the tattoo inks (e.g., pigments, solvents, additives) and other variables.
2. The evidence base specific to adverse events from intraoral tattooing consists of individual case reports that do not present statistical data (e.g., measurements of pain, assessment of minor or major infection); accordingly, these studies could not be pooled to assess consistency in study results. For adverse events associated with cosmetic lip (perioral) tattooing, there is unexplained heterogeneity of results, poor reporting of adverse effects, and insufficient data for pooling to formally assess heterogeneity.
3. Several case reports present indirect evidence on adverse events related to cosmetic lip tattoos, which are placed in a perioral region (adjacent to the oral cavity).
4. There are no known epidemiologic studies that investigate the occurrence of short- or long-term adverse events in individuals with intraroral tattoos; only case reports of short-term reactions to gingival tattoos or cosmetic lip tattoos were identified in this search. The toxicological risks associated with pigments, diluents and other ingredients used to make tattoo ink also remain unclear.⁶⁷

* Differences in population, comparison, intervention or exposure, and outcome measures (e.g., surrogate outcomes).⁸⁶

NA = not applicable

Resolution No. None N/AReport: Board Report 8 Date Submitted: September 2016Submitted By: Board of TrusteesReference Committee: C (Dental Education, Science and Related Matters)Total Net Financial Implication: None Net Dues Impact: Amount One-time Amount On-going FTE 0

ADA Strategic Plan Objective: None

How does this resolution increase member value: See Background

**REPORT 8 OF THE BOARD OF TRUSTEES: ADA LIBRARY AND ARCHIVES ADVISORY BOARD
ANNUAL REPORT**

Background: In November 2013, the ADA House of Delegates approved the ADA Library and Archives Transition Plan, including the establishment of a volunteer board to oversee operations of the ADA Library and Archives. An engaged and functioning advisory board is considered a best practice for library management. The ADA Library and Archives Advisory Board serves in an advisory capacity to the Board of Trustees.

At its September 2016 meeting, the Board of Trustees approved the appended Annual Report of the Library and Archives Advisory Board for transmittal to the 2016 House of Delegates. This report supports the Strategic Plan Membership Goal and Objective 3.1:

- Membership: The ADA will increase member value and engagement.
3.1 Pursue programs that members value and are "Best in class"

Resolutions

This report is informational and no resolutions are presented

BOARD RECOMMENDATION: Vote Yes to Transmit.**BOARD VOTE: UNANIMOUS (BOARD OF TRUSTEES CONSENT CALENDAR ACTION—NO
BOARD DISCUSSION)**

Appendix 1

ADA Library & Archives Advisory Board

Asai, Rickland, D., 2018, Board of Trustees, 11th district
Aminoshariae, Anita, 2017, Ohio, Council on Scientific Affairs
Booth, H., Austin, 2017, New York, Special Librarian
Braun, Thomas, 2017, Pennsylvania, Council on Scientific Affairs
Fisch, Judith M., 2019, Board of Trustees, 1st district
Glickman, Gerald, 2017, Texas, Council on Dental Education and Licensure
Hammer, Christine, L., 2017, Maryland, at-large Member
Holm, Steven, J., 2016, Indiana, Council on Dental Education and Licensure
Mahler, Harvey, J., 2017, Illinois, at-large Member
Nickisch Duggan, Heidi, Director, ADA Library and Archives

Areas of Responsibility

The areas of responsibility for the ADA Library & Archives Advisory Board (LAAB) are as follows:

- Creating and developing the mission and strategic plan of the ADA Library & Archives.
- Ensuring that the ADA Library & Archives remain relevant to the ADA strategic plan.
- Providing input during the annual ADA budgeting process on library funding, priorities and needs.
- Adopting policies and rules regarding library governance, assets and use; developing, approving, and codifying all policies, based on input from the library staff; also delegating procedural work to the library staff.
- Regularly planning and evaluating the library's service program
- Evaluating the library facility to ensure that it continues to meet ADA member and ADA staff needs.
- Launching a marketing plan for the promotion of the ADA Library & Archives to ADA members; ADA component and constituent societies; the local dental and medical communities; and affiliated dental organizations.
- Conducting the business of the library in an open and ethical manner in compliance with all applicable laws and regulations and with respect for the association, staff and public.

Advancing ADA Strategic Goals and Objectives: Agency Programs, Projects, Results and Success Measures

In support of the Strategic Plan, Members First 2020, the following objectives have been pursued with the intent of increasing member value and engagement:

Objective	Initiative/Program	Success Measure	Target	Range	Outcome
Pursue programs that members value and are "Best in class"	Library	Increase the number of user electronic searches	8000	7200-8200	
	Archives	Create electronic database for the Archives	2000 records completed	1500-2000	Achieved
	Archives	Develop criteria for acceptance of artifacts and gifts	June 30	March-September	Achieved
	Archives	Appraise and catalog existing artifacts and gifts	June 30	March-September	Achieved

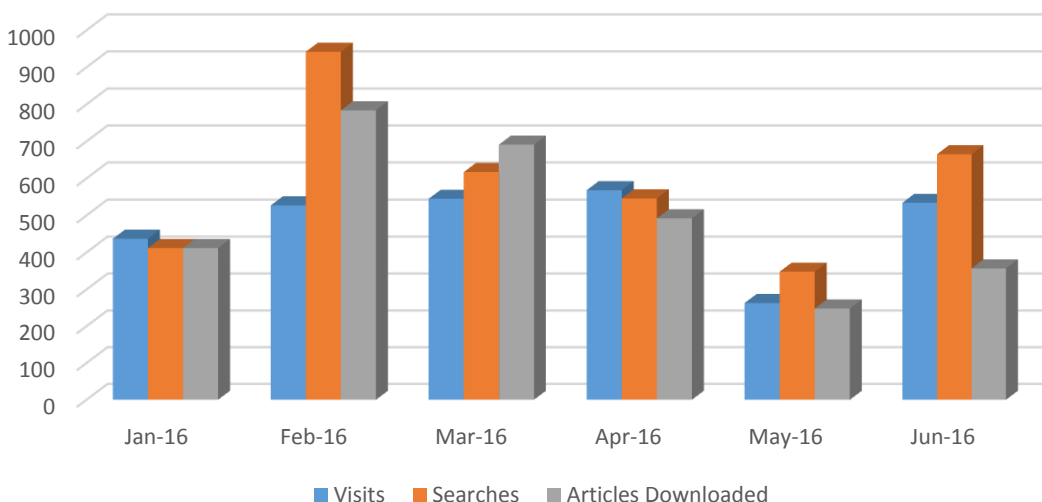
- Statistics collected in the first half of 2016 indicate that members continue to use the Library eResources and other services. Using the first 6 months of 2016 as a baseline, members are projected to complete 7060 online searches and download 5968 articles (this may result in a -7% change from the 7590 searches in 2015 and a 25% change from the 5272 searches completed in 2014).
- Library staff are projected to handle 894 patron requests in 2016. In 2015, 624 requests were processed.

ADA Library & Archives

eResource Usage January - June 2016

Month	Visits	Searches Done	Articles Downloaded
January 2016	437	412	412
February 2016	527	942	784
March 2016	545	617	691
April 2016	568	546	492
May 2016	263	348	248
June 2016	534	665	357
2016 Total to Date	2874	3530	2984
Average per month	479	588	497
Projected 2016 totals	5748	7060	5968

ADA Library & Archives
Jan-June 2016 eResource Usage



- The ADA Library & Archives Staff continue to provide responsive, professional information services that include reference and research services, quick fact finding, verification of bibliographic references, ada.org and internet (web site) assistance, teaching members and staff how to use the new eResources, as well as ADA historical research and dental history research, and the delivery of journal articles, book chapters, etc., to members, staff, and libraries domestic and international.
- Deaccessioning of the Pre-1980 and Historic Book Collection was completed this year. Deaccessioned items included second copies, foreign language copies of pre-1980 books, copies that were damaged or are deteriorating with no opportunity to repair, and any copies that are no longer relevant to the mission and purpose of the ADA Library & Archives. The transfer of 3,116 books chosen by the University of Illinois Library of the Health Sciences was accomplished.
- The Library & Archives Publishing Division Photograph Transfer project: In 2014 the Publishing Division transferred 14 banker's boxes of photographs of two discrete collections (approximately 900 photographs) to the Archives. Collection I was photographs of people (arranged by last name); Collection II was photographs of events sponsored by the ADA (arranged alphabetically by topic/name of event). The photos were processed and accessioned and filed into existing Archives collections. The Biography File finding aid inventory was also updated as names were added to the file. Several hundred photos were added to the Archives Collections.
- The Library & Archives Lucidea CuadraSTAR archival management system project: The archives shelf list was converted to a digital format to be ingested into CuadraSTAR. Ingest was completed in December 2015, and ADA publications and information continue to be ingested into CuadraSTAR.

Emerging Issues and Trends

Libraries continue to go through the process of maximizing resources through the expanded use of digital and electronic means to convey information to their patrons. The ADA Library & Archives continually

reviews these rapid changes in order to remain relevant to ADA Members and the profession. The LAAB is committed to:

- Providing efficient searching using current eResources and making the Library & Archives a 24/7 knowledge center.
- Maintaining and developing a comprehensive collection of information sources for ADA members in various formats.
- Continuous support of evidence-based dentistry.
- Developing new success measures that emphasize impact on policy outcomes, impact on clinical practice, and the research productivity of ADA members and staff.

Policy Review

The Library and Archives Collection Development Policy was revised in 2016 to broaden its application to address the full collection which is primarily, but not exclusively, digital/electronic.

Summary of Resolutions

This report is for informational purposes only.