ADA. Center for Evidence-Based Dentistry™

AMERICAN
DENTAL
ASSOCIATION

EBD WEB SITE AND CRITICAL SUMMARIES

[Version: March 2009]

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1 Website Operations Manual

1.1 Goals of the EBD Website

The goal of the EBD Web site is to facilitate the application of the most current scientific information in the provision of dental care. The Web site will do this by providing one centralized location where dental professionals can access resources to identify currently available evidence related to dental care. The information on the Web site will be provided in a user-friendly format to enable users to quickly find the information they are seeking. The Web site and all of its content will be publicly available to dental professionals, allied health care workers and the general public worldwide.

1.2 EBD Definition

The application of an evidence-based approach to dental care, known as evidence-based dentistry (EBD), is defined by the ADA as follows:

> Evidence-based dentistry (EBD) is 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 expertise and the patient's treatment needs and preferences.

1.3 Systematic Review Database: Search and Selection

1.3.1 *Search strategy*

To locate published systematic reviews that are relevant to healthcare in dental settings, a search filter was developed and tested for sensitivity to locate 477 reviews included in a database developed by the American Dental Association (ADA) prior to the start of this project (ADA Database). The search filter had two important sections. The first section aimed to identify all reports of relevance to dental and oral health care (lines 1-91 in Table 1). Medical Subject Headings (MESH) as well text words were used in this section. Additionally, specialty areas such as “implants”, “decision making”, “bisphosphonates” and other similar terms were included to capture reviews included in the ADA database.

The second section of the search filter was used to locate all evidence-based reviews, systematic reviews or meta-analyses. This second filter was combined with the first one to identify all potentially relevant “reviews”. The search was developed for the OVID search engine and was used to search MEDLINE and PRE-MEDLINE databases between 1965 and June 15, 2007. The filter identified 2,536 potential citations of reviews.

The filter was modified for a search of the Cochrane Database of Systematic Reviews (Second quarter 2007). This search identified 178 potential reviews (Table 2).

The citations with abstracts from both searches were uploaded into an Endnote (version X) database and checked for complete duplicates. The total number of citations transferred to Endnote was 2,714 (henceforth, referred to as the "**NLM database"**. There were a total of 21 **complete** duplicates identified by Endnote.

To check whether the 477 citations in the ADA Database of reviews were also identified in the new database; the citations in the ADA database were imported into the NLM database. The new NLM database included 3,170 citations. Using Endnote's "find duplicate" program, a total of 236 citations were deleted, resulting a database with 2,934 citations. All of the remaining 241 citations in the ADA Database that were not identified by Endnote's "find duplicates" feature were also duplicates that were subsequently located during the visual check for duplicates and a review of the title for relevance.

Table 1: Search Filter for Reviews Relevant to Healthcare in Dental Settings: Medline and Pre-Medline, 1965-June 15 2007

	Search	Number
1	exp Dentistry/	269,081
2	exp Stomatognathic system/	256,542
3	exp Stomatognathic Diseases/	319,198
4	exp Craniofacial Abnormalities/	33,282
5	exp "Biomedical and Dental Materials"/	340,024
6	exp Calcium/	204,397
7	exp Jaw Diseases/	64,505
8	exp Bone Diseases/	298,856
9	exp Dentists/	12,405
10	exp Dentist's Practice Patterns/	886
11	exp Oral Health/	6,382
12	exp Oral Hygiene/	11,881
13	exp Dental Health Surveys/	14,316
14	exp Resins, Synthetic/	47,764
15	exp Methacrylates/	8,727
16	exp Polyethylenes/	8,499
17	exp "Tobacco Use Cessation"/	10,733
18	exp Dental Anxiety/	1,296
19	exp Anesthesia, Dental/	8,911
20	exp Comprehensive Dental Care/	429
21	exp Dental Health Services/	23,345
22	exp Dental Informatics/	20
23	exp Education, Predental/	103

24	exp Education, Dental/	13,716
25	exp Dental Physiology/	22,286
26	exp Dental Records/	2,519
27	exp Economics, Dental/	3,559
28	exp Ethics, Dental/	2,181
29	exp Insurance, Dental/	4,513
30	exp Libraries, Dental/	170
31	exp Licensure, Dental/	1,554
32	exp Myofunctional Therapy/	135
33	exp Odontogenic Tumors/	5,081
34	exp Partnership Practice, Dental/	387
35	exp Practice Management, Dental/	9,094
36	exp Radiography, Dental/	12,827
37	exp Saliva/	23,950
38	exp Tissue Engineering/	5,813
39	"Bone and Bones".mp.	54,435
40	exp Bone Remodeling/	32,036
41	exp Halitosis/	682
42	exp Matrix Metalloproteinases/	15,317
43	exp Bone Development/	30,221
44	(dentis: or dental or stomato: or gnath:).mp.	323,145
45	(prosthodont: or periodont: or pedodont: or endodont: or orthodont:).mp.	95,652
46	((oral or maxillofac: or facial or maxilla: or temporomandib: or mandib:) adj10 (dent: or medicine or radiolog: or patho:)).mp.	32,943
47	(pediatric adj10 denti:).mp.	4,072
48	(amalgam adj10 restor:).mp.	3,018
49	(resin adj10 restor:).mp.	3,427
50	(oral adj10 pharmaco:).mp.	7,119
51	(chemo: adj10 oral adj10 cancer).mp.	741
52	(oral adj10 mucos:).mp.	11,459
53	(dent: adj10 implant:).mp.	17,683
54	(peri-implant: or periimplant:).mp.	2,235
55	lichen planus.mp.	5,269

56	(dysplasia: and oral).mp.	1,741
57	(leukoplak: and oral).mp.	3,384
58	(leucoplak: and oral).mp.	89
59	((HIV or AIDS) adj10 (dent: or oral)).mp.	4,555
60	(wisdom adj3 (tooth or teeth)).mp.	696
61	((Third or third) adj3 mola:).mp.	5,142
62	(dental and (caries or caires)).mp.	33,911
63	(fluorid: adj10 dent:).mp.	10,261
64	((fissure or pit) and seal:).mp. [mp=ti, ot, ab, nm, hw]	2,516
65	(mouth adj5 guard).mp.	56
66	(Decision-making adj3 (dent: or oral)).mp.	105
67	(Dental adj5 patient:).mp.	8,784
68	(occlus: adj10 splint:).mp.	1,344
69	Implant-supported.mp.	3,245
70	(Implant and placement).mp. [mp=ti, ot, ab, nm, hw]	3,777
71	(implant and restoration:).mp. [mp=ti, ot, ab, nm, hw]	3,007
72	(Titanium adj5 dent:).mp.	660
73	(titanium adj5 implant:).mp.	3,319
74	((((Resin-ceramic or Resin) and ceramic) or Bonding) adj5 resin).mp. [mp=ti, ot, ab, nm, hw]	2,108
75	(((Edentulous or Dentulous or Missing) adj3 (tooth or teeth)) or ((Cranio adj3 maxillofacial) or cranio-maxillofacial)).mp. [mp=ti, ot, ab, nm, hw]	2,048
76	(Bleaching or Whitening).mp.	4,572
77	((((Hyperten: adj5 dent) or Epinephrine or Local ajd3 anaesth: or Conscious ajd3 sedation or (Nitrous adj3 oxide:) or Sedation) adj3 anxiety) or (Acupuntcure adj5 dent:)).mp. [mp=ti, ot, ab, nm, hw]	229
78	((head adj3 neck adj3 cancer) or (brush adj5 biops:)).mp.	9,039

79	(Scal: adj5 polish:).mp.	135
80	(maxilla: or mandibul: or (Cleft adj3 lip:) or (cleft adj3 palate) or (Skeletal adj3 orthodon)).mp.	99,706
81	((Alcohol adj10 (dent: or oral:)) or (Tobacco adj10 (dent: or oral:)) or (smoking adj10 (dent: or oral:)) or ((health adj3 promotion) and (dent: or oral:))).mp.	5,660
82	(dental adj5 team).mp.	672
83	((((Orthognathic: or Endodontic) adj5 surgery) or (intraoral or intra-oral) or Root) adj5 canal).mp. [mp=ti, ot, ab, nm, hw]	16,390
84	(temporomandibilar or TMD).mp.	1,708
85	non-cariogenic.mp.	98
86	(Root adj3 (recession or coverage)).mp.	357
87	(Pacifier adj5 caries).mp.	3
88	((Anterior adj5 crown:) or (Posterior adj5 crown:)).mp.	461
89	digital radiography.mp. [mp=ti, ot, ab, nm, hw]	923
90	((Bisphosphonate: and osteo:) or (Burning adj5 mouth) or (Trigeminal adj3 neuralgia)).mp.	8,871
91	Chlorhexidine.mp.	5,250
92	or/1-91	1,498,457
93	((literature adj3 overview:) or (evidence-based adj3 systematic adj3 review) or (systematic adj3 (review: or overview:)) or meta-analysis).mp.	36,310
94	92 and 93	2,536

Table 2. Search Filter for Reviews Relevant to Healthcare in Dental Settings: Cochrane Database of Systematic Reviews, Second Quarter 2007.

1	dentistry.mp. [mp=title, short title, abstract, full text, keywords, caption text]	126

2	(oral adj3 cancer).mp. [mp=title, short title, abstract, full text, keywords, caption text]	26
3	non-cariogenic.mp. [mp=title, short title, abstract, full text, keywords, caption text]	1
4	burning mouth.mp. [mp=title, short title, abstract, full text, keywords, caption text]	2
5	pediatric dentistry.mp. [mp=title, short title, abstract, full text, keywords, caption text]	3
6	halitosis.mp. [mp=title, short title, abstract, full text, keywords, caption text]	12
7	oral mucositis.mp. [mp=title, short title, abstract, full text, keywords, caption text]	7
8	leukoplakia.mp. [mp=title, short title, abstract, full text, keywords, caption text]	6
9	amalgam.mp. [mp=title, short title, abstract, full text, keywords, caption text]	12
10	composite resin.mp. [mp=title, short title, abstract, full text, keywords, caption text]	10
11	whitening.mp. [mp=title, short title, abstract, full text, keywords, caption text]	1
12	dental implants.mp. [mp=title, short title, abstract, full text, keywords, caption text]	17
13	dental patients.mp. [mp=title, short title, abstract, full text, keywords, caption text]	3
14	dental patient.mp. [mp=title, short title, abstract, full text, keywords, caption text]	1
15	fluoride.mp. [mp=title, short title, abstract, full text, keywords, caption text]	35
16	sealants.mp. [mp=title, short title, abstract, full text, keywords, caption text]	14
17	lichen planus.mp. [mp=title, short title, abstract, full text, keywords, caption text]	6
18	leukoplakia.mp. [mp=title, short title, abstract, full text, keywords, caption text]	6
19	missing tooth.mp. [mp=title, short title, abstract, full text, keywords, caption text]	3
20	missing teeth.mp. [mp=title, short title, abstract, full text, keywords, caption text]	20
21	or/1-20	178

1.3.2 Primary Selection Process

The review of the 2,934 citations yielded 1,220 potentially relevant reports (henceforth called **NLM interim**). This review was conducted by AI.

The titles, and sometimes the abstract, in the NLM Database were reviewed for relevance using the following inclusion criteria:

1. The report summarizes findings of a review of evidence on a topic relevant to healthcare in a dental setting.

2. The topic areas of interest to **healthcare in dental settings** covered the following areas:

   i. All dental and oral health care areas and specialties
   ii. Management of oral cancer and of complications related to cancer treatment
   iii. Pain management
   iv. Tobacco and smoking management
   v. Osteoporosis
   vi. Management of medical conditions
   vii. Behavioral modification
   viii. Change models for health practitioners
   ix. Bisphosphonates
   x. Other similar areas

The exclusion criteria were:

1. Protocols of systematic reviews
2. Older version of reviews
3. Duplicates that were not identified by the “Find Duplicate” program in Endnote
4. Report of studies that are not review of evidence (this was determined by reviewing the abstracts if a title review was not conclusive)

The database (NLM Database and NLM Interim) were reviewed by a second reviewer (JFH) using the following protocol:

1. All of the excluded titles from the NLM Database were reviewed to determine whether the exclusion or inclusion criteria were applied appropriately.

2. The same Inclusion and exclusion criteria guided the second reviewer.

The two reviewers followed the principle of “when in doubt include” because the aim of the database is to list all potentially relevant reviews. Hence, if one of the reviewers decided on including a report it was kept or added to the NLM interim database.

The second reviewer added an additional 121 reports to the NLM interim database. The total number of reports in this database expanded to 1,341.

1.3.3 *Final Selection Process*

The NLM interim database was divided into five sections of around 268 citations. Each of the five members of the Critical Review Panel reviewed two sections of the databases. Abstracts of citations in each section were reviewed to determine whether a citation describes a systematic review. If necessary, full text of the article was obtained. A systematic review as defined in this project should describe all of the following criteria:

1. A clinically relevant and focused question
2. A search of at least one major database
3. Inclusion or exclusion criteria
4. Numbers of included or excluded studies
5. Data extraction with presentation of results

Reviewers were instructed to use the principle of "in doubt, include" that was adopted to create a comprehensive database of systematic reviews relevant to healthcare in dental settings.

Any citation that was selected to be included by at least one reviewer was included in the database. This was done to create a comprehensive database of systematic reviews.

1.3.4 *Updating Database*

The database of systematic reviews will be updated quarterly. The same search strategy and database described above will be used to identify newly published systematic. JF and one member of the CRP, rotating quarterly, will review the identified articles and update the database following the same strategy described above. Any citation that is selected to be included by at least one reviewer will be added to the database. The other members of the CRP will be provided the results of the literature search and final list of excluded citations. They will have the opportunity to identify additional systematic reviews that will be added to the database.

1.4 Components of Web Site

1.4.1 *Searchable Database*

As described in section 1.3, a database of systematic reviews will be available on the Web site. The database of systematic reviews will be searchable by multiple strategies, including topic, key word, author, etc. When available, links to PubMed abstracts for each systematic review will be provided. All systematic reviews published in the Journal of the American Dental Association (JADA) will be available through this Web site.

1.4.2 *Topical List of Systematic Reviews*

The EBD Web site will provide a mechanism to identify systematic reviews by using a simple "Browse by Clinical Topics A to Z" feature. This will allow users who are reasonably sure of the name of the subject (i.e. caries & cavities) to go directly to the list of all relevant systematic

reviews. Systematic reviews will be cross-referenced under multiple topics as appropriate. In addition, the user can use this feature to simply browse without a specific topic in mind.

1.4.3 *ADA Critical Summaries*

As described further in section 2, ADA Critical Summaries of systematic reviews will be developed. Each Critical Summary will be linked to the systematic review citation in the database. The critical summaries can be identified through the search function or the topical listing of systematic reviews.

1.4.4 *ADA Clinical Recommendations*

Evidence-based clinical recommendations are developed by the ADA to assist dentists in clinical decision-making. They are developed through comprehensive evaluation of published scientific evidence on a particular topic to provide practical applications of scientific information. The best available scientific evidence is objectively assessed and used to develop clinical recommendations based on the state of the science. Clinical Recommendations are intended to provide guidance and are not a standard of care, requirements or regulations.

Upon completion, Clinical Recommendations will be posted on the EBD Web site.

1.4.5 *Clinical Topics of Interest*

The website will allow users to suggest clinical topics of interest to the dental profession. These suggestions may be one of the sources used when determining topics for future ADA Clinical Recommendations, selecting systematic reviews to summarize, developing the ADA's Research Agenda or other appropriate applications. A voting system will also enable users to rate the different topics suggested by others .

1.4.6 *Resources*

The resources section of the website will offer users links to external sites that offer information on EBD. Organizations, journals, tutorials and other sources of primary and secondary sources of evidence will be provided in this section. A glossary of commonly used terms is part of the Web site to assist dental professionals and public policymakers in developing a common language for discussion of issues pertaining to evidence-based dental care. Some of the definitions are based on information provided in the glossary of the Oxford Centre for Evidence-Based Medicine (http://www.cebm.net/glossary.asp). Links to external glossaries will also be included. Inclusion all external links in the *Resources* section of the Web site does not imply an endorsement of the site or the materials found on it.

1.5 Evaluation

User feedback about the ease of use, relevance, and content has been used to develop the EBD Web site. Continual feedback will be sought to once the EBD Web site is launched to enhance

the EBD Web site and ensure that it is a user-friendly resource. Feedback mechanisms include focus groups, brief online surveys and e-mail surveys. On selected Web pages, including Critical Summaries, a small area will be reserved for questions regarding the appropriateness of the content on the given page.

In addition, automated monitoring of the EBD Web site's usage will be accomplished by using WebTrends to track user navigation paths and other factors. The data collected by WebTrends will allow adjustments to be made to the user experience based on hard data of the EBD Web site's usage.

A comments feature will also be available on the Web site. All comments will be sent to a dedicated e-mail address, EBD@ada.org and will be addressed by an appropriate ADA staff member.

2 Critical Summaries Operations Manual

2.1 Objective of Developing Critical Summaries

The purpose of the critical summaries is to provide dental professionals with concise, user-friendly analyses of published systematic reviews as a resource that may be considered in the clinical decision-making process. All critical summaries will be freely available through the Web site to facilitate the integration of clinical expertise and patient preferences with the best available evidence from systematic research.

Critical summaries will be developed on systematic reviews of direct relevance to dentistry and oral health. To maintain currency for the critical summary development process, only systematic reviews that have been published within the previous 10 years will be eligible for critical summary formulation.

Each published critical summary will be no longer than one page in length in final presentation format (on line or published in the *Journal of the American Dental Association*), corresponding to approximately 2 manuscript pages prior to publication. The critical summaries will include a critical evaluation of the systematic review and a commentary on how the results of the systematic review may be integrated into clinical decision-making. The commentary will also discuss the practical relevance of the systematic review.

Development of a critical summary follows a comprehensive process of critical appraisal, which focuses on assessing the methodological rigor of a published systematic review and the clinical utility and validity of the review methodology, design and evidence analysis. Critical summaries are not structured or designed as systematic reviews, but rather are intended to provide a concise, focused summary of a published systematic review: evaluating the appropriateness of the review's search strategy and execution; the review's appraisal of the available evidence and other considerations. Each critical summary includes ratings of the systematic review findings and their clinical applicability and relevance, and addresses how this information may be applied in patient care. The specific components of a critical summary are described further in section 2.3.

The process for development and review of the critical summaries are described in sections 2.4 and 2.5, respectively. These processes are designed to ensure that all critical summaries are developed in a consistent and systematic process, and reviewed by appropriate individuals to evaluate the quality of each critical summary.

2.2 Critical Review Panel

The ADA Critical Review Panel (CRP) is an advisory committee of EBD experts, clinicians and consultants that was established in 2007 to collaborate in the development of the Web site and the critical summaries. The CRP has an advisory role to maintain and update the database of systematic reviews and to oversee the development and review of the critical summaries. The CRP established the protocol for developing the critical summaries (section 2.6) and the review

processes (section 2.7). The CRP identifies and prioritizes systematic reviews awaiting summary development.

2.3 ADA Evidence Reviewers

A team of dental professionals with appropriate interest and experience will be recruited to become ADA Evidence Reviewers (AER). Under advisement of the CRP, the AER will author critical summaries of systematic reviews.

AER are required to attend a training program that includes a pre-assignment, a 2-day workshop, and periodic Webinars. Mentoring will also be available. This training program will provide the AER will skills needed to search, review, consult appropriate databases and evaluate the relevant literature to critique a published systematic review. The commitment, qualifications and workshop for AER are described further in section 2.8.

The AER members that will author the critical summaries require background, expertise and training in the processes of evidence analysis, critical appraisal and systematic reviews on issues related to dentistry and oral health care. They should also be familiar with search methodology, levels of evidence, and the accepted standards for conducting an evidence-based systematic review. AER members should also be conversant in systematic review methodologies, such as those followed by the Cochrane Collaboration (www.cochrane.org) and the Oxford Centre for Evidence-based Medicine, (www.cebm.net).

2.4 Publication of Critical Summaries

Critical Summaries will be published on the EBD Web site. In addition, some critical summaries will be selected by the *Journal of the American Dental Association* (*JADA*) in a new feature titled Evidence-based Dentistry: Critical Summaries. Writers of the critical summaries will receive authorship credit for those summaries published on the EBD Web site and those selected for publication in *JADA*.

2.5 Sections of Critical Summaries

The presentation consists of seven sections:

a) a title for the critical summary

b) critical summary author, degrees

c) the full citation for the systematic review being critically summarize

d) the Overview

    1. Systematic Review Conclusion
    2. Critical Summary Assessment

3. Evidence Quality Rating

e) a structured abstract for the systematic review (300 words minimum - 400 words maximum), which consists of five components:

1. clinical question
2. review methods
3. main results
4. author's conclusions
5. source of funding

f) the commentary (300 words minimum - 400 words maximum), which consists of four components:

1. importance and context
2. strengths and weaknesses of the systematic review
3. strengths and weaknesses of the evidence
4. implications for dental practice

g) Date of critical summary initial draft

2.5.1 Hotlinks

Hotlinks lead to invited reactions to the critical summary that are intended to assist readers in further consideration of the systematic review and its critical summary. The invited reactions will take the form of short invited commentaries (100 words max) from the author of the systematic review and from one of more organizations with an interest in the review topic.

2.6 Critical Summary Protocol

Critical summaries are prepared by members of the Critical Review Panel or Evidence Reviewers who have participated in special training workshops. An author is expected to complete a critical summary within 4 weeks of its assignment/ selection. Authors are encouraged to consult with colleagues during the preparation of a Critical Summary when necessary to acquire needed background information or perspective. The following descriptions of the components of a Critical Summary are intended to provide guidance for their preparation. The critical summary should fit on one printed page (*at least* 600 words, but *no more than* 800 words).

The writing style for the critical summaries should be concise, easy to understand, and follow recommendations for submitting manuscripts to the Journal of the American Dental Association.[1] These recommendations indicate that the most recent edition of the American Medical Association Manual of Style[2] be consulted. The critical summaries should be written in active voice and declarative sentences for a clear, concise style. The overall tone of these reports should be factual and professional.

2.6.1 Title

The title of a Critical Summary should be informative, but terse. It should indicate the general topic area addressed by the systematic review, and answer that question. If possible, the title should be interesting, or "catchy" in an attempt to attract the reader's interest. It should give the reader a clear direction on the outcome of the review and should not be framed as a question.

2.6.2 Critical Summary Author

The author of the critical summary should list his/her name, degrees, title, and organization.

2.6.3 Full Citation

The systematic review should be cited using the citation style in use in the Journal of The American Dental Association.

2.6.4 Overview

The overview is the information that appears in a pop-up box when a user's cursor passes over the title of a systematic review in the database (1.4.1) The information is a terse summary of the full critical summary, and consists of:

a) *Systematic Review Conclusion*. A statement of the conclusion of the review (one sentence, 150 characters max) This is a highly summarized version of the systematic review authors' conclusions as stated in the structured abstract that follows.

b) *Critical Summary Assessment*. The AER's assessment of the quality of the systematic review and the quality of the underlying evidence with clear implications. This should be different from the SR conclusion and should include your assessment of the review. It can reiterate the conclusion but should reflect in a few words the type of evidence being used to make the above conclusion or the types of studies that resulted in the observation or the bottom line for the clinical implication This should give the reader more information on your assessment rather than re-stating the conclusion. Important to note is that when the author of the systematic review has reported non-significant results, the AER should also report results as being non-significant instead of trying to draw conclusions based on effect size.

c) *Evidence Quality Rating*. As described in section 2.6.8, a three-level quality criteria system will be used to assess evidence quality. The quality of the evidence should be categorized as *Good Evidence*, *Limited Evidence* or *Poor Evidence*.

2.6.5 Structured Abstract

The reviewer is responsible for writing a structured abstract of the systematic review. The abstract should be *at least* 300 words, but *no more than* 400 words, in length, with headings for the 5 subsections (clinical question, review methods, main results, conclusions, source of funding). The

published abstract may used if it meets the length and structure criteria, but in most instances, a new abstract should be prepared.

This section will be titled **Structured Abstract** and will include the following subsections:

a. *Clinical questions*. The clinical question should incorporate the PICO (Population, Intervention, Comparison, Outcome) elements if possible, but need not explicitly identify them. If the clinical question is clearly stated in the review, use that statement.

b. *Review methods*. At a minimum, the number of databases searched (without specifically naming the databases), search dates, principal inclusion criteria, and outcomes assessed should be identified, together with any other specific information critical to interpretation of the review's results.

c. *Main results*. The main results should be presented. The number of included studies and subjects, and either the synthesis of the individual study findings (if reported) or a summary of the textual analysis of the results are necessary components.

d. *Conclusion*. The authors' conclusions can be an expanded version of the highly summarized statement prepared for the box. If multiple conclusions have been made, the most appropriate and most relevant conclusion should be provided for the reader based on your judgment of the importance and context of the topic

e. *Source of funding*. The source(s) of support reported in the manuscript should be listed. If no such support statement appears in the paper, that should be indicated in this subsection. Any conflicts of interest should not be stated here, but rather should be stated under the *Strengths and Weaknesses of the Systematic* Review section (see below).

2.6.6 Commentary

The commentary should normally be *at least* 300 words, but *no more than* 400 words, in length, with headings for the 4 subsections (importance and context; strengths and weaknesses of the systematic review, strengths and weaknesses of the evidence, implications for practice). The commentary does not summarize the findings of the review. Rather, it helps dental practitioners "interpret" the review by putting the question addressed by the review into context within dental practice, by identifying the strengths and weaknesses of both the methods employed and the evidence assembled in the review, and by discussing the implications of the findings for dental practice. Further instructions on the sections of the commentary are provided below.

This section will be titled **Commentary** and will include the following subsections:

a. *Importance and context* This subsection considers why it is important for the question to be answered, what the current "state of practice" or "state of understanding" is around the issue, whether other systematic reviews have already addressed the question, and what, if any, special considerations might be kept in mind as the methods and results of the review are considered.

b. *Strengths and weaknesses of the systematic review.* This subsection comments on search strategy, methods employed in the review, and the completeness of the reporting of the review. The commentary should consider the extent to which the review was conducted and reported using accepted methods and standards such as those outlined in the QUOROM guidelines[3] or the AMSTAR[4] instruments for assessing systematic review quality. Any conflicts of interests should be briefly stated here.

c. *Strengths and weaknesses of the evidence*. This subsection addresses the strength of the evidence included in the review and justifies the ratings used in the overview. The commentary should consider the quality of the evidence, i.e. the merits of the type(s) of studies included and the quality of the included studies with respect to their ability to answer the clinical questions identified in the systematic review. Whether the outcomes evaluated by the included studies are patient-oriented or disease or surrogate measures* should be explicitly stated, together with any associated clinical implication. The commentary should also address the number of studies and the number of subjects included in the review. Possible harms or risks, if any, should be stated. Finally the commentary should address the homogeneity or consistency of the findings across the included studies.

* Patient oriented outcomes are those that matter to patients: morbidity, mortality, symptom improvement, cost reduction, and quality of life. Disease or surrogate outcomes measure intermediate physiologic, or surrogate end points that may or may not reflect improvements in patient outcomes (e.g., blood pressure, pocket depth, gingival recession, demineralization).

d. *Implications for dental practice*. The subsection offers observations regarding what a dental practitioner should take away from the review in terms of consideration of changes in response to the information presented.

Note: When summarizing systematic reviews that are older than one year, authors are requested to use the search strategy presented within the systematic review to identify more recent clinical studies that may impact the conclusions of the review being summarized. Evidence from studies at or above the same level of evidence used as a basis for drawing conclusions in the review should be analyzed by the AER and any studies that are believed to have a significant impact on the conclusion must be presented and referenced in the Implications for Practice Section. E.g. if the SR conclusions are based on cohort studies for a therapy or intervention and there are more recent cohort studies or RCT's, the AER would assess the quality of the study and discuss the impact of these findings on the conclusions of the systematic review

2.6.7 Date of critical summary.

List the year and month the critical summary was written.

2.6.8 Statement of Copyright and disclaimer

A standard statement stating that the Copyright belongs to the ADA will be included in each summary.

“American Dental Association©. All rights reserved.”

A standard disclaimer will be added to each summary

“These summaries are not intended to, and do not, express, imply, or summarize standards of care, but rather provide a concise reference for dentists to aid in understanding and applying evidence from the referenced systematic review in making clinically sound decisions as guided by their clinical judgment and by patient needs.”

2.6.9 *Calculating the Evidence Quality Rating*

A three-level quality criteria system will be used to assess evidence quality. This criteria system is adapted from SORT.[5] The criteria are driven by the quantity and quality of the available evidence, as identified in the review. The following chart identifies rating criteria for reviews of diagnostic methods, treatment and preventive methods, and studies of prognoses.

	Diagnosis	**Treatment/Prevention**	**Prognosis**
Level 1: Good Evidence	Generally high quality studies with similar conclusions *or* a single high quality cohort study. Studies should have consistent reference standard, adequate size, broad spectrum of patients and blinding	Multiple RCTs with good to high study quality and consistent findings across studies, *or* a single high quality RCT, *or* an “all or nothing study”	Prospective cohort studies with good follow-up
Level 2: Limited Evidence	Generally lower-quality studies or inconsistent results across studies	Inconsistency across RCTs or lower strength clinical trials, including cohort studies and case-control studies.	Retrospective cohort studies or prospective cohorts with poor follow-up. Also, case control studies and case series
Level 3: Poor Evidence	Expert opinion, case reports	Expert opinion, case reports	Expert opinion, case reports

2.7 Critical Summary Review Process

Critical summaries of systematic reviews cited in the database will be written by members of the Critical Review Panel (CRP) or by the ADA Evidence Reviewers (AER). The AER will complete a critical summary within four weeks of receiving an assigned systematic review from the CRP. The mentor will review and provide comments within two weeks of receiving this initial draft. The AER will be provided an additional two weeks to revise the initial draft based on mentor comments. Within three weeks of receiving the completed critical summary from the AER, two members of the CRP will each independently check the summary to be sure it is accurate and includes all important findings of the review, clinical implications are well supported by the findings, meets specifications for format, and appears to be factual and unbiased. If the CRP determines that it does not have the expertise to evaluate a systematic review due to the specific nature of its content, two topic experts will be identified and asked to review it for accuracy and bias. The CRP will then still review it for format. The original author of the systematic review will also be asked to review the accuracy of the critical summary. As needed, the CRP will recommend necessary edits or corrections to the critical summary. The revised summary will be sent to a copy editor. Once approved by the Critical Review Panel, the critical summary will be posted on the Web site.

2.8 Invited Commentaries

The American Dental Association will post the final draft of the critical summary on the ADA's EBD website for one month and invite additional commentary by the original author. Commentaries can be no longer than 150 words. Invited commentaries will be part of the one page critical summary.

2.9 Guidelines for editorial review

The authors of the critical summaries are encouraged to follow these guidelines while writing the critical summaries. The same set of guidelines will be used during the editorial review before a summary is accepted for publication in JADA or posted on the EBD website.

1. Use concise, easy-to-understand language. Note: We will follow the most recent edition of the American Medical Association Manual of Style.
2. **Use active voice consistently throughout the summary** for a clear, concise style.
3. The overall tone of these reports should be factual and professional.
4. Information should be presented in a clear and direct manner without room for misinterpretation. For example, the phrase "the trials demonstrated no cause-effect relationship" might be taken to mean either that there was no evidence to support a cause-effect relationship or that there was evidence that there was no cause-effect relationship. If the former meaning is intended, clearer language would be: "the trials did not produce evidence demonstrating [or indicating or suggesting] that there was a cause-effect relationship." If the latter meaning is intended, less ambiguous language would be: "the trials produced evidence demonstrating [or indicating or suggesting] that there was no cause-effect relationship."
5. All opinions in the commentary should be objective and balanced.

6. Use good judgment when making declarative statements and ensure that these are supported by strong evidence.
7. Ensure that all statements of conclusions and implications are supported by information presented in the body of the summary.
8. Structure titles, conclusions and implications as statements of evidence rather than directives or recommendations for treatment. (for example, “On the basis of this systematic review, prescribed fluoride supplements reduces dental decay in primary teeth” is an evidence statement, whereas “Fluoride supplements should be prescribed in children to reduce dental decay” is a directive.)
9. Use of the terms such as “inconclusive evidence,” “weak evidence” or “strong evidence” within the summary should convey the following meanings:
    - inconclusive: there may be a significant body of evidence, but heterogeneity between studies; a definitive conclusion is not possible;
    - weak: inconsistent findings, small effect sizes;
    - strong: consistent high-quality studies; a definitive conclusion can be made.
    - Insufficient: there is no or very little evidence

In addition, the editorial team will ensure that the process as stated in this Operations Manual is followed before accepting any summary for publication.

2.10 ADA Evidence Reviewer Program

2.10.1 Commitment

ADA Evidence Reviewers (AER) must complete the training program (described in section 2.10.3). After completing this program, the AER members must write 10 critical summaries within two years. Writing more than 10 critical summaries and continuing in the program beyond two years is optional, but strongly encouraged.

2.10.2 Qualifications

Candidates to become ADA Evidence Reviewers must have a dental degree, a dental hygiene degree, a PhD or an MPH. Advanced education or experience in clinical research, EBD or a related field is desirable, but not required. Examples of potential candidates include faculty members, adjunct faculty members, PBRN practitioner-investigators, or practicing dentists interested in EBD.

The AER members who will author the critical summaries require background, expertise and training in the processes of evidence analysis, critical appraisal and systematic reviews on issues related to dentistry and oral health care. They should also be familiar with search methodology, levels of evidence, and the accepted standards for conducting an evidence-based systematic review. AER members should also be conversant in systematic review methodologies, such as those followed by the Cochrane Collaboration (www.cochrane.org) and the Oxford Centre for Evidence-based Medicine, (www.cebm.net).

Interested individuals should send a CV to:

American Dental Association
Dr. Krishna Aravamudhan
211 E. Chicago Ave.
Chicago, IL. 60611
aravamudhank@ada.org

All evidence reviewers will receive authorship credit for those critical summaries that are published through the EBD Web site and/or *JADA*.

2.10.3 ADA Evidence Reviewer Training Program

ADA Evidence Reviewer must complete the training program. The program consists of 4 parts: 1) pre-assignment; 2) workshop; 3)mentoring ; and 4) webinars. Evidence reviewers must complete parts 1 and 2 before the begin writing critical summaries. Parts 3 and 4 are intended to provide updated information and ongoing coaching. Descriptions of these sections are provided below.

Part 1: Pre-assignment

Participants will be given a pre-assignment 3 weeks before the workshop. The pre-assignment will include reading 3 systematic reviews, this operations manual, and introductory material on AMSTAR, QUOROM and Moose. Participants will be asked to answer the AMSTAR questions for one of the systematic review and write an 800 word critical summary of that systematic review by following the instructions in this Operations Manual. The pre-assignment must be e-mailed to frantsvej@ada.org approximately 1 week before the workshop. CE credit will be provided for completing the pre-assignment.

Part 2: Workshop

Two-day training workshops will be offered periodically. The workshops will be conducted at the ADA Headquarters building in Chicago, IL or in conjunction with major dental meetings. Participants must cover their own travel expenses.

Instructors for each workshop will be two of the Critical Review Panel members. CE credit will be provided for attending the workshop.

The pre-assignments will be discussed extensively at the workshop. Participants will be given a homework assignment to be completed during the evening of day 1. This assignment will take approximately 2 hours to complete. Participants are strongly encouraged to bring their own laptop computer to conduct this homework assignment.

Part 3: Mentoring

After completing the workshop, AER members will be assigned a mentor. Initially, mentors will be members of the Critical Review Panel. As the number of AER member's increases,

additional mentors will be identified. Mentoring will include discussing and reviewing multiple drafts of the first 5 critical summaries that an AER member writes.

Part 4: Webinar

Periodic Webinars will be scheduled. The purpose of these Webinars is: 1) to provide tutorials on EBD Web site and the Portal; and 2) ongoing coaching. Participants will receive CE for participating in the Webinar. Webinars will be recorded and available on the EBD Web site portal as podcasts.

2.10.4 Advantages

Participation in the ADA Evidence Review program will provide many opportunities for professional development. These include: authorship credit for those critical summaries published on the EBD Web site and JADA; enhanced critical thinking skills; increased knowledge of EBD; mentoring from Critical Review Panel members; access to resources available on EBD Web site portal; and CE credit.

3 References

1. Association JotAD. Manuscript Style.
2. Association AM. American Medical Association Manual of Style: A Guide for Authors and Editors. 9th Edition ed: Williams & Wilkins; 1998.
3. Moher D, Cook DJ, Eastwood S, Olkin I, Rennie D, Stroup DF. Improving the quality of reports of meta-analyses of randomised controlled trials: the QUOROM statement. Quality of Reporting of Meta-analyses. Lancet 1999;354(9193):1896-900.
4. Shea BJ, Grimshaw JM, Wells GA, Boers M, Andersson N, Hamel C, et al. Development of AMSTAR: a measurement tool to assess the methodological quality of systematic reviews. BMC Med Res Methodol 2007;7:10.
5. Ebell MH, Siwek J, Weiss BD, Woolf SH, Susman J, Ewigman B, et al. Strength of recommendation taxonomy (SORT): a patient-centered approach to grading evidence in the medical literature. Am Fam Physician 2004;69(3):548-56.