Welcome

Teresa A. Marshall, PhD, RDN/LDN

Evidence-Based Dentistry

- Knowledge?
- Acceptance?
- Application?

ADEE 2022

Use of Evidence-Based Dentistry (EBD) in delivering dental education

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University of Florida
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Introduction to Evidence-Based Dentistry

Approach to oral healthcare that requires the thoughtful 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 (ADA).

Implementing Evidence into Practice

- The adoption of evidence-based dentistry (EBD) approaches to clinical practice aims to optimize oral health clinical decisions to individual patient care by integrating scientific research evidence with clinician expertise and patient values and preferences.

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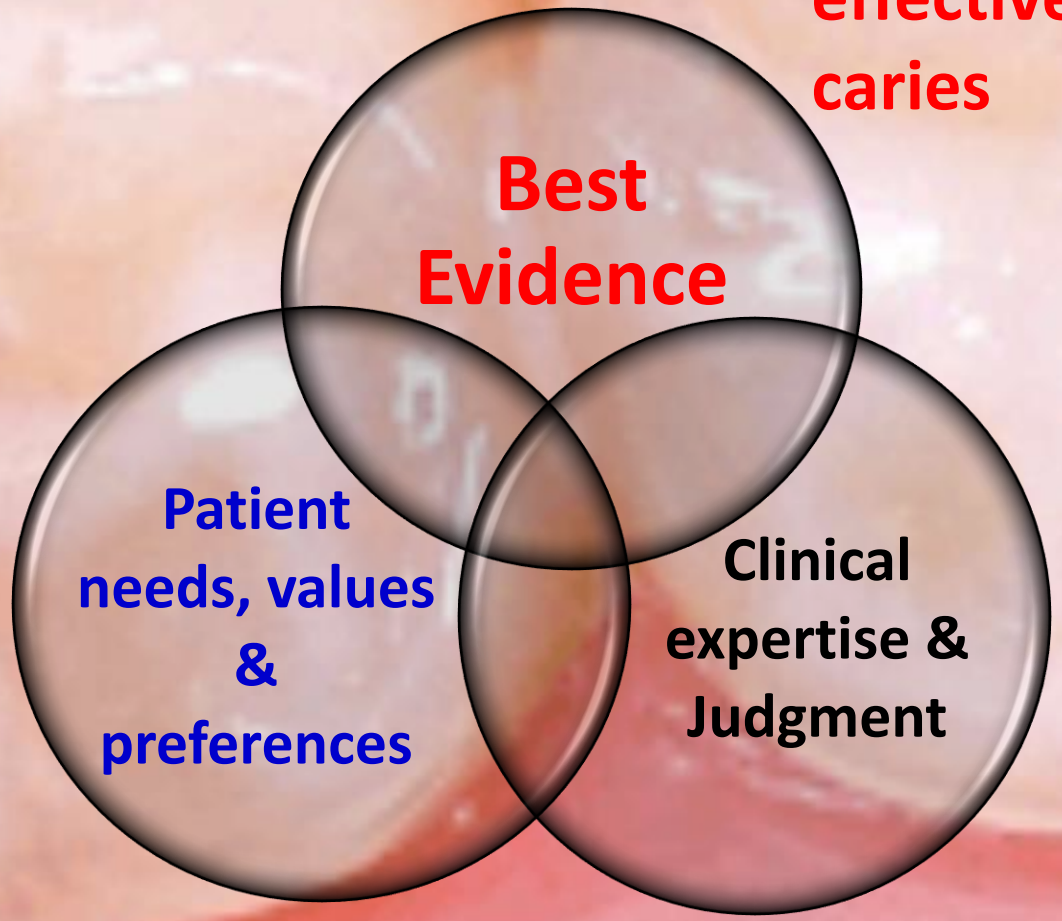
Sealants and EBD

SRs and guidelines: Sealants are effective in preventing dental caries

Prevention of disease is important.
Preventing decay is cost-effective.
Does the patient agree to the plan?



Does my patient benefit from sealants?
Is the patient at risk for caries?
Is the tooth at risk for caries?
Do I have skills to apply sealants?

U.S. CODA Standards

- 2-10: Graduates must be competent in the use of critical thinking and problem-solving, including their use in the **comprehensive care of patients**, scientific inquiry and research methodology.
- 2-22: Graduates must be competent to access, critically appraise, apply, and communicate scientific and lay literature as it relates to **providing evidence-based patient care.**

Integrated National Board Dental Examination (INBDE)

Foundation Knowledge Area Ten (FK10)

- *Focuses on the application of research methodology and analysis, and informatics tools in the* ***prevention, diagnosis, and management of oral disease and the promotion and maintenance of oral health****.*
- **Examples of Relevant Disciplines**: Statistics, Public Health Dentistry, Descriptive and Analytical Epidemiology, Dental and Health Informatics, Evidence-Based Dentistry, Critical Evaluation of the Scientific Literature, Preventive Dentistry, Applied Research, etc.
- **Examples of Relevant Clinical Science areas**: All major disciplines associated with practicing dentistry including Practice Management.

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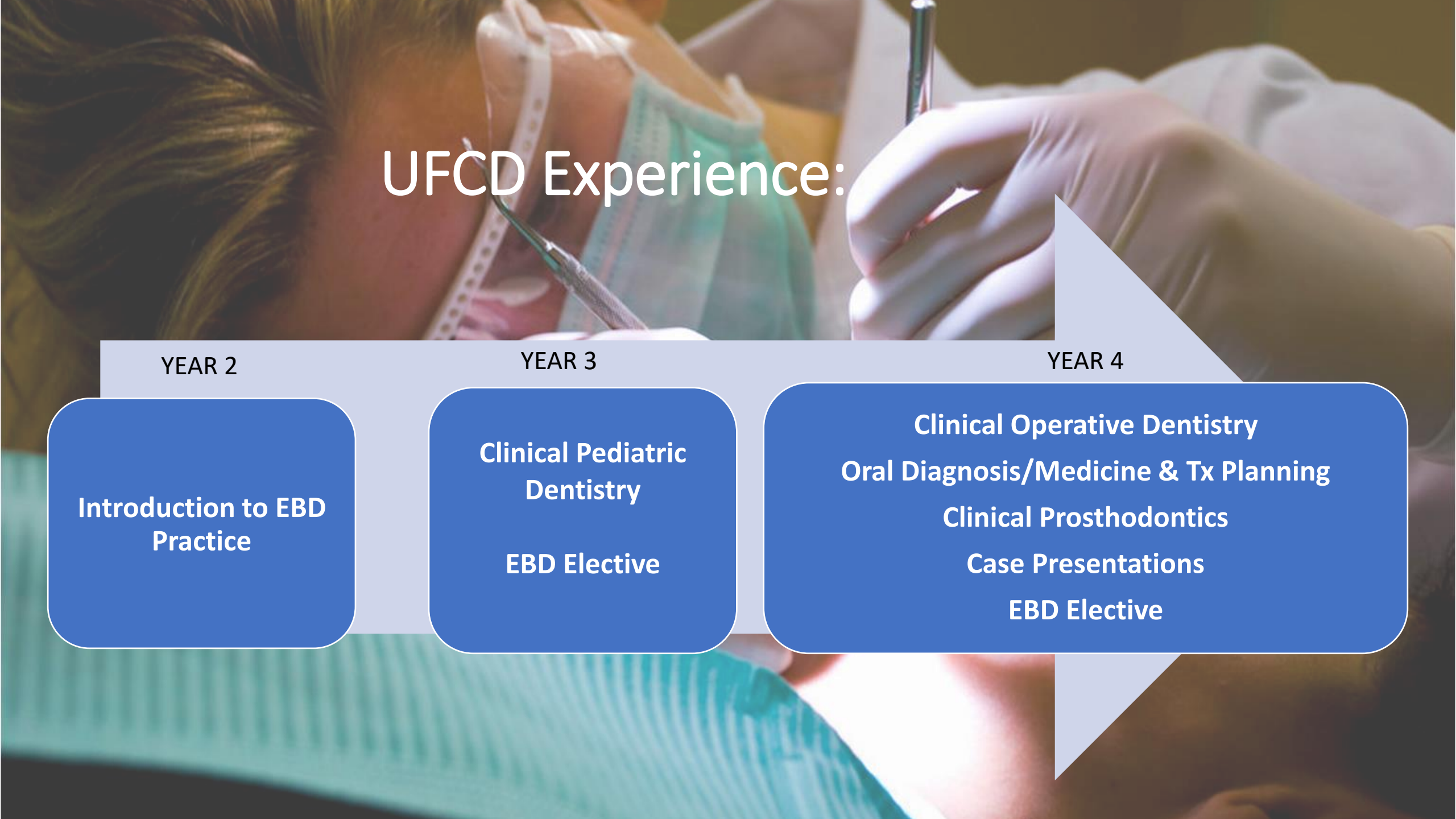


UFCD Experience:

YEAR 2

Introduction to EBD Practice

YEAR 3

Clinical Pediatric Dentistry

EBD Elective

YEAR 4

Clinical Operative Dentistry

Oral Diagnosis/Medicine & Tx Planning

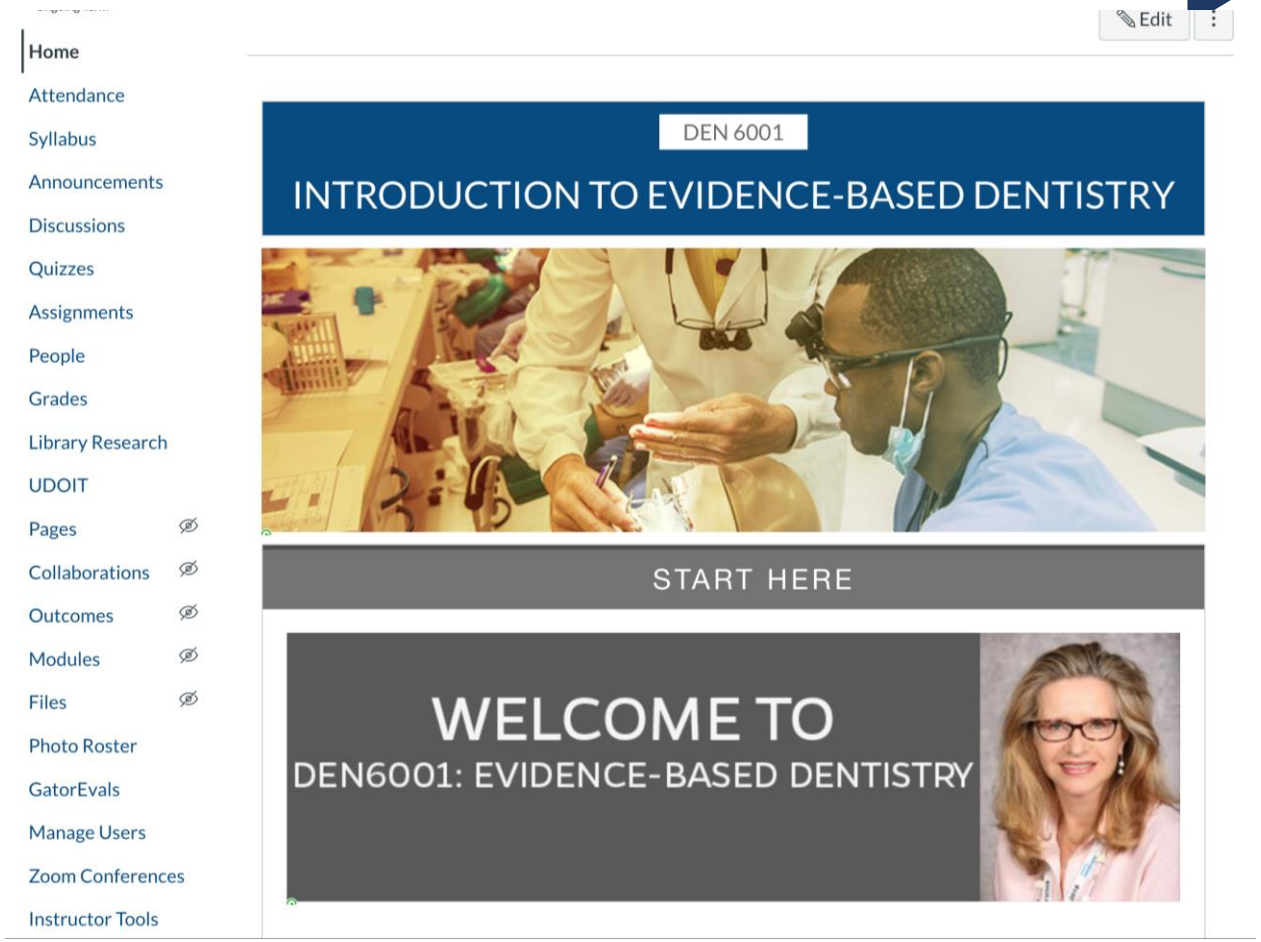
Clinical Prosthodontics

Case Presentations

EBD Elective

UFCD Experience

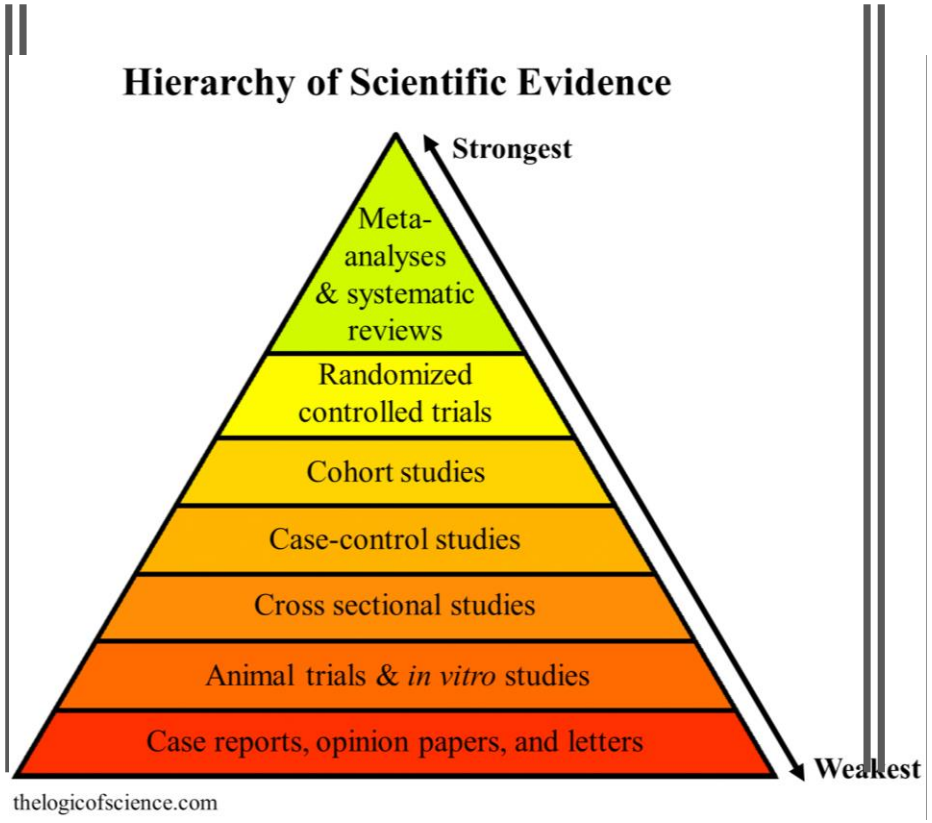
- **Introduction to EBD Practice**
  - 1 credit course – 2nd year
  - Flipped classroom with team-based learning in CANVAS
  - Clinical cases - Team Assignments
  - EBD Final Project for the clinical case
- **Elective EBD Seminars**
- 1 credit course - 3rd and 4th year
- Focus is applications to evidence-based decision making
  - Clinical practice



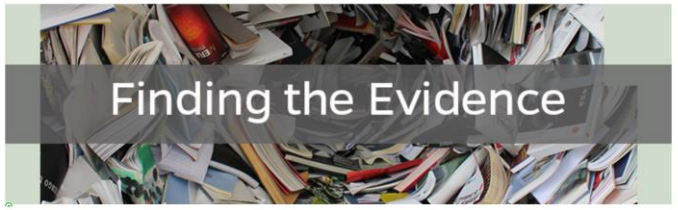
MODULE 1

MODULE 2

MODULE 3

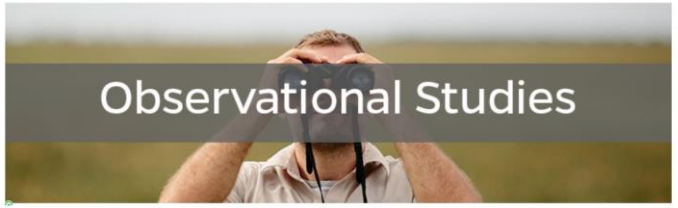


MODULE 4



MODULE 5

MODULE 6

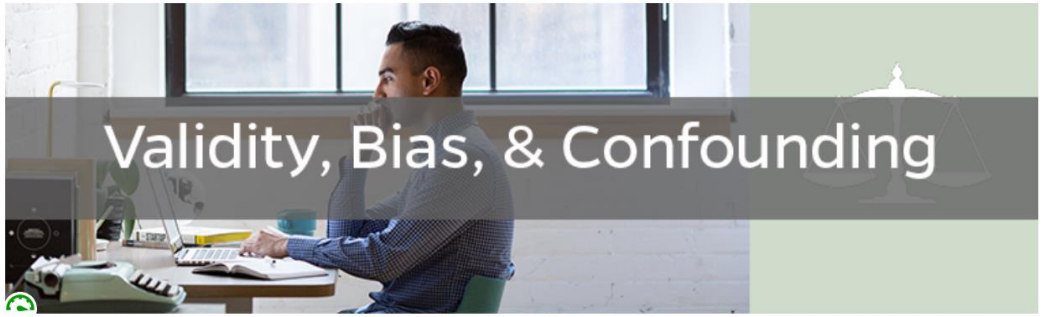


Introduction to Evidence-Based Dentistry

Introduction to Evidence-Based Dentistry

MODULE 7

MODULE 8

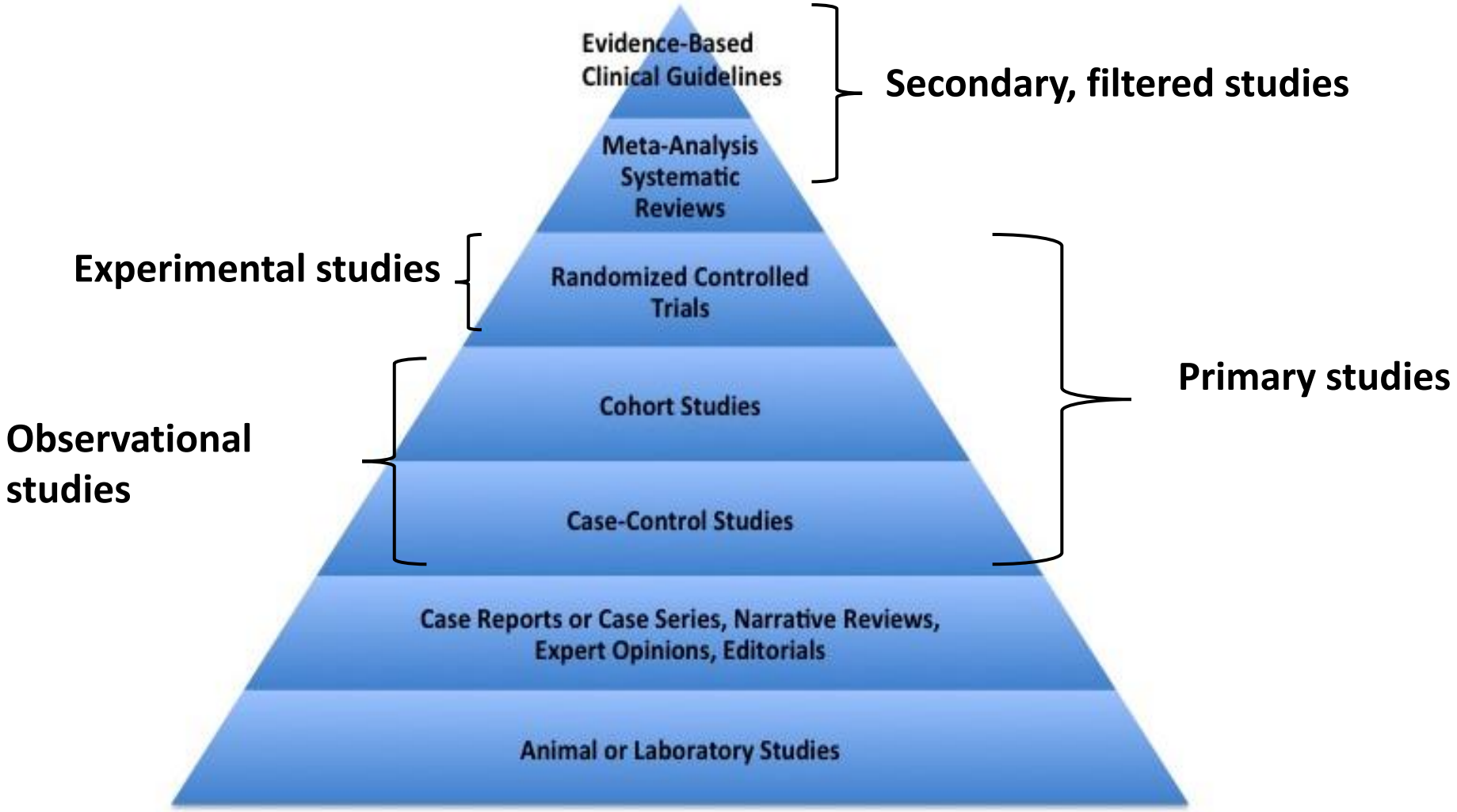


MODULE 9

MODULE 10

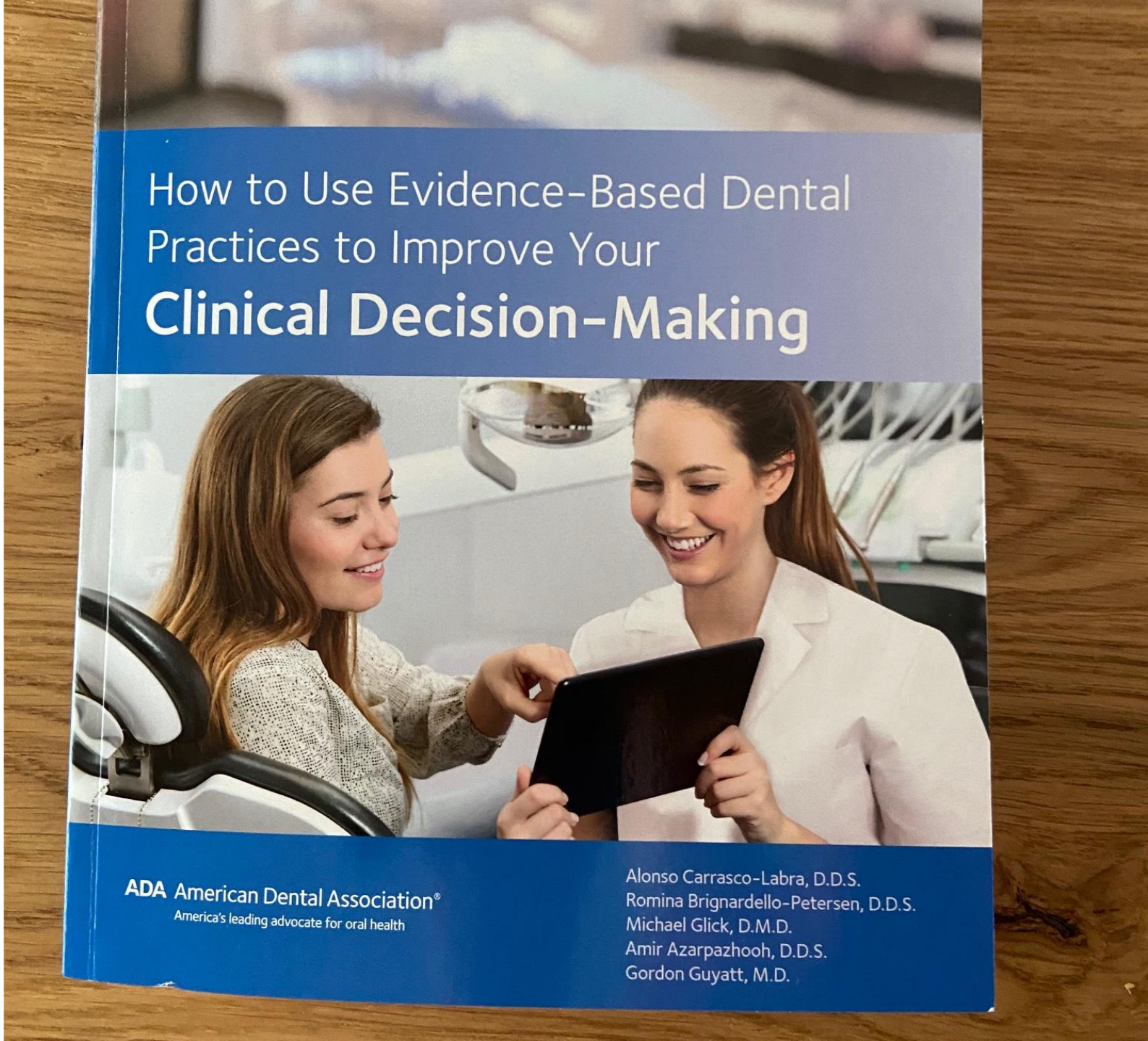
Levels of Evidence

Based on the ability to control bias and demonstrate cause and effect in humans



How to Use Evidence-Based Dental Practices to Improve Your Clinical Decision-Making. ADA. ISBN-978-1-68447-061-7

https://ebd.ada.org/en/education/book



Sources of Evidence

Databases

- ADA EBD Center http://ebd.ada.org/en/
- The Cochrane Library http://www.cochranelibrary.com/
- PubMed http://www.ncbi.nlm.nih.gov/pubmed
- TRIP database http://www.tripdatabase.com/
- UpToDate www.uptodate.com

Journals

- The *Journal of Evidence-Based Dental Practice* http://www.journals.elsevier.com/journal-of-evidence-based-dental-practice/
- *Evidence-Based Dentistry* http://www.nature.com/ebd/index.html

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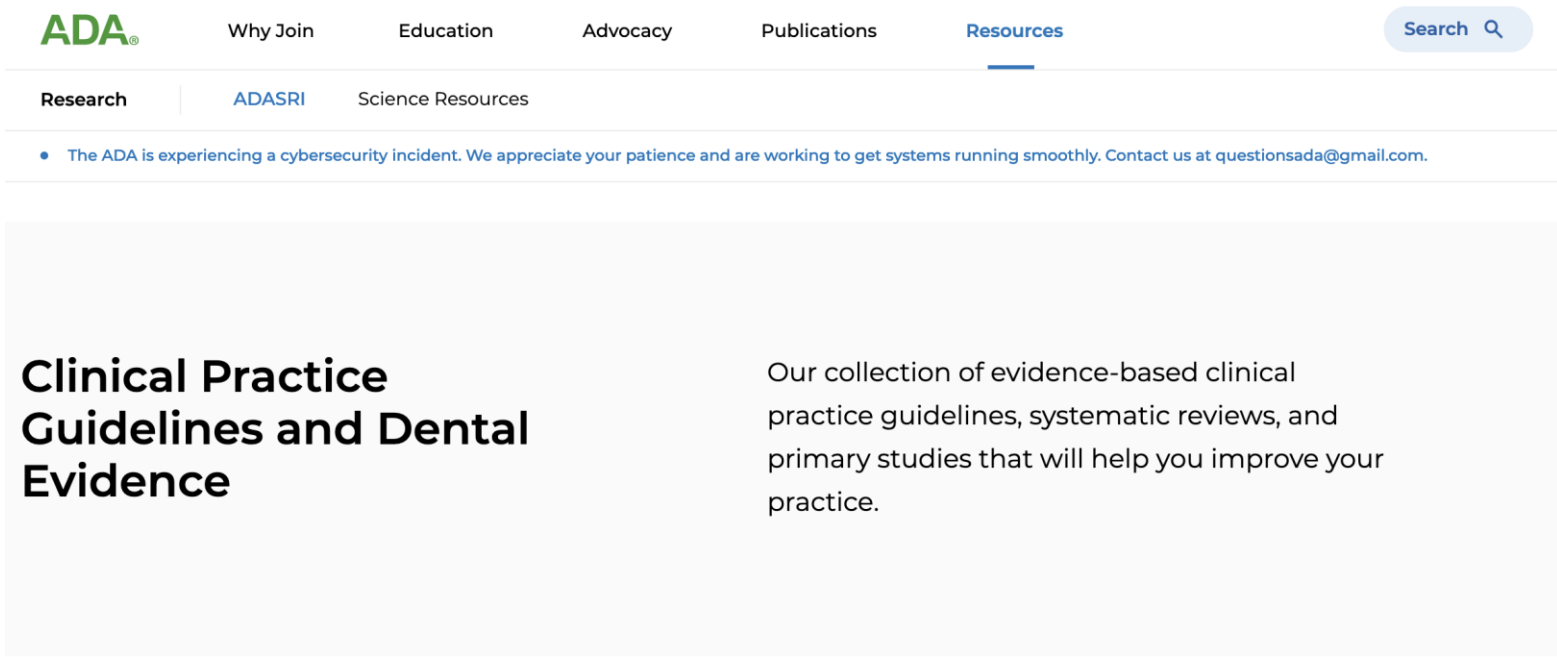
Sources of Evidence

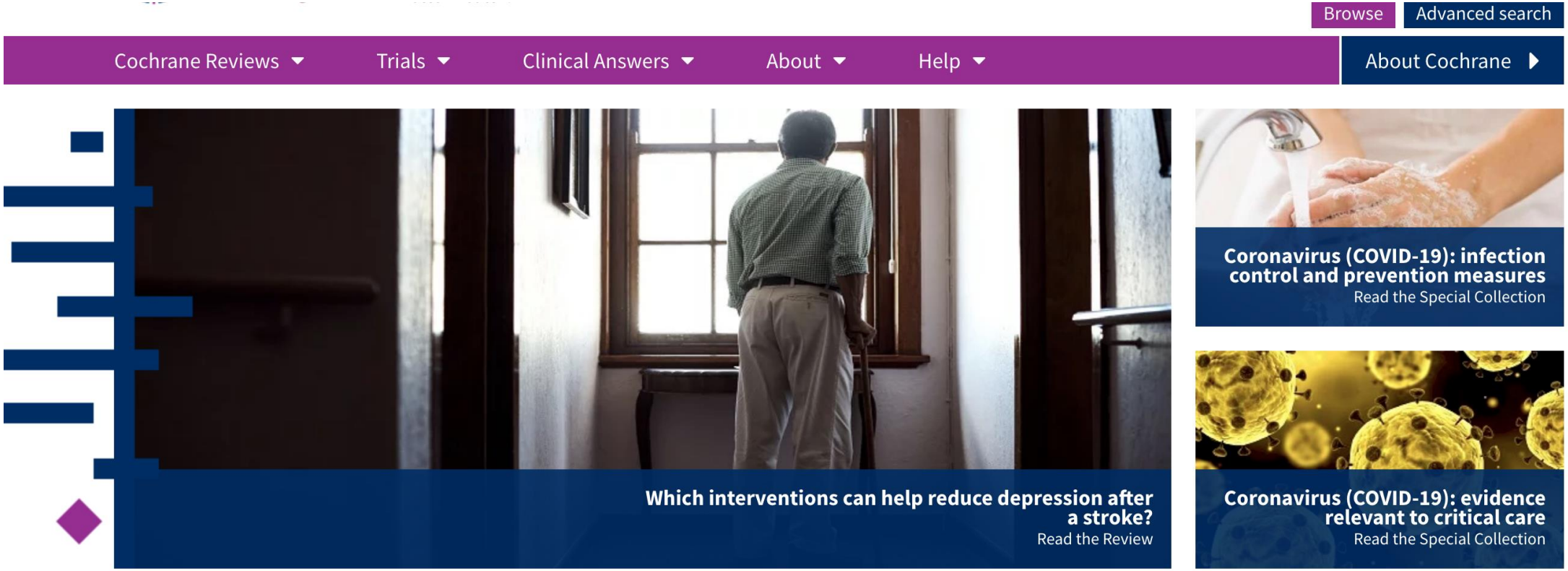
- Professional Organizations
- ADA EBD Center http://ebd.ada.org/en/
- The Centre for Evidence-based Dentistry http://www.cebd.org/
- The Cochrane Collaboration http://www.cochrane.org/
- Guidelines, Recommendations and Evidence-based Practices Resource Links
- http://www.astdd.org/guidelines-recommendations-and-evidence-based-practices-resource-links/
- The Agency for Healthcare Research and Quality (AHRQ) http://www.ahrq.gov/index.html
- The Centre for Evidence Based Medicine http://www.cebm.net/
- U.S. Preventive Services Task Force http://www.uspreventiveservicestaskforce.org/
- The Guide to Community Preventive Services http://www.thecommunityguide.org/index.html

Additional Sources

- EBD LibGuide at UF
  http://guides.uflib.ufl.edu/ebdental
- Dental Elf
  http://www.thedentalelf.net/
- UTHSCSA Dental School Oral Health searchable CAT library at
  https://cats.uthscsa.edu/

ADA EBD Center



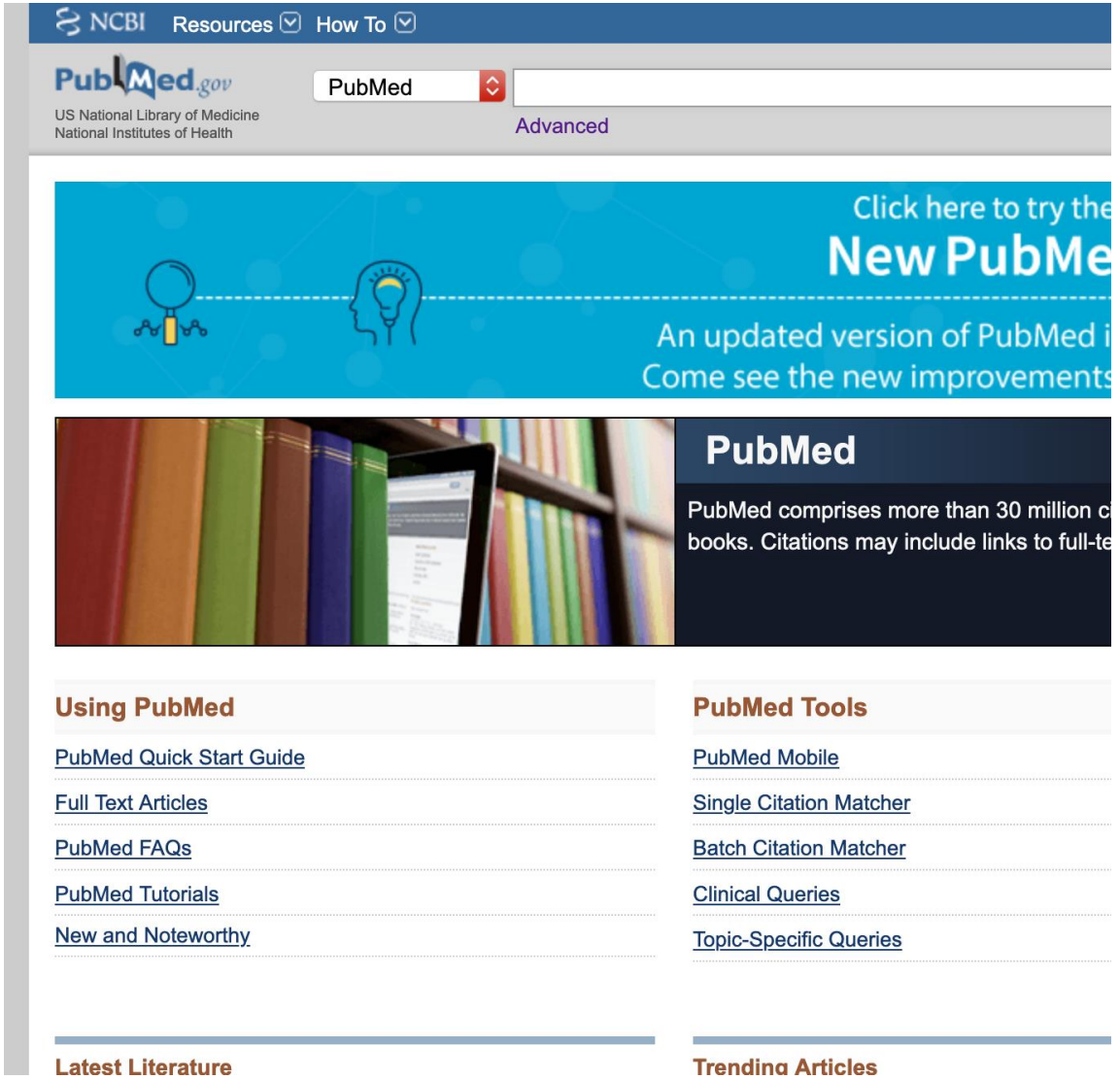


Cochrane Library

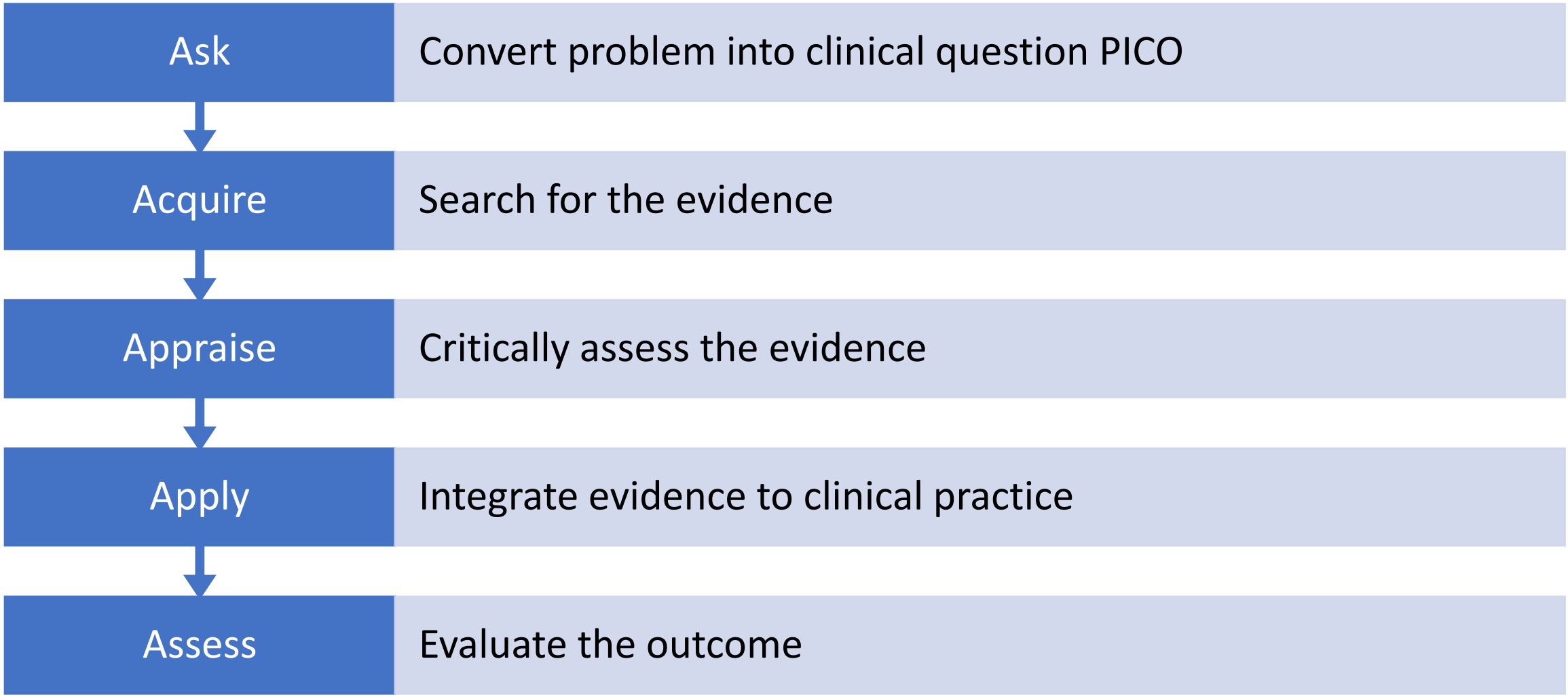
- **An online library of published systematic reviews of evidence.**
- **You can search for reviews by topic (e.g. asthma), special collections (e.g. preventing falls) & keywords. You can read reviews in summary format (key points), standard format (like a published paper) & full format (everything!) including graphs and tables.**

PubMed

- PubMed includes 23 + million citations for biomedical literature from MEDLINE, life science journals, and online books. MEDLINE is the U.S. National Library of Medicine® (NLM) bibliographic database
- PubMed is a free resource that is developed and maintained by the National Center for Biotechnology Information (NCBI), at the U.S. National Library of Medicine (NLM), located at the National Institutes of Health (NIH).



EBDM 5 - Step Process



Critical Appraisal

1. Are the results of the study valid?
2. What are the results? Are they significant?
3. Will the results help locally?

Course Activities and Evaluation

- 10 modules
- Library seminars
- 3 team assignments (15p)
  - Each student should contribute <u>100% (1 submission per team)</u>

    - Assignment # 1(5p) = clinical question
    - Assignment # 2 (5p) = PICO
    - Assignment # 3 (5p) = 3 best evidence

Course Activities and Evaluation

- M2 Systematic Review Blog = 5p
- Quizzes (5 x 6p) = 30p
- Attendance: Group Discussion for Final Projects, seminars, participation = 10p
- Final Team ppt and presentation including peer reviews = 40p

M1 Module

MODULE 01

INTRODUCTION TO EVIDENCE-BASED DENTISTRY

OVERVIEW

Eliminating disease and maintaining health are the ultimate goals of any health profession. Evidence-based dentistry (EBD) is an approach to oral health care that requires the judicious

TO DO

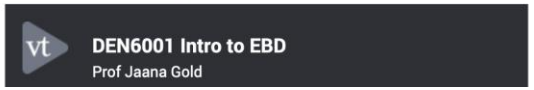
1. Attend lecture: 5/11/2022 - 9:35 - 11:30pm - L-1 Introduction to EBD L2- Study Design and Level of evidence
2. Watch videos below, read ADA textbook chapter 1 and article by J Forrest.
3. Complete Team Assignment #1 (under Assignments) Instructions are given in the class. - ***Due 05/11/2022 midnight***
4. Complete work in module 2 - Introduction to Study Design and Level of Evidence

READINGS, LECTURES, & VIDEOS

WATCH:

- *2021 Introduction to EBD presentation in VoiceThread (this is from the last year 2021 when we were fully online. We will have in person class in 2022. Ignore all references to 2021 but focus on the content. you dont have to watch this unless you want to. we will go over the content in the class on May 11th).*

Click 'play' button to review the presentation. You can leave comments or questions using ABC button to write it or mic to record the audio.



READ:

- **Read Carrasco-Labra, Brignardello-Petersen, Glick, Azarpazhooh, Guyatt, How to Use Evidence-Based Dental Practices to Improve Your Clinical Decision-Making. ADA. ISBN-978-1-68447-061-7 Chapter 1**
- Read the article *Evidence-Based Decision Making: Introduction and Formulating Good Clinical Questions* (Forrest J) (supplemental reading)
- Review Final Project Assignment to understand the flow of the course.

DATABASES USED IN THIS COURSE!!!!

- ADA EBD Center
- Cochrane library
- TRIP database
- UptoDate database
- PubMed (later in this course)

ADDITIONAL RESOURCES:

- *Journal of Evidence-Based Dental Practice*
- UTHSCSA Dental School Oral Health searchable CAT library
- "The Dental Elf" (blog site with regular summaries of the latest dental evidence)

ASSIGNMENTS

- Complete Team Assignment 1 - ***Due 05/11/2022 Midnight***
- ***Group Discussions for Assignments and Final Projects* (work on your final project and team assignments weekly)**
- *You have been divided into 14 teams. You have to work as a team throughout this course.* ***You can find your teams in People***
- ***In module 4 you have mandatory library sessions and you can find groups and dates here***

Team Assignment #1

WRITE A CLINICAL QUESTION

ASSIGNMENT 1: WRITE A CLINICAL QUESTION

Convert your case into a one-sentence clinical question (1 sentence only).

For example: Does flossing reduce interproximal caries in children?

TEAMS & CASES

TEAMS

Here is the list of the teams. Find your team and get together as a team to start working on your case.

Teams 1- 14

CASES

Here is the list of the cases. Find your team case in this list.

Team Cases 2021

Team Cases

Dr. Jaana Gold
DEN6001: Introduction to Evidence-Based Dentistry

Student Team Cases 2022

Please, use these cases as your primary problem to conduct team/group assignments (1 case/team). Work as a team. One student can represent the group and submits the assignment, however, each student contributes to the work 100%.

GROUP 1

A father brings her 8-year-old child to your dental practice and wants to know if dental sealants will help to keep his cavities away. You wonder whether sealing permanent molars indeed prevent and control dental caries and what is the evidence for it. What would be your answer based on the best available scientific evidence?

Start by converting this problem/case into a brief clinical question.

M2 Systematic Review Blog

Start Assignment

Due Wednesday by 11:59pm **Points** 5 **Submitting** a text entry box or a file upload
Available until May 11 at 11:59pm

This is graded blog assignment (5p).

Write a blog-like response with at least 300 words.

For your blog, and in your own words, discuss the differences between systematic reviews (SRs) and narrative reviews. Give at least 4 differences. Also, discuss how meta-analysis (MA) is different from the systematic review. Use professional and scholarly style.

Give examples of each (SR, narrative and MA) by finding 3 different articles to represent these 3 types of studies/articles. You can either use PubMed or google scholar (this is the only time you are allowed to use google scholar for your searches). We will learn to search PubMed soon, so if you do not know how to use PubMed yet, use Google Scholar.

Give the examples using full citations (authors, year, title and journal name, issue, page numbers). For example *Parisotto TM, Steiner-Oliveira C, Silva CM, Rodrigues LK, Nobre-dos-Santos M. Early childhood caries and mutans streptococci: a systematic review. Oral Health Prev Dent. 2010;8(1):59-70.*

This is independent work, and we take any plagiarism or academic misconduct seriously. We will use Turnitin to see similarities between posts or if anyone is using copy-paste method. So use your own words and paraphrase. Here is the link to learn about paraphrasing https://apastyle.apa.org/style-grammar-guidelines/citations/paraphrasing

TEAM ASSIGNMENT #3

SELECT 3 SOURCES OF EVIDENCE THAT BEST ANSWER YOUR CLINICAL QUESTION

TEAM/GROUP:_____

Instructions: *Write below your PICO question, even if it did not change since your last assignment. You must answer all the questions legibly for this assignment and submit it by the due date/time listed to receive a PASS.*

Has your PICO question changed since Assignment #2? (check one) □ **Yes** □ **No** *(there is no penalty if you answer "yes")*

[1] FINAL PICO: _____

_____

_____

P = _____ **I =** _____

C = _____ **O =** _____

[2] SOURCES OF EVIDENCE (list them in order, from the best to the worst)

Instructions: *Your MUST list your three BEST sources of evidence here. Your sources must be legible and should be easily found by third parties. All students from each team are expected to have searched for, read in full, examined and approved this list. Assignments cannot be split among students. Keep a copy of this completed assignment for your records.*

EVIDENCE - *Example of how to cite (look at references inside journal articles for more examples):*	***SOURCE -Example:***	***Study Design examples:***
Parisotto TM, Steiner-Oliveira C, Silva CM, Rodrigues LK, Nobre-dos-Santos M. Early childhood caries and mutans streptococci: a systematic review. Oral Health Prev Dent. 2010;8(1):59-70. (PMID: 20480056)	*PubMed, ADA EBD website (ada.ebd.org), Cochrane reviews etc.*	Meta-analysis, systematic review, review, RCT, cohort, case-control etc.

EVIDENCE: List in order from the best to worst. *Give full details, including at minimum: first author's name, title, journal and year of publication. Print legibly.*	***SOURCE: How did you find it?*** *You must give the name of the database and full electronic link if available. Print legibly without misspellings.*	***STUDY DESIGN:*** *Describe the study design used in the article*

Due Jun 7 by 11:59pm **Points** 0 **Submitting** a file upload

DEN6001

INITIAL POWERPOINT SUBMISSION

Overview: Final Team EBD Project and Presentation

The final EBD project will consist of a: CG-11 studio room

- Submitting a PowerPoint by June 7th for my initial review.
- Submitting the complete presentation by June 12th.
- Your team presentation in classroom June 13-14th.

First submit your group's PowerPoint slides for my review. One person from each group should submit the group's PowerPoint. I will provide feedback for that PowerPoint to the person who submitted, who needs to share the feedback within the group.

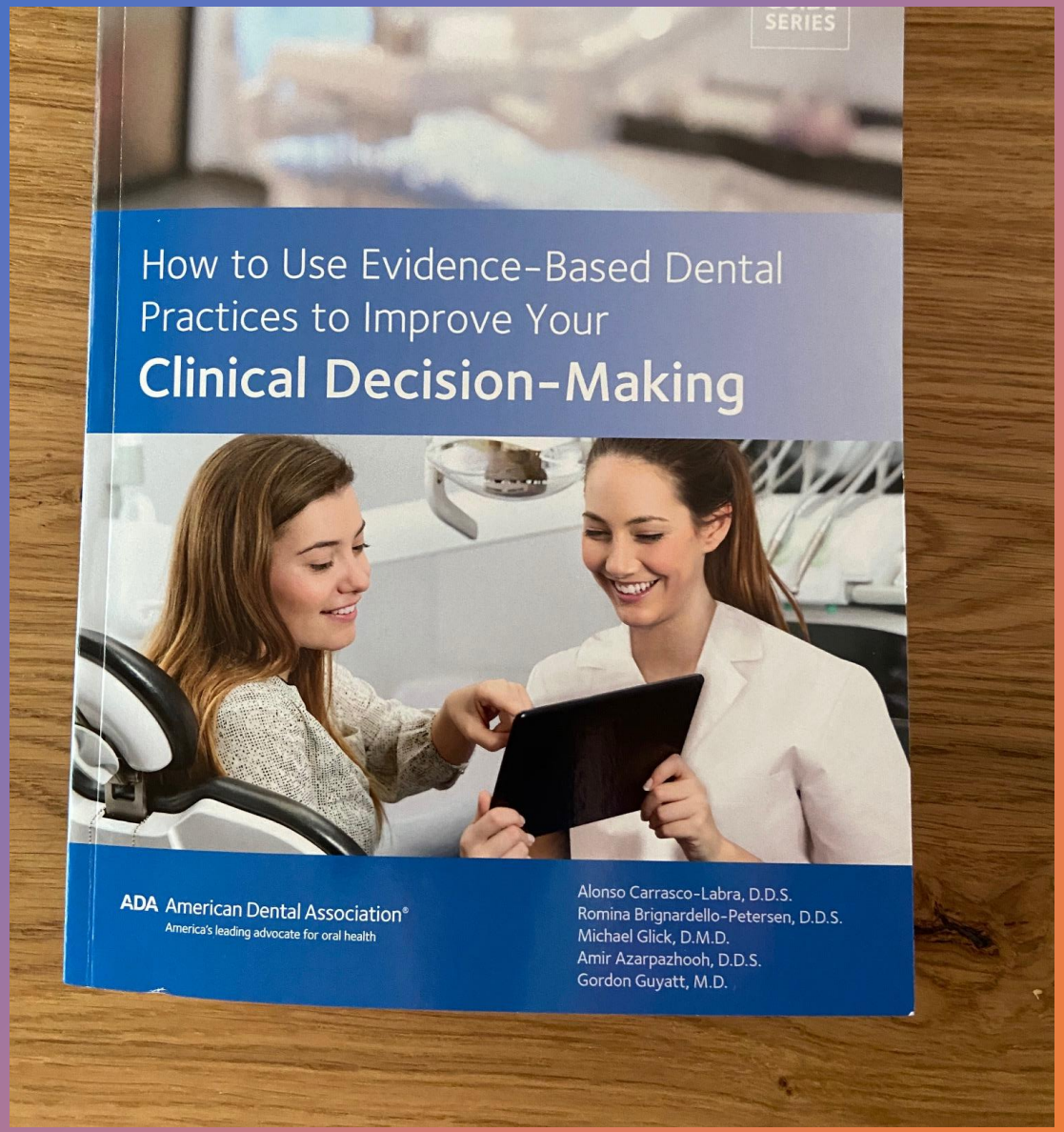
PRESENTATION OUTLINE

Use the following outline for your presentation:

- **Introduction (1-2 slides)**
  - Background, definition and significance of the problem (describe the team case)
  - Current standard of care (if known)
  - Give any additional general information of the disease, problem, condition etc that might help to understand the clinical question/case
  - **PICO (1 slide)**
    - **Describe PICO components i.e.** Patient population(s) and to whom the findings are meant to apply etc.
  - **Methods/Evidence search process (1-3 slides)**
    - **Search strategy**
      - Report criteria used in **search process,** which **databases** were used (PubMed, Cochrane etc), which **key terms** your team used, search **limits/filters** used, any **websites** searched, journals etc); and **type**(s) of studies searched (SRs, RCTs etc)
      - Report the **number of citations and abstracts** found in the first search and after you applied the limits
    - **Inclusion/exclusion criteria**
      - Report the number of abstracts/articles rejected at the first reading (reasons for exclusions)
      - List the articles selected for the final 3 evidence list (use full citation style: Authors, year, title, journal, issue, pages)
    - **Summary of existing evidence (4-6 slides)**
      - Critical appraisal of each article for its validity (use the CASP checklist. if the article is SR, use checklist for SR). answer only those **3 main questions** (A -C)
      - **Summary** of the evidence (summarize all 3 studies in 1 slide)
      - Discuss **limitations** of current evidence if any
- **Recommendations (1 slide)**
  - Compare the evidence with the current standard of care

Opportunities

- **Increase EBD education and dissemination**
  - **Faculty training**
  - **Clinical integration**
  - **INBDE!**
  - **Value-Based Care**
- **Remove financial and political barriers**
- **Improve the quality and accessibility of EBD evidence or tools**
- **Encourage students/dentists to be more open to changes**
- ***… make clinicians understand that EBD is not about dictating what to do, but about what information is available to supplement their knowledge….***



Thank you!

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- EBD Textbook: *How to Use Evidence-Based Dental Practices to Improve Your Clinical Decision Making*
  - ADA Store at https://ebd.ada.org/en/education/book