**EBD in Dental Schools:**
The San Antonio “CATs Initiative”

JOHN D RUGH, Ph.D.
University of Texas Health Science Center
San Antonio

ADA Evidence-Based Dentistry Champions Conference
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**PURPOSE & OBJECTIVES**

1. Provide an overview of a Dental School Evidence Based Practice program.

2. Describe EBP learning tools and exercises.

3. Review Student & Faculty outcomes

4. Discuss “Lessons Learned”

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**Traditional Strategy for Keeping Up-to-Date**

- **STUDY**
  - Textbooks
  - Journals
  - Guidelines
- **ATTEND**
  - Study Clubs
  - CE Courses
  - Prof Mtgs

“Read & remember Everything you can”

Patient Care

**“We need new Educational models”**

Right

**EBM INFORMATION AS NEEDED**

*Teach skills of:*

1. Asking focused clinical questions,
2. Finding the strongest evidence,
3. Critical appraisal of the evidence and

The aim is to promote lifelong learning skills.

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**“INFORMATION AS NEEDED” Model**

Focus on problems your patients have
………rather than trying to keep with everything.
A CAT is a structured one-page summary and critique of the best available evidence on a focused question.

The CAT will serve as a mechanism to infuse science & critical thinking skills into Dental Education at all levels.

Find the strongest research

Find the strongest research using PubMed, Cochrane Library, and other evidence-based search engines.

Fall Soph EBP Course

- 16 hours
- Focus on:
  1. Asking PICO Questions
  2. Searching for Evidence
  3. Evaluating the Evidence
  4. Writing the CAT

CATs Initiative DS2s

FALL
- Mini CAT Exercises in Clinical Courses 5-10 min
- Full CAT INTD 6088
- Search OSCE INTD 6088 30 min

SPRING
Mini CAT Exercises: Examples

1) Format a focused (PICO) question:

**Clinical Question**
The KAVo website states:
"DIAGNOdent aids in the detections of caries. Even very small lesions are detected at the earliest stage, enabling you to protect and preserve the tooth substance."

**Assignment:**
Formulate a PICO question to help you find the best evidence about the accuracy of DIAGNOdent in detecting early dental caries.

**P:** In adult dental patients...

**I:** ...

**C:** ...

**O:** in the detection of proximal dental caries limited to enamel?

Mini CAT Exercises: Examples 5-10 min

2) Pick 2 articles or advertisements and write 2 PICO questions

Mini CAT Exercises: Examples

3) Given a PICO question, find the strongest evidence:

**Finding the Strongest Evidence OSCE**

**15 min per PICO**

**Student**

**Instructions:** This is a test of your ability to choose the best (and, if there are several equally good ones, the most recent) articles with which to answer a PICO question.

You should accomplish this by using the most appropriate Mesh terms (and in some cases adding MeSH, combining them appropriately) and finding the results appropriately, in a PubMed search.

For each of the two PICO questions provide the best station you can find. Write the PICO, two lines of one action and one of the evidence in the space provided:

<table>
<thead>
<tr>
<th>PICO question</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment with calcium hydroxide, then potassium nitrate sodium fluoride, is more effective than calcium hydroxide alone.</td>
<td>Systematic Review</td>
</tr>
<tr>
<td>Treatment with regenerative medicine, then potassium nitrate sodium fluoride, is more effective than calcium hydroxide alone.</td>
<td>Case Series</td>
</tr>
</tbody>
</table>

**Test for questions with different levels of evidence: example**

Example of treatment with very little evidence

Example of treatment with lots of evidence

1967 2002 2013
Mini CAT Exercises: Examples

4) Assess Strength of Evidence

- META-ANALYSIS
- Systematic Review
- RANDOMIZED TRIAL
- COHORT STUDY
- CASE SERIES
- CASE STUDY

3.5 min

ADA Center for Evidence-Based Dentistry

1) Ask a Question
2) Search
3) Appraise
4) Write CAT

Faculty Development

108 of 134 Faculty Trained as CAT Mentors

4 to 6 hour workshops

UTHSCSA

Critical Topics

http://cats.uthscsa.edu/

Clinical Bottom Line:

- For patients requiring dental implants, narrow-diameter implants should not be used in settings with standard wide-diameter implants. No statistical analysis of findings was done in this review. There results must be considered relative to the potential for under-applying and functional demands associated with the use of narrow-diameter implants, and also the effect of review bias. A random-diameter implant is as narrow-diameter implant. The blocking effect reported in the suicide rates study by 106 examining patients using standard or narrow-diameter implants. The results vary widely, and should not be compared consistently across studies. Narrow-diameter implants, followed by wider diameter implants, were evaluated for an average of 4 years. 93 a, b, c.
Keeping CATs up-to-date

Our CATs Library went online May 15, 2011

Worldwide Source for Up-To-Date Oral Health Knowledge for the Public and Profession

Visits from 2,323 Cities Worldwide
What is the evidence that teaching Evidence Based Practice changes anything AND how should we teach it?

A systematic review 23 Studies Coomarasamy and Khan BMJ 2004;329(7473):1017

Results:
- Stand alone teaching of EBM improved knowledge but not skills, attitudes, or behaviour.
- Clinically integrated teaching improved knowledge, skills, attitudes, and behaviour.

Conclusion: Teaching of evidence based medicine must be moved from classrooms to clinical practice.

UTHSCSA CATs INITIATIVE

DS1 EBS, information instruction 4hrs

DS2 EBD/CATs Instruction 16hrs

DS3 CATs Requirement in Clinical Courses, Core Exam, ACP, DPD

DS4 CATs Requirement in Clinical Courses, Core Exam, ACP

Residency Res Methods & CATs Instruction CATs Requirement in Clinical Courses

Patient Values & Expectations

EBM

Best External Evidence

Individual Clinical Expertise

DS2

DS3&4

The Evidence-based Medicine Triad
Source: Florida State University, College of Medicine, Revised 06/07/11
Clinical Presentations - CATS

UTHS CSA Predoctoral Curriculum

Subjective
- CC: "I would like my front teeth to look better."
- Pt hopes with shape of teeth, but stain removed.

Monthly Student/ Faculty CAT Publication Texas Dental Journal

Dr. Cristina Villar is currently an Assistant Professor in the Dept. of Periodontics at UTHSCSA.

Authors: Critically Appraised Topics CAT OF THE MONTH

Clinical Question: In a patient with a pronounced frenulum labii superioris, or lingual frenulum, does laser frenectomy provide a faster healing time and/or less pain when compared to conventional surgical frenectomy?

Clinical Bottom Line: Laser frenectomy results in significantly less postoperative pain and impairment of function compared to conventional surgical frenectomy.


Key Results: Postoperative pain scores in both studies were significantly lower at 1 and 7 days in patients treated with laser surgery. Eighty-five percent and 92.5% of patients in the conventional surgery group used analgesics during the first postoperative week compared to 33% and 5% of the laser surgery group in the two studies. Patient assessments of discomfort during eating and speaking were also lower in the laser groups.

Comments on Evidence: Both studies were Randomized Clinical Trials completed in two different Turkish university clinics using two different laser instruments, the Smarty A DEKA, (Firenze Italy) and the Luxar Nova Pulse LX-20SP, (Bothell WA). Forty patients completed both studies and groups were treated the same, except for the intervention. The investigators aimed to create equivalent sizes of surgical wound in both groups. Subjects were asked to measure and report postoperative pain, postoperative discomfort in eating, and postoperative discomfort in speaking on visual analog scales at days 1 and 7.

Applicability or Significance: Subjects were females and males, all non-medicated and healthy, with good oral hygiene, ranging from 18-26 years of age. All had labial or lingual frena extending to the interdental papilla of the central incisors.

Stephanie Cervetto is currently a Junior Dental Student at UTHSCSA.

Dr. Edward Ellis is Chair and a Professor of Surgery in the Dept. of Oral and Maxillofacial Surgery at UTHSCSA.

Outcome Assessments

KACE for 3 Groups

Our Students are invited to present our CATs Program at the ADA EBD Conference in Chicago each year.
Summary

1) Ask a Question
2) Search
3) Appraise
4) Write CAT

Critically Appraised Topic (CAT)

Student

Faculty

Lessons Learned

Doer VS User

Is it realistic & doable in Private Practice setting?

Original Research vs Evidence Summaries

In-Depth Critiques vs Efficient Search

New Accreditation Standards

Commission on Dental Accreditation

Critical Thinking

2-9 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.

August 6, 2010 Accreditation Standards for Dental Education Programs Adopted

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• UTHSCSA Dental Dean’s office

….and inspiration from the 2008 ADA EBD Champion Conference

FURTHER INFORMATION http://ebp.uthscsa.edu/