Objectives

1. Review the problem of keeping up-to-date
2. Describe the UT Critically Appraised Topics (CATs) Program
3. Identify limitations of the Evidence Based CATs Program
4. Ask for your help in evaluating CATs based on your “real world experience.”
So...... What's the Problem?
Problem: Healthcare Providers Are Having Trouble Keeping “Up-to-Date”
E.A. Balas, S.A. Boren. *Managing Clinical Knowledge for Health Care Improvement*. *Yearbook of Medical Informatics* 2000
2014 NPBRN Study
Found only 62% concordance between published research and clinical practice behaviors.

So....Why can’t we keep up-to-date?
There is just toooo much to read!

Dental Publications Indexed by National Library of Medicine

“Oral Health”

10,633 CITATIONS IN 2014
Keeping Up-to-Date in Orthodontics

1965
1 paper/Day

2014
7 Papers/Day

10 days
10 days
Another Problem!
The Half-Life of New Knowledge

The half-life of bio-medical knowledge is from 3-8 years.

The Medical Education and Research Trust & Continuing Medical Education Programs,” www.mertonline.com
Another Problem

Time

Biomedical Misinformation

New Biomedical Information
Non Peer-Reviewed Journals
Competing Problems of Private Practice

- Staffing Issues
- Overhead Costs
- Laboratory Work
- OSHA Regulations
- Patient No-Shows
- Equipment Failures
- Taxes
- Catching Up on Chart Notes
- Keeping Up-to-Date
Summary

Problems Facing US

1. Explosion of new knowledge
2. Half-life of current knowledge
3. Biomedical misinformation
4. Competing problems of practice
“We need new Strategies to deal with this”
Traditional Strategy for Keeping Up-to-Date

“Read & remember Everything you can”

Patient Care
New Strategy
“Information as needed Model”

Find and read the most recent research when needed
“Just in time Learning”

1. Ask focused clinical questions,
2. Quickly find the strongest evidence,
3. Critically appraise the evidence and
4. Use Judgment in applying the evidence.
UTHSCSA School of Dentistry

“CATs Initiative”

UTHSCSA
1. Ask a Question
2. Search
3. Appraise
4. Write CAT

Critically Appraised Topic (CAT)
What is a CAT?

“A CAT is a structured one-page summary of the best available evidence on a focused question.”
1. Ask a Question
2. Search
3. Appraise
4. Write CAT

Student

Classroom or Clinical Encounter

Faculty

Critically Appraised Topic (CAT)

UTHSCSA

CATs Online Library
104 of 132 Faculty Trained as CAT Mentors
Welcome to CATs Library

846 Published CATs

Dec 31, 2014

Search the Library

Welcome to the UTHSCSA Dental School Oral Health searchable CAT library. A CAT is a “Critically Appraised Topic” related to a clinical dental problem. Our students and faculty work together to find and report the strongest, most recent, and most relevant evidence pertaining to dental diagnosis and treatment. This online library rapidly provides users with up-to-date evidence-based answers to focused clinical questions. The CATs are updated as new research is published.
CRITICALLY APPRAISED TOPICS

Search and Browse our CATs Database

Search by word

Search for CATs that contain key words from the title, clinical question, clinical bottomline, key results, applicability, and keywords

http://cats.uthscsa.edu/

Search by author/co-authors

Search for CATs that contain key words from the title, clinical question, clinical bottomline, key results, applicability, and keywords

Browse by Dental Specialty

Show list of CATs under the selected specialties below.

- Community Dentistry
- Dental Diagnostics
- Endodontics
- General Dentistry
- Oral Surgery
- Orthodontics
- Pediatric Dentistry
- Periodontics
- Prosthodontics
- Restorative Dentistry
- Basic Science
CATs Library went online May 15, 2011

The CATs are now a worldwide source for Up-To-Date Oral Health Knowledge for the Public and Profession
CATs Library Usage

Sessions: 69,677
Users: 46,888
Pageviews: 315,965
Pages / Session: 4.53
Avg. Session Duration: 00:03:11
Bounce Rate: 34.00%

New Visitor: 32.7%
Returning Visitor: 67.3%
Visits from 2323 Cities Worldwide
The CATs are published in the Texas Dental Journal

104 Students & Faculty Coauthors 2012-14
The San Antonio “CATs (Critically Appraised Topics) Initiative” Incorporating Evidence-based Practice into the Dental School Curriculum
OK, So, What’s the Problem?
"Your Real World Clinical Experience is Needed!"
A request for your help!
### Our Vision

**Title**  
Polymer Burs Remove Less Sound Dentin and are as Effective as Carbide Burs in Caries Removal

**Clinical Question**  
In a patient with dentin caries, is the use of a polymer bur compared to a conventional round bur more effective in selectively removing carious dentin?

**Clinical Bottom Line**  
Polymer burs were found as effective as carbide burs in caries removal. They remove less sound dentin and conserve more tooth structure than traditional round burs.

**Best Evidence** (you may view more info by clicking on the PubMed ID link)

<table>
<thead>
<tr>
<th>PubMed ID</th>
<th>Author / Year</th>
<th>Patient Group</th>
<th>Study type (level of evidence)</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 20836951</td>
<td>Isik, 2010</td>
<td>24 patients with 2 active carious lesions on primary molars</td>
<td>Randomized Controlled Trial</td>
</tr>
<tr>
<td>#2 17645069</td>
<td>Hauman, 2007</td>
<td>20 non-caries extracted molars</td>
<td>In Vitro Study</td>
</tr>
</tbody>
</table>

**Practitioner Experience**  
95% of 78 dentists report that the conclusions of this CAT are consistent with their clinical experience. See Comments on the CAT for concerns & qualifiers.

**Importance**  
Rating (1-5 Scale) of 78 dentists on the usefulness of this information for their practice.
Practitioner Experience

95%

of 78 dentists report that the conclusions of this CAT are consistent with their clinical experience. See Comments on the CAT for concerns & qualifiers.

Importance

Rating (1-5 Scale) of 78 dentists on the usefulness of this information for their practice.
Request your help in evaluating 9 sample CATs

<table>
<thead>
<tr>
<th>Observations and Experience from the Practice Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UT CAT #609</strong>: In terms of longevity, dental amalgam and resin composite are comparable. In larger restorations, amalgam may be the material of choice as its failure rates are slightly lower than resin composite, especially for patients at high risk for caries.</td>
</tr>
</tbody>
</table>
| 1) Based upon my clinical experience, this information is:  
  - Correct  
  - Incorrect  
  - Generally correct but in need of qualification  
  - No experience with this |
| 2) Rank the importance of this information:  
  | 1 | 2 | 3 | 4 | 5 |
  | Low | High |
| **UT CAT #610**: Stainless steel crowns exhibit superior longevity and reduced need for retreatment than class II amalgam restorations in pediatric patients. |
| 1) Based upon my clinical experience, this information is:  
  - Correct  
  - Incorrect  
  - Generally correct but in need of qualification  
  - No experience with this |
| 2) Rank the importance of this information:  
  | 1 | 2 | 3 | 4 | 5 |
  | Low | High |
| **UT CAT #611**: As long as the clinician is confident in their ability to infract the maxillary sinus, immediate removal of the root tip from the sinus is the most beneficial method of treatment for a root tip displaced into the maxillary sinus. |
| 1) Based upon my clinical experience, this information is:  
  - Correct  
  - Incorrect  
  - Generally correct but in need of qualification  
  - No experience with this |
| 2) Rank the importance of this information:  
  | 1 | 2 | 3 | 4 | 5 |
  | Low | High |

**UT CAT #2114**: In patients receiving intranasal needle injections, topical lidocaine is just as effective as topical benzocaine in reducing the amount of pain felt upon injection.

1) Based upon my clinical experience, this information is:  
  - Correct  
  - Incorrect  
  - Generally correct but in need of qualification  
  - No experience with this |
2) Rank the importance of this information:  
  | 1 | 2 | 3 | 4 | 5 |
  | Low | High |

**UT CAT #2208**: Polymer burs are as effective as carbide burs in caries removal. They remove less sound dentin and conserve more tooth structure than traditional round burs.

1) Based upon my clinical experience, this information is:  
  - Correct  
  - Incorrect  
  - Generally correct but in need of qualification  
  - No experience with this |
2) Rank the importance of this information:  
  | 1 | 2 | 3 | 4 | 5 |
  | Low | High |

**UT CAT #2212**: There is no significant difference between gold and zirconia crowns in failure rates, but clinical wear is more extensive with zirconia crowns.

1) Based upon my clinical experience, this information is:  
  - Correct  
  - Incorrect  
  - Generally correct but in need of qualification  
  - No experience with this |
2) Rank the importance of this information:  
  | 1 | 2 | 3 | 4 | 5 |
  | Low | High |

**UT CAT #2262**: Endodontically treated posterior teeth with full cuspal coverage restorations have increased long-term survivability compared to treated teeth without full cuspal coverage restorations.

1) Based upon my clinical experience, this information is:  
  - Correct  
  - Incorrect  
  - Generally correct but in need of qualification  
  - No experience with this |
2) Rank the importance of this information:  
  | 1 | 2 | 3 | 4 | 5 |
  | Low | High |

**UT CAT #2790**: Higher HbA1c levels are associated with increased rates of postoperative complications such as peri-implantitis and peri-implant bone loss. However, implants can be successfully across a wide range of glycemic control.

1) Based upon my clinical experience, this information is:  
  - Correct  
  - Incorrect  
  - Generally correct but in need of qualification  
  - No experience with this |
2) Rank the importance of this information:  
  | 1 | 2 | 3 | 4 | 5 |
  | Low | High |

**UT CAT #2800**: With respect to effective dosage, a CBCT volume of the upper and lower jaws is a possible alternative to a full-mouth series when compared to round collimated, high-speed receptor images.

1) Based upon my clinical experience, the conclusions of this CAT are:  
  - Correct  
  - Incorrect  
  - Generally correct but in need of qualification  
  - No experience with this |
2) Rank the importance of this information:  
  | 1 | 2 | 3 | 4 | 5 |
  | Low | High |
Observations and Experience from the Practice Setting

UT CAT #602: In terms of longevity, dental amalgam and resin composite are comparable. In larger restorations, amalgam may be the material of choice as its failure rates are slightly lower than resin composite, especially for patients at high risk for caries.

1) Based upon my clinical experience this information is:
   - Correct
   - Incorrect
   - Generally correct but in need of qualification
   - No experience with this

2) Rank the importance of this information:

   1  2  3  4  5
   Low  High
1. Ask a Question
2. Search
3. Appraise
4. Write CAT

Critically Appraised Topic (CAT)

Student

Faculty

Experienced Practitioners
At noon today you will receive a Summary Report of all responses.

◆ Compare your experiences with others.

◆ All responses are confidential “no names.”
THANK YOU!

QUESTIONS?

COMMENTS?

CATs
UTHSCSA