Dissemination and Implementation – Routine Practice

Presenter: Heiko Spallek, DMD, PhD, MSBA(CIS)

School of Dental Medicine
Dentists Trust Dentists

adapted from @David // Armano darmano.typepade.com
Agenda

1. Find information

2. Disseminate information

Dental Quality Alliance (DQA) — The Measurement Challenge

The Dental Quality Alliance (DQA) is hosting a 2015 Conference titled The Roles of Quality Measurement at the ADA Headquarters Building in Chicago on May 1-2, 2015. The goal of the Conference is to develop dental quality ambassadors who can help lead change within the profession.

I will give a presentation titled “Dissemination and Implementation – Routine Practice” at the Conference. Please find my slides and the references here as PDF.

In 2008, the Centers for Medicare and Medicaid Services proposed that the American Dental Association take the lead in establishing a Dental Quality Alliance to develop performance measures for oral health care. The DQA is an organization of major stakeholders in oral health care delivery that will use a collaborative approach to develop oral health care measures.

The DQA Guidebook succinctly states why self-evaluation is an important part of dentistry: “The dental profession is taking the lead in developing mechanisms for self evaluation. Self-evaluation will ensure that dentistry as a profession can provide evidence to the community at large that its members are responsible stewards of oral health. A culture of self-evaluation is the key to fostering the best healthcare for our patients ensuring transparency of health care quality and maintaining the credibility of the dental profession.”
Finding EBD Information

Scientific Evidence

Clinical Expertise

Patient’s Preferences & Values
Finding EBD Information

Scientific Evidence
- Systematic Reviews/Meta-analysis
- Randomized Controlled Trials
- Cohort
- Case-Control
- Cross-sectional
- Case Series
- Narrative Review
- Opinion

Clinical Expertise
- dentaltown
- Dental Products Report
- ADA News
- Clinicians Report (G. Christensen)
- Glasgow's Law

Patient’s Preferences & Values
- News/Media
- TV
- Family
- Friends
- Read on the Internet that …
- Woman next door said that …
Glasgow’s Law

“one half-cooked observation by myself is worth more than five randomized, controlled studies in the literature”

from a book review of “Practical aspects of antibiotic review” by Calvin M. Kunin, 1979
Eminence-based Information

Storytelling is the individual account of an event to create a memorable picture in the mind of the listener.

Kirkpatrick, 2007

1902 by E. Irving Couse, A. N. A.; The Historian (in the public domain)
Our Brains

Nicholas Carr: 
“Is Google Making Us Stupid?”

Serious thought gives way to skimming and multitasking.

*Thanks to Google and Mapquest, the human brain will completely atrophy by 2018.* (Andy Borowitz)
How do we find good information?

Joe McNally

“if you want your pictures to be better, stand in front of more interesting stuff”
Information Overload
voluminous & ambiguous

1) There is just toooooo much to read!

Dental Publications Indexed by National Library of Medicine

John Rugh, University of Texas HSC, San Antonio
EBD Champions Conference, 2013

Beta-carotene & cardiovascular mortality

Elliot Abt, Advocate Illinois Masonic Medical Center
EBD Champions Conference, 2013
Information Overload

![Graph showing the increase in medical journal articles from 1970 to 2010. The number of articles increases gradually until 2000, after which there is a sharp increase.]

Institute of Medicine report

*Best Care at Lower Cost: The Path to Continuously Learning Health Care in America*
Information Overload?

"there is no such thing as information overload, there's only a filter failure"

Old Paradigms

There’s a lot of information out there

- “Caries Research” has been published monthly* for over forty years
- Caries is the most prevalent disease in the world
- S. mutans is the second most popular organism in all of the scientific literature

Brian Novy, DDS, FADI
EBD Champions Conference, 2013
Old Paradigms

Jane Forrest, USC
EBD Champions Conference, 2013
Old Paradigms

Keeping up with the literature

Elliot Abt, Advocate Illinois Masonic Medical Center
EBD Champions Conference, 2013
Old Paradigms

Jane Gillette, Sprout Oral Health
EBD Champions Conference, 2013
Old Paradigms

C = Candor
H = Honesty
A = Accountability
I = Information Quality
N = Neighborly
T = Timeliness
R = Relevant
U = Unbiased
S = Scope
T = Trustworthy

Chain of Trust

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Level of Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Candor (C)</td>
<td>0 = not sure, can’t tell, doesn’t apply</td>
</tr>
<tr>
<td>Honesty (H)</td>
<td>2 = not adequate</td>
</tr>
<tr>
<td>Accountability (A)</td>
<td>4 = does this pretty good</td>
</tr>
<tr>
<td>Information Quality (I)</td>
<td></td>
</tr>
<tr>
<td>Neighborly (N)</td>
<td></td>
</tr>
<tr>
<td>Timeliness (T)</td>
<td></td>
</tr>
<tr>
<td>Relevant (R)</td>
<td></td>
</tr>
<tr>
<td>Unbiased (U)</td>
<td></td>
</tr>
<tr>
<td>Scope (S)</td>
<td></td>
</tr>
<tr>
<td>Trustworthy (T)</td>
<td></td>
</tr>
</tbody>
</table>


© 2006, P. F. Anderson
Sorting Evidence into Types

EVIDENCE-BASED HEALTH CARE
We connect different types of articles using this methodology in order to provide the more reliable information.

SEARCH THE ANSWER FOR YOUR QUESTION
Search in your own language, or in English. As easy as searching in Google.

INFORMATION IN YOUR OWN LANGUAGE
We are different from any other site, since all the information is translated in all languages.
Sorting Evidence into Types

WIDE COVERAGE AND RELIABILITY
Epistemonikos gathers information from multiple sources, using transparent methods.

PROFESSIONAL TEAM
We are supported by multiple experts that help us deliver accurate information always.

RELATED EVIDENCE
Epistemonikos can suggest related evidence with more precision than any other resource.
Sorting Evidence into Types

etching and "enamel decalcification"

Search in Epistemonikos
Effects of sealant and self-etching primer on enamel decalcification. Part II: an in-vivo study.

AUTHORS: Ghiz MA, Ngan P, Kao E, Martin C, Gunel E
JOURNAL: American journal of orthodontics and dentofacial orthopedics: official publication of the American Association of Orthodontists, its constituent societies, and the American Board of Orthodontics
YEAR: 2009
LINKS: PubMed, Publisher Site
This article is included in 1 Systematic Review

Weak evidence suggests higher risk for bracket bonding failure with self-etch primer compared to conventional acid etch over 12 months.

AUTHORS: Elkhaled A, Orabi N
JOURNAL: Evidence-based dentistry
YEAR: 2013
LINKS: PubMed, Publisher Site

Acid etching of human enamel in clinical applications: A systematic review.

AUTHORS: Zhu JJ, Tang AT, Matinlinna JP, Hägg U
JOURNAL: The Journal of prosthetic dentistry
YEAR: 2014
LINKS: PubMed, Publisher Site
New Paradigms: Human Filters

Dentists trust dentists.

- free micro-blogging, remarkably simple
- messages = tweets: < 140 characters
- include links to blogs, articles, web pages, images, videos
- anytime; from computer, smart phone or tablet
New Paradigms: Human Filters

Can anything of professional value ever be said in just 140 characters?

• Web 2.0: undeniably change how we share & distribute information

• 2 more Twitter features:
  – hashtags (#) allow for grouping of related posts
  – Follow:
    • experts in your field
    • medical bloggers
    • medical journalists
    • colleagues
If Michelangelo had Twitter, the Sistine Chapel ceiling would still be white.

(Andy Borowitz)
#cdaANA

- example for hashtags (#) in right column
- Conference for the California Dental Association in Anaheim
- Tweetdeck = Twitter application: left column for own tweets

If Michelangelo had Twitter, the Sistine Chapel ceiling would still be white. (Andy Borowitz)
New Paradigms: Human Filters

Can anything of professional value ever be said in just 140 characters?

• Web 2.0: undeniably change how we share & distribute information

• 2 more Twitter features:
  – hashtags (#) allow for grouping of related posts
  – Follow:
    • experts in your field
    • medical bloggers
    • medical journalists
    • colleagues

*If Michelangelo had Twitter, the Sistine Chapel ceiling would still be white.*

(Andy Borowitz)
Medical futurist, geek medical doctor with PhD in genomics, founder of http://Webicina.com, speaker, blogger, university lecturer, book author, consultant. **37,719 Followers**

Mobile medical app reviews and analysis by Physicians and #mHealth analysts. Founder and Editor-in-Chief: @iltifatMD | Editors: @Misra-Satish, @thomasllewis

Retweet by P.F. Anderson, emerging technologies medical librarian, Ann Arbor, Michigan

Healthcare Communications and Social Media (#hcsm), the first global health care Twitter chat. Sundays at 8pm CT. Moderated by @danamlew. Started Jan 2009.

Retweet by P.F. Anderson, emerging technologies medical librarian, Ann Arbor, Michigan
New Paradigms: Human Filters

Can anything of professional value ever be said in just 140 characters?

• Web 2.0: undeniably change how we share & distribute information

• 2 more Twitter features:
  – hashtags (#) allow for grouping of related posts
  – Follow:
    • experts in your field
    • medical bloggers
    • medical journalists
    • colleagues

 If Michelangelo had Twitter, the Sistine Chapel ceiling would still be white.  

(Andy Borowitz)
SOCIAL MEDIA EXPLAINED

TWITTER I'M EATING A #DONUT

FACEBOOK I LIKE DONUTS

FOURSQUARE THIS IS WHERE I EAT DONUTS

INSTAGRAM HERE'S A VINTAGE PHOTO OF MY DONUT

YOUTUBE HERE I AM EATING A DONUT

LINKED IN MY SKILLS INCLUDE DONUT EATING

PINTEREST HERE'S A DONUT RECIPE

LAST FM NOW LISTENING TO "DONUTS"

G+ I'M A GOOGLE EMPLOYEE WHO EATS DONUTS
Global Societal Struggle

“We are now witnessing a global societal struggle to assure universal delivery of our know-how. We in medicine, however, have been slow to grasp why this is such a struggle, or how the volume of discovery has changed our work and responsibilities.”

Atul Gawande, 2011 commencement address at Harvard Medical School
Barriers to Dissemination
Time, Resources, Tools

Trends

• Longer-term Results on Impact of EBD
  • >70% in 2008; >86% in 2010-2012
    • Quality of patient care
    • My knowledge
    • My treatment decisions
    • Advancement of science of dentistry
    • Continuing Education

• Longer-term Results on Implementation
  • 88% of respondents are implementing EBD/98% in 2010
  • Barriers to implementation
    • Time
    • Resources – can I find an answer to my question?
    • Tools to disseminate EBD
CREATIVE ROUTINES

“In the right hands, it can be a finely calibrated mechanism for taking advantage of limited resources... a solid routine fosters a well-worn groove for one’s mental energies...” - Mason Currey, author of the inspiring book, DAILY RITUALS

Gustave Flaubert
while writing Madame Bovary
C. 1851-1856

Ludwig van Beethoven
C. 1822-1827

Wolfgang Amadeus Mozart
Vienna, c. 1781

Thomas Mann
C. 1943

Sigmund Freud
C. 1910

Immanuel Kant
C. 1794-1804

Maya Angelou
C. 1983
Time

Wolfgang Amadeus Mozart
Vienna, c. 1781

Compose: “I often go on writing until one - and am up again at six”

Courting Constanze

Sigmund Freud
c. 1910

Reading, writing for journals

Supper and card games, walk with wife or daughter

Freud

Compositions & more analytic patients

Sleep

Dressing

Compose

Lessons

Breakfast, trim beard
Barrier: Resources

“What ultimately makes the difference is how well people use technology. We have devoted disastrously little attention to fostering those abilities.”

Atul Gawande: Top athletes and singers have coaches.
Barrier: Tools to Disseminate EBD

Dissemination:

The active and targeted distribution of information and interventions to a specific public health or clinical practice audience via determined channels using planned strategies. The intent is to spread knowledge and the associated evidence-based interventions in order to enhance the adoption and the implementation of the information and/or intervention.
Knowledge alone is insufficient.

Sealants and dental caries

Insight into dentists’ behaviors regarding implementation of clinical practice recommendations

Jean A. O’Donnell, DMD, MSN; Adriana Modesto, DDS, MS, PhD, DMD; Marnie Oakley, DMD; Deborah E. Polk, PhD; Benita Valappil, MPH; Heiko Spallek, DMD, PhD, MSBA

The topic of evidence-based (EB) dentistry has been in the spotlight with regard to the American Dental Association’s (ADA) clinical recommendations for the use of pit-and-fissure sealants in the treatment of noncavitated carious lesions. Tellez and colleagues conducted a study, the results of which showed that less than 40 percent of practicing dentists surveyed followed the ADA’s recommendations to seal noncavitated carious lesions in children, adolescents and adults. The study elicited a strong reaction from readers of The Journal of the American Dental Association. In a guest

... knowledge alone was insufficient to create changes in practice behavior...
Knowledge alone is insufficient.

Sealants and dental caries

Insight into dentists’ behaviors regarding implementation of clinical practice recommendations

Jean A. O’Donnell, DMD, MSN; Adriana Modesto, DDS, MS, PhD, DMD; Marnie Oakley, DMD; Deborah E. Polk, PhD; Benita Valappil, MPH; Heiko Spallek, DMD, PhD, MSBA

The topic of evidence-based (EB) dentistry has been in the spotlight with regard to the American Dental Association’s (ADA) clinical recommendations for the use of pit-and-fissure sealants in the treatment of noncavitated carious lesions. Tellez and colleagues\(^2\) conducted a study, the results of which showed that less than 40 percent of practicing dentists surveyed followed the ADA’s recommendations to seal noncavitated carious lesions in children, adolescents and adults.\(^1\) The study elicited a strong reaction from readers of The Journal of the American Dental Association.\(^3,4\) In a guest

... colleagues were an important source of information ...
Peer influence!

• change in provider behavior through peer influence: Dr. Partha Mukherji

• pilot study supported by NIDCR
  Implementing Research Findings and Evidence-based Interventions into Real-World Dental Practice Settings (1R21DE021494-01)

• next stage: large cluster RCT
  compare the effectiveness of complex, social interventions involving technology-enabled, peer-to-peer coaching

Partha Mukherji DDS, FAGD
Understanding Dissemination

1. Technology to overcome professional isolation

2. Story telling techniques to persuade.
Peer influence!

- story telling for dissemination
- behavior change through peer influence, social norms, peer pressure

1902 by E. Irving Couse, A. N. A.; The Historian (in the public domain) altered by Heiko Spallek
Peer influence!

“Each time, those who espouse only evidence—without narratives about real people—struggle to control the debate. Typically, they lose.”


Narrative vs Evidence-Based Medicine—And, Not Or

Zachary F. Meisel, MD, MPH, MS
Jason Karlawish, MD

The week before the US Preventive Services Task Force (USPSTF) released its recommendations against routine prostate screening for healthy men, celebrity patients including Joe Torre and Rudy Giuliani had already lined up to challenge the population-based recommendations. To promote their position that screening for prostate-specific antigen is lifesaving, these individuals relied on a powerful tool: their own personal narratives. However, the experts whose goal is to disseminate and translate population-based evidence will, in the name of science, shun individual stories. This one-sided use of narrative has played out repeatedly, from the USPSTF recommendations on screening mammography to the US Food and Drug Administration (FDA) labeling hearings on bevacizumab for advanced breast cancer. Each time only evidence—without narratives—guides human behavior. Without narratives to control the debate, patients and families have a difficult time understanding the evidence in the context of their health care, they should demand more from the counter-narrative. The story of a mother who, after exposure to an unvaccinated child with measles, would add persuasive weight in a debate with the counter-narrative mentioned above. These counter-narratives may also be useful when the evidence addresses individual risks as well as effectiveness. The FDA’s decision to remove breast cancer as an approved indication for bevacizumab was based not only on the absence of evidence to support its effectiveness in a general population but also on the relatively high risks of serious individual adverse effects, including death. In such cases, real and personal narratives can be told that embody, with characters and action, the evidence of a risky intervention. The public needs to hear the stories of patients, and their families, who encountered a drug that offered hope but was ultimately ineffective and even dangerous.
Acknowledgement

- Tanja Bekhuis, PhD, MS, MLIS, AHIP
- Jean O'Donnell, DMD
- Julie Frantsve-Hawley, PhD
- Zsuzsa Horvath, PhD
- Partha Mukherji, DDS, FAGD
- Marnie Oakley, DMD
- Rich Oravetz, MS
- Deborah E. Polk, PhD
- Titus Schleyer, DMD, PhD
- Mei Song, PhD
- Thankam Thyvalikakath, MDS, MS, PhD
- Benita Valappil, MPH
- Adriana Modesto Vieira, DDS, MS, PhD
- Robert Weyant, MS, DMD, DrPH
- Amit Acharya, BDS, PhD
- many more…

Q/A or Break?

The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it.
