

# Evidence Based Practice: Proving that what you do makes a Difference in Management of Dental Clinical Practice.

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## About the Author

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## **ABSTRACT**

Clinical dentistry is becoming increasingly complex and our patients more knowledgeable. Evidence-based care is now regarded as the “gold standard” in health care delivery worldwide. The basis of evidence based dentistry is the published reports of research projects. They are, brought together and analyzed systematically in meta analysis, the source for evidence based decisions. Activities in the field of evidence-based dentistry has increased tremendously in the 21<sup>st</sup> century, more and more practitioners are joining the train, more education on the subject is being provided to elucidate the knotty areas and there is increasing advocacy for the emergence of the field into a specialty discipline. Evidence-Based Dentistry (EBD), if endorsed by the dental profession, including the research community, may well-influence the extent to which society values dental research. Hence, dental researchers should understand the precepts of EBD, and should also recognize the challenges it presents to the research community to strengthen the available evidence and improve the processes of summarizing the evidence and translating it into practice This paper examines the concept of evidence-based dentistry (EBD), including some of the barriers and clinical practice guidelines . Moreover, it correlates the relationship between managing clinical practice and published evidence available at the time of data collection across a range of preventive, diagnosis, and treatment procedures

## **KEY WORDS**

Clinical practice; evidence-based dentistry; dentistry; implementation science

## INTRODUCTION

Oral disease is widespread and most people, from children to the elderly, will seek dental care at some point, either for a check-up or for treatment following clinical symptoms. More people are living longer and more will retain most or all of their teeth. Changing diets and lifestyles have important implications for effective dental care management. All of these have important implications for effective dental care management. Dentists have an obligation to provide the most effective treatment available and use the best methods of disease prevention and diagnosis while taking financial cost and their expertise into consideration. In dentistry there are well-established causes of oral disease, and diagnostic methods and treatments that work. There is also bad practice: there may be tests and treatments that are effective but not commonly used and, possibly worse, tests and treatments that despite being ineffective are used. How can we decide what is a cause of disease and what is not, and what is an effective treatment and what is ineffective? Hackshaw et al. (2006)

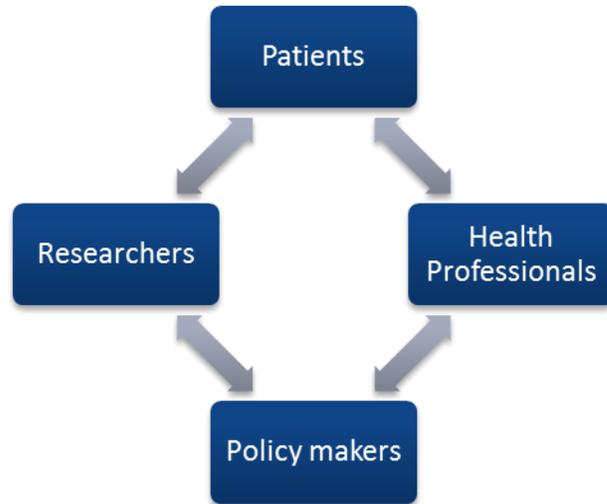
In recent years, dentists who wished to improve or expand their education in dentistry had limited opportunities to access high-quality information and lacked both the proficiency and time to interpret such information when found. Gaining additional information was limited to perusing textbooks, attending continuing education courses, reading journal articles, or making inquiries to respected mentors. All of these forms of learning still have their place today; however, it is my experience that most practitioners, like myself, have a difficult time sorting through the vast quantities of information available and finding sources they can trust. In addition to the immense volume of information available, many dentists have not had significant training with respect to skills designed to critically evaluate the quality of the research they are accessing. Time also becomes a crucial element for the busy practitioner. The staff, business, and clinical practice management aspects of a dentist's life can absorb a considerable amount of time. Consequently, the added time needed to critically evaluate research becomes a barrier to consistent implementation. Because the process of acquiring and evaluating research can be overwhelming, many tend to rely on gaining information the old-fashioned way. This often consists of finding a respected mentor who then teaches the inquiring dentist: "This is how I've done it for 25 years." Certainly, clinical decisions need a certain amount of professional experience, but relying on the clinical experience of others often

lacks the rigors of science.

The practice of dentistry presents many challenges on a daily basis. Keeping up with new materials and techniques, dealing with the numerous demands of running a small business, and meeting a variety of professional obligations, all compete for our time and attention (Sutherland, 2000). As healthcare providers, it is important that physicians and dentists offer the best possible care for their patients. This requires not only a sound educational base but also a good source of current best evidence to support their treatment recommendations (Haron et al. 2012). To do it successfully, certain skills need to be obviously acquired, being the intention of evidence-based dentistry, providing better information for the clinician, improved treatment for the patient, and consequently an increased standing of the profession (Ballini A, Capodiferro S, Toia M, Cantore S, Favia G, De Frenza G, et al. 2012). In many countries, there has been increasing concern about the use of Evidence-Based Practice (EBP) in oral health care (Hannes et al. 2008)

### **What is Evidence Based Dentistry?**

The foundation for evidence based practice was laid by David Sackett who has defined it as "Integrating individual clinical expertise with the best available external clinical evidence from systematic research" (Goldstein, 2002 p.1). Evidence-based dentistry is the integration and interpretation of the available current research evidence, combined with personal experience. It allows dentists, as well as academic researchers, to keep abreast of new developments and to make decisions that should improve clinical practice. It 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, together with the dentist's clinical expertise and the patient's treatment needs and preferences. Clinical research allows us to make decisions about causes of and treatments for disease, while allowing for the natural differences between people. Evidence-based dentistry is founded on clinical research. (Hackshaw, et al. 2006).



Source: Author

Graduates from dental schools are up to date with the best practice in dentistry current at the time they graduate. Some of this knowledge gradually becomes out of date as new information and technology appear. It is important, especially with regards to patient safety, for dentists to be able to keep up to date with developments in diagnosis, prevention and treatment of oral disease, and newly discovered causes of disease. There is an overwhelming amount of evidence that comes from research and policy-making organizations, but there is no one organization that synthesizes and assesses all this evidence. Advances in dentistry are usually first reported in dental journals, and in order to keep up with new research, healthcare professionals need to feel confident that they can read and evaluate dental papers. Keeping abreast of new developments through reading current literature can seem onerous and hard to combine with a heavy clinical workload. Fortunately, having an understanding of how to interpret research results, and some practice in reading the literature in a structured way, can turn the dental literature into a useful and comprehensible practice tool.

The principles and methods of evidence based dentistry give dentists the opportunity to apply relevant research findings to the care of their patients. The key to finding evidence is to start with a focused, well-built clinical question (Sutherland, 2001). Evidence-based oral health care

includes the search for the best evidence, critical evaluation of the evidence, and integration of the evidence with the practitioner's experience and expertise. Therefore, dental educators, dental students, and dental practitioners need to be aware of the uncertainties surrounding scientific evidence, the ways that the results of clinical studies are collected and analyzed, and the importance of unbiased research on which to base clinical decision making (Crawford, et al. 2010).

The need for valid and current information for answering everyday clinical questions is growing. Ironically, the time available to seek the answers seems to be shrinking. In addition, a surprising amount of published research "belongs in the bin" (Sutherland, 2001).

Evidence-based dentistry (EBD) closes the gap between clinical research and real world dental practice and provides dentists with powerful tools to interpret and apply research findings (Iqbal, 2002). In dentistry, the evidence-based movement is at a relatively early stage of development. In addition to collating guidelines on effective care, it is critically important to understand what factors will influence dentists' ability to change their clinical practices to incorporate the evidence. Without an understanding of how dentists change their clinical practices, evidence-based dentistry will achieve little (Mc Glone, et al. 2001). Therefore, it is crucial to implement evidence from research into clinical practice, and by doing this; the concept of EBD can become practically relevant to the dentist (Faggion, et al. 2007).

### **Concept and Goals of Evidence Based Dentistry**

In understanding the concept of EBD, it is helpful to clarify what it is not. It is not a "cookbook" approach to practice. Evidence based dentistry is not a veil to mask the same old, inadequate research. It is disturbing to see lecturers invoke EBD and present the same anecdotal lectures they gave before, with different slide titles. As the profession of dentistry becomes more sophisticated, researchers and lecturers are also forced to grow. Evidence based dentistry does not take the clinical decisions out of clinicians hands and put them into the hands of the literature. In fact, the opposite is true. Evidence based dentistry gives guidelines for the clinician and relies first on clinical expertise.

Evidence based dentistry does not mean that third parties will control dental practices. In fact, educated dentists, understanding the literature, will be able to prevent the misrepresentation of data by commercial interests.

Evidence based dentistry does not mean the clinician need not study basic and dental material sciences. In fact, the opposite is true. To evaluate the research presented, clinicians need a solid background on which to base their evaluations and decisions. Evidence based dentistry does not mean clinicians abandon everything they learned in dental school. It does not force clinicians to go backwards to justify things the profession universally accepts (Goldstein, 2002).

EBD requires the integration of the best evidence with clinical expertise and patient preferences and, therefore, it informs, but never replaces, clinical judgement. Evidence-based health care recognizes the complex environment in which clinical decisions are made and the importance of individual patient circumstances, beliefs, attitudes and values (Browman, 1999). Evidence-based practice is a practical approach to clinical problems. It involves tracking down the best available evidence, assessing its validity and using “rules of evidence” to grade the evidence according to its strength (Sackett, 1993).

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### **Harnessing the Brain Power of Others**

Within the past 10 years there has been an explosion of technologies that now allow dentists to access records and gather and transmit clinical patient care information in real time. Examples of such technology include the following:

- Electronic medical records (ie, Dentrix, EagleSoft)
- Electronic practice management software (ie, Dentrix, EagleSoft)

- Digital radiographs (ie, Dexis, Shick)
- Digital clinical photographs
- Electronic submission of laboratory cases (ie, Invisalign)
- Capturing of electronic signatures for patient forms and consents (ie, ePad)
- Electronic submission of referrals and radiographs to specialists via e-mail
- Secure high-speed Internet connections
- Secure remote Internet access (ie, [www.gotomypc.com](http://www.gotomypc.com) and SSH [secure shell] tunnels)
- Online information back-up services (ie, [www.Dell.com/datasafe](http://www.Dell.com/datasafe))

These advances all allow EBD information to be used at the point of care wherever that may be.

As an example, on any given Saturday a dentist can attend to a patient's toothache from the comfort of his or her couch. The practitioner can log on to the practice's server securely, review the patient's health history, write a prescription in the patient's chart, send a referral and radiographs to the local endodontist via e-mail, treatment plan, and schedule a gold crown.

There are numerous other technological accessories that simplify the quest for EBD such as Podcasts, Pocket PCs, and Smartphones. Several organizations are producing Podcasts that can be downloaded by dentists to media-playing software. These entities such as [www.dentalcast.com](http://www.dentalcast.com) have various topics of interest to dentists such as "Assessing Patients' Caries Risk with Dr Margherita Fontana, cover story from Sept 2006 JADA" and "An

Evidence-Based Approach to Crown and Bridge with Dr. Dean Mersky.’’ Dentists who use Pocket PCs or Smartphones can easily download from their practice management software patient contact information and their upcoming weekly patient schedule. Practitioners employing this technology can not only keep in touch with the business aspect of their practice, but additionally the Journal of Evidence-Based Dental Practice (JEBDP), one of the leading journals on EBD, has recently added a feature that allows abstracts of critical reviews to be sent automatically to a dentist’s Pocket PC or Smartphone.

Many offices now employ a combination of the above capabilities, which is quite conducive to the practice of EBD since they help facilitate the delivery of high-quality and accurate treatment at the point of care. However, dentists who do not use these technologies can still easily apply EBD principles in everyday practice. A simple high-speed Internet connection is the basic portal for the EBD-seeking dentist, regardless of whether that connection is in the office, at home, or at the local public library.

### **Accessing EBD Resources**

EBD sources can be classified as primary or secondary. Primary sources are the studies themselves, such as randomized clinical controlled trials. Secondary sources are the compilation and/or evaluation of primary sources. There are numerous EBD secondary sources and resources such as systematic reviews, critical evaluations, and online tutorials. Since the challenge for the provider with basic knowledge of EBD and limited time is finding simple EBD resources quickly, utilization of these secondary sources is essential. Three of the most uncomplicated, thorough, and economical resources are the following:

- 1) The Journal of Evidence-Based Dental Practice (\$86.00/year  
<http://www.jebdp.com/>)
- 2) American Dental Association section on EBD (free-

<http://www.ada.org/prof/resources/ebd/index.asp>)

3) Trip Database (free- [www.tripdatabase.com/oral](http://www.tripdatabase.com/oral))

The JEBDP contains many useful items such as critical evaluations of recent publications on clinically relevant topics, Cochrane Reviews, and featured articles that often focus on expanding practitioners' knowledge of EBD. The cost for this journal is minimal and, in addition to the paper publication, the subscription also includes free online access to all content, free delivery of JEBDP abstracts and MD consult updates to Pocket PCs and Smartphones, and free e-mail alerts regarding topics of interest.

The ADA has developed and continues to develop an amazing section on EBD with grant support from the National Library of Medicine and the National Institute of Dental and Craniofacial Research (NIDCR). This portion of the ADA's Web site has a glossary of EBD terms, links to additional EBD resources, and systematic reviews arranged by topic. The sources of the systemic reviews include among others the Cochrane Library, the Centre for Reviews and Dissemination, the Journal of the American Dental Association, and other journals. Additionally, the ADA will make copies of journal articles for members.

The Trip Database is an extensive website that will search many databases (ie, DARE, Cochrane) and journals (ie, JEBDP) at once. It allows practitioners to search by topic and limit searches to critical evaluations or systematic reviews. This website also provides links to clinical guidelines developed by various organizations.

The following are three examples of clinical situations generally dentists faced in their practice, how they identified the current evidence on the topic, and how this information was ultimately applied in their practice.

EBD example search: Does subantimicrobial dose doxycycline (SSD) with scaling and root planing result in improved pocket depth reduction compared with scaling and root planing alone?

1. Go to <http://www.jebdp.com/home>
2. Login to your account (must have a subscription to JEBDP)
3. In the search window type in “doxycycline”
4. Access critical evaluation of “Subantimicrobial dose doxycycline improves probing parameters associated with periodontitis”

Result: SDD with scaling and root planing can result in a higher percentage of patients with statistically significant attachment gains and probing depth reductions when compared with scaling and root planing and a placebo. Notice that the level of evidence for this study is “1b.” This means that the study design was of reasonably high quality and that the practitioner can adequately rely on the validity of the study results.

EBD example search: For young children, which fluoride treatment if any is the most effective at preventing caries?

1. Go to [www.ada.org/prof/resources/ebd/index.asp](http://www.ada.org/prof/resources/ebd/index.asp)
2. Search topics by “Fluoride, Topical”
3. Access and assess systematic reviews from organizations such as Cochrane Library (Figure 3), DARE, and National Library for Health
4. Access through ADAWeb site clinical recommendations for fluoride  
<http://www.ada.org/prof/resources/ebd/clinical.asp>

Result: Fluoride varnish is effective at preventing caries in young children at 3- to 6-month intervals and it is the topical fluoride of choice for this age group.

EBD example search: Will fluoride varnish application in the medical setting reduce the caries incident in young children compared with no treatment? Is this approach cost effective when compared with no treatment?

1. Go to [www.tripdatabase.com/oral](http://www.tripdatabase.com/oral) and search by “fluoride varnish medical”
2. Access the Centre for Reviews and Dissemination Web site subcomponent NHS Economic Evaluation Data-base to view “Simulating cost-effectiveness of fluoride varnish during well-child visits for Medicaid-enrolled children”

Result: Fluoride varnish application during well-baby visits delayed caries onset by only 1.52 months and the application of fluoride varnish was associated with an overall cost increase of 10% per child.

### **Awareness of Evidence Based Dentistry among Dentists**

There have been various studies performed to study the awareness of dentists regarding the evidence based dentistry. In a study done in Kuwait it was concluded that the overall awareness of EBD amongst dentists was low, even though more than half of them reported that they generally practice it (Haron, et al. 2012). Similar study carried out among the general dental practitioners currently practicing in the North West of England and it was found that only 29% (60/204) could correctly define the term EBP. When faced with clinical uncertainties 60% (122/204) of general dental practitioners turned to friends and colleagues for help and advice. Eighty one percent of respondents were interested in finding out further information about EBP (165/204) (Iqbal, 2002). Other studies carried out to evaluate Evidence-Based Practice among a group of Malaysian Dental Practitioners and response rate was 50.3 percent (Yusof, 2008).

## **Clinical Practice Guidelines**

Clinical Practice Guidelines (CPGs) are “systematically developed statements to assist practitioners and patients in arriving at decisions on appropriate health care for specific clinical circumstances” (Sutherland, 2000).

Evidence-based clinical practice guidelines (EB-CPGs) are structured and formal, and use rigorous, explicit and reproducible methods to assemble and evaluate the evidence. These guidelines are based on systematic reviews and incorporate values and preferences of patients and practitioners. The process of creating a well-developed EB-CPG includes external review and comments by those who will be using the guidelines - for example, a wide range of clinicians, as well as patients or their representatives (Jadad, 1998).

The development of EB-CPGs in dentistry is in the beginning stages. A review in 1995 of guideline development by various dental organizations and specialties in the United States revealed a lack of systematic analysis of the literature.

Rigorous research findings provide the foundation for many clinical practice guidelines developed to improve care processes and improve patient outcomes. Although additional empirical evidence is needed to guide many areas of dentistry, a substantial amount of evidence already exists to support the use (or non-use) of specific materials, techniques, and/or treatment across a range of preventive, diagnostic, and treatment procedures. These include some of the most common issues faced by general dentists (e.g., caries diagnosis and treatment; deep caries diagnosis and treatment; third molar extraction; restoration diagnosis and treatment).

Unfortunately, not all evidence-based recommendations are adopted in clinical practice settings, reflecting a gap between what we know works (or doesn't work) and what is actually being done. However, focus on a single behavior if any—has attempted to examine the gap between practitioners' clinical practice behavior and published evidence across a range of preventive, treatment and diagnostic behaviors. Thus, the extent to which the gap between

clinical practice behaviors and empirical evidence exists across various preventive, diagnostic, and treatment procedures remains unknown. Assessing practitioners' use of evidence in practice across several preventive, diagnostic and treatment procedures may be a better indicator of their broader use of evidence in practice than their response to a single procedure. Moreover, relatively few studies have focused on identifying practitioner- and organizational-level correlates of use (or non-use) of published evidence in routine practice.

Quantifying the gap between clinical practice behavior and published evidence-based findings—and identifying practitioner- and organizational-level correlates of use (or nonuse) of published evidence—is a critical first-step toward understanding and improving clinical practice behaviors and patient health outcomes.

To address this gap in the literature, the current study correlates between clinical practice and published evidence in dental practices and dental organizations focused on improving the scientific basis for clinical decision-making. The network has a wide representation of practice types, treatment philosophies, and patient populations, including diversity regarding race, ethnicity, geography and rural/urban area of residence of both its practitioners and their patients. Analyses of these characteristics confirm that network dentists have much in common with dentists at large, while also offering substantial diversity in these characteristics.

### **Diffusion of Innovation: Evidence-Based Dentistry**

Dentistry, like other health care fields, is a science-based profession. Research and technologies continually evolve, and it is expected that the corresponding treatment decisions will evolve as well. Change is an anticipated, necessary, and welcomed aspect of any science-based health care profession.

New ideas, technologies, and methods take time to become established. One popular theory developed by Everett Rogers in 1962 is the diffusion of innovations theory (Rogers, 1962). This theory proposes that there are 5 categories of adopters to new ideas or technologies (Table 1). This theory can be applied to understand the adoption of EBD among oral health care workers.

**Table: 1. Diffusion of Innovation**

<b>Category Of Adopter</b>	<b>Definition</b>
Innovators	Create The Concept
Early Adopters	First Embrace The Innovation. These Individuals Are Typically Educated, Critical Thinkers And Thought Leaders In A Community.
Early Majority	Join The Larger Crowd When An Innovation Is Taking Hold In A Community; Heavily Influenced By The Social Aspects Of Change, But Systemic In Decision To Adopt A New Innovation
Late Majority	Skeptical And Traditional By Nature
Laggards	Rely Primarily On Social Contact For Information.
Developed By Everett Rogers In 1962,The Diffusion Of Innovations Theory Defines 5 Categories Of Adopters To New Ideas Or Technologies	

Anecdotal information suggests that EBD is currently embraced by both the innovators and the early adopters, the first 2 categories in the Rogers classification. There seems to be slow but consistent progress among the early and late majorities in adopting this approach to dental and oral health care. Knowledge about EBD, perceived value of EBD, a commitment to apply an EBD approach, and implementing this approach are all likely needed for EBD to be embraced by the majority of practitioners

A key feature of the early and late majority is the social influence in their acceptance of innovation. For these groups in particular, the decision to adopt an innovation depends heavily on the decisions of their peers. They value opinion leaders, typically early adopters themselves, to determine if the innovation is effective and beneficial. Therefore, a social support network for EBD may help encourage colleagues to consider this approach to clinical decision making.

Principles from the Rogers model can be applied to the dental study club as a place where peer group interactions can potentially influence adoption of new ideas. For example, the dental study club offers an informal opportunity for dentists to increase their knowledge and clinical skills (Merijohn, 2005). Study clubs have a high degree of loyalty and lifelong membership, and can vary in size from fewer than 10 to hundreds of members. They may meet several times a year, and can be organized in a variety of formats that include meetings, group discussions, lectures, or forums where dentists treat patients under the supervision of mentors.

The primary advantage of such interactive groups is that it provides for proactive, participatory learning, through critical assessment of current evidence on a diversity of topics, and is more likely to result in knowledge transfer (Merijohn, 2005). Such an in-depth method of learning is more likely to result in a change in practice patterns.

### **Interventions: To Translate Research Findings to Practice**

In order for EBD to become part of decision making in practice, the most current and comprehensive research findings must be translated into practice. There are numerous EBD tools that critique and synthesize existing evidence, including systematic reviews, summaries of systematic reviews, and evidence-based recommendations or guidelines. However, there remains a challenge in implementing the knowledge offered by such resources at the point of care.

Many approaches have been developed and tested to facilitate the implementation of research into practice. The results of these approaches vary considerably (Doumit, 2007). Systematic reviews have concluded that impact of printed educational materials, one of the most common approaches, is minimal (Freemantle, et al. 2000). Audit and feedback, while effective, typically produce small to moderate changes (Jamtvedt, et al. 2006). By comparison, the impact of local opinion leaders were larger and likely to be of practical importance (Thomson O'Brien, et al. 2001) and interactive work-shops, compared to passive didactic courses, can result in moderately large changes in professional practice (Thomson O'Brien, et al. 2001). Programs designed to facilitate the application of science into clinical practice require participants to be highly motivated (Rogers, et al. 2000). These programs also should be specifically designed to

meet participant needs (Rogers, et al. 2000). Others have found that practice-based workshops that included participatory learning approaches and materials targeted specifically toward the needs of the attendees to be preferred and effective (Rogers, et al. 2000).

The use of Champions is one effective approach used by others in the health care field to successfully implement science research to clinical care. Champions are influential individuals who support the transfer of knowledge among their peers (Craven, 2006). Examples presented at the 2006 AHRQ TRIP Conference (Table-2) include the use of Champions to facilitate the implementation of clinical practice guidelines and best practices in a community-based organization, (Hutt, 2006) implementing evidence-based guidelines for treating nursing home-acquired pneumonia, (Hutt, et al. 2006) and implementing practice guidelines on pain management for ulcers among nurses. (Ritchie, 2006) The roles of these Champions include seeking opportunities to promote and support best practices, mentoring others to support knowledge transfer, networking with other health professionals about best practices, being a resource to the local region for knowledge transfer, and facilitating use of guidelines.

<b>Health Care Member</b>	<b>Topic</b>
Victorian Order Of Nurses	Best Practice Guidelines: Reducing Foot Complications In People With Diabetes
State Veterans Home Nursing Staff (Licensed And Aides)	Evidence Based Guidelines For Treating Nursing Home Acquired Pneumonia
Registered Nurses Association Of Ontario Pediatricians	Practice Guidelines On Pain Management For Ulcers
	Immunization Delivery And Current Use Of Regular Immunization Assessments
Veterans Affairs Medical Centres	Evidence- Based Practice Guidelines On Diabetes Management
Community Health Centres	National Diabetes Guidelines

## IMPLICATIONS

Dentists have to decide how to best use information gathered from patients, the literature, colleagues and experts in the field. It also includes: to identify the clinical problem, formulate the clear questions, clarify the relevant outcomes, search for evidence, ignore irrelevant information, interpret the relevant evidence, and decide the appropriate action based on best evidence available. It is essential to use a systematic approach to understand methodology which makes the process easier and approaching the problem logically results in an informed decision about the best way forward. Sufficient quantity and quality of scientific evidence exists to serve as a foundation for guidelines. Programme has to be organized, funded and effectively managed to produce a considerable volume of valid, usable statements about appropriate care for clinically and financially significant health conditions and technologies. Substantial numbers of clinicians, patients and others will have the opportunity, support to read, understand, accept and use these statements in ways that change patterns of clinical practice which lead the health care services in desired directions. Changes applicable will be broad and intense enough to improve health outcomes. Proper guidelines to improve clinical practice will be cost effective. Proper guidelines development should be continually expand to cover new areas so that new rates of increase in health care costs and absolute levels of expenditures will be lower than they would otherwise be. The evidence shows serious deficiencies in the adoption of evidence based in practice. Future implementation strategies must overcome this failure through an understanding of the forces and variables influencing practice and through the use of methods that are practice- and community-based rather than didactic.

Learning involves identifying and evaluating new methods that might improve care and prognosis, determining when to implement those that appear to improve care, and discarding old diagnostics and therapeutics that prove to be unsound (Marinho, et al. 2001). In this information age, it is not uncommon for a patient to rush home from the dentist's office to look up on the Internet or in health reference texts the drug or diagnosis that was provided. Science in the form of statistical evidence is being introduced into everyday language through advertising (Beyers, 1999). However, some studies have demonstrated that EBD, when taught only in the classroom, may have little impact on the attitudes or behaviors of clinical

practitioners. In other words, theoretical knowledge of EBD, obtained without opportunities to practice using an evidence-based approach to patient care decision making, may lead to no changes in dental practice at all. Therefore, it is crucial to implement evidence from research into clinical practice, and by doing this; the concept of EBD can become practically relevant to the dentistry (Faggion, et al. 2007).

Although considerable resources are spent on clinical research, little attention has been paid to the implementation of research evidence into clinical care. EBP may not be a concept that every dentist is familiar with, but increasing consumer pressures and the present economic, social, and political changes, will necessarily demand that evidence based principles are implemented (Iqbal, et al. 2002)

The translation of research into practice assumes that clinically relevant evidence is available. Unfortunately, in light of the billions of dollars invested in dental research during the last five decades in Europe and the US, the dental research community has paid relatively little attention to clinical aspects of care. Consequently, and contrary to the situation in medicine, there are relatively few randomized controlled trials and other outcomes oriented studies in dentistry that have evaluated clinically relevant interventions. For example, there are no clinical trials that have compared the outcomes of different methods of caries diagnosis using relevant outcome measures. Also, no outcome studies are available for disease-based management of dental caries, periodontal diseases, or facial pain (Dickersin, et. al. 1998).

The evidence needed for evidence-based dentistry must include a broader range of outcomes, including those considered important by patients. For example, a classic definition of appropriateness indicates that treatment is deemed appropriate when the expected health benefit exceeds the expected negative consequences by a sufficiently wide margin that the treatment is worth doing (Bader, et al. 1999).

Evidence-based dentistry does offer the opportunity for the practice of dentistry to enter a new era, it is worth recalling an old maxim— “the trouble with opportunity is it always comes disguised as hard work.” Educators have an important role to play in providing communication

skills to aid decision making, addressing the technical dimensions of dentistry, promoting lifelong learning, and closing the gap between academics and general dentists in order to create mutual understanding. The ultimate goal would be assisting dental students in learning the skills to practice evidence-based dentistry so that they can provide their future patients with the best clinical evidence and judgment for optimal and cost-effective dental care. There is, therefore, a need to apprise current practitioners on the new method of thinking. Dentistry needs to make strides to keep pace with the prevailing paradigm of evidence-based care. There is a strong “need for the science behind our treatment decisions”

## **EVIDENCE BASED DENTAL PRACTICE ADVANTAGE**

### **YOU**

- Gained improved clinical decision making ability
- Achieve greater confidence in treatment planning
- More opportunity to provide treatment choices selected for minimizing risks of harm and maximum treatment safety
- Greater satisfaction derived from creating customized treatment plans based on the powerful combinations of stronger scientific evidence, clinical judgement and experience, as well as patient preferences and value
- More peace of mind that comes from doing right thing

Increased day to day enjoyment with a happier team motivated by working to a higher standard that puts the patient first in the dental care processes

### **YOUR PATIENTS**

- Most trust and confidence in their doctor and his or her own practice
- Greater incentive to invest in quality oral health care
- Increased pride from being a patient of a community thought leader and distinctive practice

### **YOUR DENTAL TEAM AND PRACTICE**

- Increased staff confidence ,pride, trust and personal satisfaction
- Enhanced recognition in the community and with peers as a thought leader practice

- Greater opportunity to conserve practice financial resources by establishing wiser decisions in product and equipment selection

Source: Merigohn et al. Clinical Decision Support Chairside Tools for evidence-based dental practice. *Journal of Evidence Based Dent Practice*. 2008; 8: 119.

The practice of evidence-based dentistry is relatively straightforward but requires an ordered approach. Dentists have to elicit, sift and decide how to best use information gathered from patients, the literature, colleagues and experts in the field. Some signs and symptoms may be unexplainable, some may be difficult to treat or the patient may simply wish to discuss a treatment plan that has been recommended, but about which they are uncertain. Therefore, it is essential to use a systematic approach when practicing evidence based dentistry. Understanding methodology makes the process easier and approaching the problem logically results in an informed decision about the best way forward. Practicing evidence-based dentistry enhances patient safety and well-being.

### **Acknowledgement:**

I express my warm thanks to Miss Diti Shah for her support and guidance throughout the research.

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