Evidence-based dentistry — Our developing paradigm

As the debate over evidence-based dentistry (EBD) has simmered during the past decade, this concept has proven to be a huge target. Too often, the debate is turned into a complicated philosophical argument obscuring how straightforward the application of EBD really is. A paper in the September 2010 issue of the International Journal of Evidence-based Healthcare suggests that evidence-based healthcare can be “fascist” and authoritarian. Clearly, it has become too easy to make negative comments about EBD, and the more appropriate and evolutionary evidence-based practice (EBP) paradigm, which dentistry will eventually follow.

The genesis of this editorial was a number of recent conversations with students as well as some of today’s leading dental specialists. Their impression of EBD, it seems, is that it rejects any evidence outside randomized control trials (which is untrue) and that the Cochrane Library is the chief architect of the EBD project (also untrue). Their main argument against EBD is: “…it takes all judgment and creativity out of the patient care process, turning dentists into soul-less, uncaring automatons”.

Paradigmatically speaking, such a perception is not unique to dentistry. More than a decade ago, the authors of an editorial published in British Medical Journal also felt compelled to focus on explaining what evidence-based medicine is and is not. BMJ 1996;312:(71)

The authors noted that the following: “evidence based medicine is not ‘cookbook’ medicine. Because it requires a bottom up approach that integrates the best external evidence with individual clinical expertise and patients’ choice, it cannot result in slavish, cookbook approaches to individual patient care. External clinical evidence can inform, but can never replace, individual clinical expertise, and it is this expertise that decides whether the external evidence applies to the individual patient at all and, if so, how it should be integrated into a clinical decision. Similarly, any external guideline must be integrated with individual clinical expertise in deciding whether and how it matches the patient’s clinical state, predicament, and preferences, and thus whether it should be applied. Clinicians who fear top down cookbooks will find the advocates of evidence based medicine joining them at the barricades”.

In other words, EBP is not some formula done by the numbers without foresight or empathy. As it exists today, EBD amounts to scientifically examining and evaluating what you are doing and melding that information with your own experience and judgment. In some instances, there may be no library of valid clinical research or any guidelines developed by a chosen group of specialists. But when such information exists it should be carefully considered, e.g. Reference Manual v32: n06, May 2010, AAPD. The objective is to acquire as much evidence and knowledge as possible before you reach an informed professional opinion that is legitimate and prudent.

Evidence-based medicine, which got its start in the 1990s, is the foundation for dentistry’s counterpart, yet medicine’s examples cannot be seamlessly transferred to our profession. Medicine has a far broader literature base and a more thorough study of a greater number of acute and chronic diseases. It also has a global reservoir of knowledge produced during an age when ethics and human subject committees were not as restrictive, which meant investigators could frame more definitive clinical situations.

Medicine’s cost-prohibitive, numerous and extensive clinical trials found support from industry through a mutuality of interests. Dentistry is not without its evidence-based global success stories. Water fluoridation and fluoride dentifrice effectiveness are good, if uncommon, examples.

Dental interventions at the core of our practices, those involving caries and periodontal disease, do not lend themselves to convenient, short-term physiologic end points. Outcomes of clinical interventions in medicine seem easier to measure with multiple, obvious and relatively definitive ways to determine cause and effect, e.g. body temperature, blood pressure, blood chemistry.

Much focus in dentistry is on chronic inflammatory disease and on issues dealing with the growth and development aspects of orthodontic treatment. Our multifactorial
interventions are not measured easily, as would be the use of a particular antibiotic regime against a disease state such as typhoid.

Today our profession is focusing more intently on making measurements of clinical conditions that are replicable. A global group of noted cariologists gathered together under the aegis of the International Caries Detection and Assessment System Foundation. ICDAS, as it has to be known, is encouraging researchers and clinicians around the world to adapt a visual standard that enables them to record the stage of caries development before intervention. When adopted universally, this standard would lead to replicable, measurable results of therapies such as topical fluoride treatments on early enamel lesions and indirect pulp capping on deep caries.

The gap between science discovery and clinical application is as wide as ever. To provide the best care possible, today’s clinician needs to remain current and have a strong understanding of the scientific method. The concepts of EBD help serve that process, while our collective judgment and experience continues to help guide our practices.

**Stephen J. Moss**
Emeritus New York University College of Dentistry,
Past President, American Academy of Pediatric Dentistry
E-mail: healthatwork@ggc.scot.nhs.uk

---

**Announcement**

**“QUICK RESPONSE CODE” LINK FOR FULL TEXT ARTICLES**

The journal issue has a unique new feature for reaching to the journal’s website without typing a single letter. Each article on its first page has a “Quick Response Code”. Using any mobile or other hand-held device with camera and GPRS/other internet source, one can reach to the full text of that particular article on the journal’s website. Start a QR-code reading software (see list of free applications from http://tinyurl.com/yzh2tc) and point the camera to the QR-code printed in the journal. It will automatically take you to the HTML full text of that article. One can also use a desktop or laptop with web camera for similar functionality. See http://tinyurl.com/2bw7fn3 or http://tinyurl.com/3ysr3me for the free applications.