GUEST EDITORIAL

The Affordable Care Act and evidence–based care

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The goal of the new Affordable Care Act is to improve the health of all Americans quantitatively.[1] This requirement for empirical evidence is a significant evolution from intuition-based care, to experience-based care, to evidence-based care.

The intuition, experience and now evidence on which we base our care are simply steps on the evidence pyramid (Figure[2]). This pyramid distills the historical evolution of treatments from 1550 BCE, through Sir Francis Bacon's scientific method, to the current concepts of evidence-based care.[3]

In this pyramid, the higher the level of evidence, the more likely the evidence is to predict what would occur in one's practice (that is, being free from bias and demonstrating cause and effect). Conversely, the lower the level of evidence, the less likely the evidence is to predict what would occur in one's practice. In other words, a higher level of evidence trumps a lower level of evidence.

False dichotomies of experience-based and evidence-based care are common. Glick and Meyer's[4] recent publication focusing on hand hygiene and dental restorative material selection highlights the challenge clinicians now face.

In 1847, Semmelweis found that the incidence of puerperal fever could be reduced dramatically by means of hand washing.[5] Yet, because compliance still is low 150 years later, the Centers for Disease Control and Prevention[5] and the Joint Commission[6] found it necessary to publish hand-hygiene guidelines and methods for implementation and assessment. In other words, evidence is far from nonexistent; instead, it often is overwhelming but underused.

Dental restorative material selection is clearly within the clinician's judgment and experience. Yet it is a moving target because of its rapid evolution. Importantly, and relevant to implementing the current best evidence, there are systematic reviews (and comparisons of these reviews) that offer sound analysis and comparisons of the primary and surrogate outcome variables in multiple languages (for example, see the MI Compendium of Systematic Reviews at "www.mi-compendium.org/"). Thus, in many cases, clinicians (and payers) have access to, and can make use of, the current best evidence.

With the evolution of the information age, the evidence-based care age comes with significant conflicts, rewards and risks.

Iconoclasts and traditionalists may dismiss evidence-based care with one or both of two thoughts:

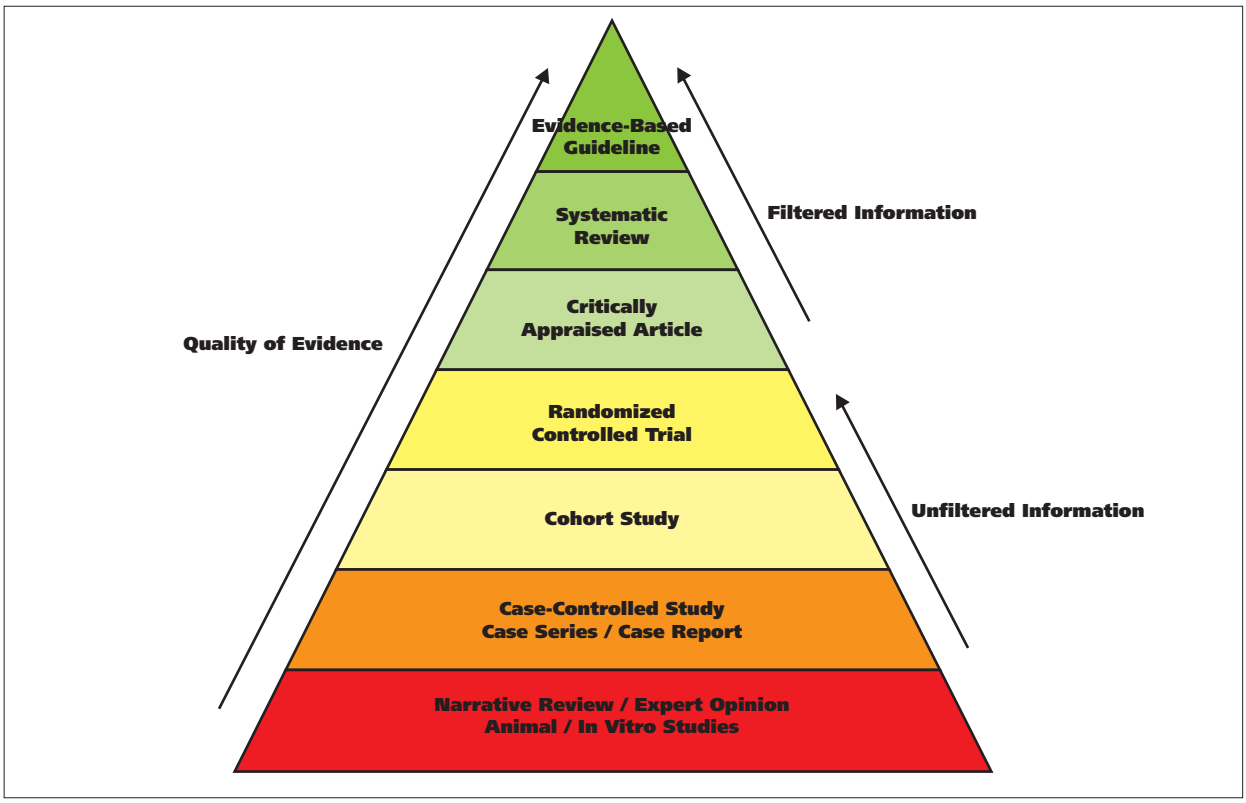

Figure. The evidence pyramid displays the quality of evidence according to type of study. "Quality" refers to the likelihood of predicting what would occur in one's own practice (and the least probability of bias). Guidelines explicitly based on this evidence pyramid offer clinicians a simplified mechanism for obtaining and potentially using the knowledge identified in this pyramid. Conversely, the lowest level of evidence, with the least likelihood of predicting what would occur in one's practice (and the highest probability of bias), can provide useful background information (such as laboratory and animal studies, cross-sectional epidemiologic studies, and expert opinion or narrative reviews). "Filtered information" is so-called secondary research. These reports systematically search for, critically appraise, distill and present the results of primary research, called here "unfiltered information." Adapted from Harvey Cushing/John Hay Whitney Medical Library, Yale University.[2]

- It is too technically difficult to implement and cannot be implemented perfectly. (The converse also is true: perfection is the enemy of good.)
- All the evidence is not in, and even if it were, it still would not be definitive. (This has been true throughout history and will continue to be true.)

Some of the rewards may offset these issues. Dentists now have ready access to reliable, high-quality distilled information. Evidence-based guidelines are available from the American Dental Association (regarding topical fluoride,[7] sealants[8] and oral cancer screening,[9] among other topics), the Canadian Dental Association (regarding acute apical abscess[10]); National Institute of Clinical Excellence (regarding recall visits[11] and third-molar extractions[12]) and the Scottish Intercollegiate Guideline Network (regarding caries prevention and treatment for children[13] and third-molar extractions[14]).

When evidence-based guidelines are not yet available, other Web sites can provide synopses of systematic reviews (such as "www.ebd.ada.org"); synopses of systematic reviews of dental materials (such as "www.mi-compendium.org/"); or questions and answers to clinical questions (such as "www.EviDentista.org"). And still other Web sites provide evidence-based search engines (such as "www.evidents.org") and referrals (such as "www.cebd.org") to help users find original unfiltered information when they cannot locate filtered information.

Conversely, for those who routinely seek the unexpurgated evidence, there are the Cochrane Reviews, with some 100 systematic reviews ("www.ohg.cochrane.org/index.html"). For those who might seek to verify the available information, there are textbooks (such as Richards and colleagues[15]) and training courses (such as workshops offered by the American Dental Association/Forsyth Institute ["www.ada.org/