

## Reducing the Variability of Treatment Outcomes

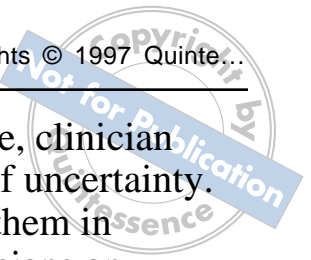
Michael G. Newman, DDS, Section Editor

Implant treatment has become one of the most valuable, yet demanding, areas of dentistry. Variability of treatment outcomes is relatively low, but it is in everyone's best interest to reduce the variation even more. The take-home message is simple: use unbiased high-quality information to guide clinical decision-making. Cast aside anecdotal and uncontrolled data, since it will ultimately lead you astray, no matter how enthusiastic or charismatic the messenger is who tells the story.

In the last 5 years, there have been many clinical, technologic, and biologic advances associated with implant treatment. These achievements have permitted practitioners to continue the impressive track record of clinical service to patients. The widespread success and acceptance of implant-associated services has been made possible because of the systematic incorporation of strong, well-documented scientific and clinical evidence into every aspect of the field. Refined clinical judgment and accumulation of personal experience almost always result in a dramatic increase in the quality of care. Reports of dramatic clinical and lifestyle results has spread like wildfire in the lay press, and as a result, patient expectations have similarly become more demanding (and appreciative).

Despite implants being one of the most documented and sought-after dental treatments in recent history, insurance coverage for implant procedures has evolved very slowly. By focusing on reducing the variation of treatment results from one practitioner to the other, coverage by payers will improve. Cost-benefit and cost-effectiveness calculations have a better chance of demonstrating real value and improved health. Better and more consistent outcomes translate into strong competition, with other procedures competing for limited resources.

As carriers and translators of health information, dentists have always endeavored to be advocates for their patients' best interests. In this role, the dentist seeks to determine which procedures will provide patients the maximum benefits within their treatment plan according to personal preferences, availability of resources, and the clinician's own personal experience. While the preceding statement seems sensible, it is "easier said than done." The reason is that implant treatment is variably successful, despite its carefully controlled early beginnings. The decrease in predictability between dentists performing the procedures is similar to other protocol-driven procedures that have become widely practiced in dentistry and medicine. The more people performing the procedures, the more likely there will be increased variability. To the patient, increased variability is translated to mean decreased predictability. When this occurs, the uncertainty about the value of the treatment is less definitive.



It is well known that patient selection, degree of clinician experience, clinician judgment, and unknown patient factors contribute to the actual degree of uncertainty. What is new is the explicit use of “hard data” by *practitioners* to assist them in making treatment recommendations. Information access has given clinicians an incredibly powerful tool for improvement. New information technologies are online to assist clinicians in gathering relevant information. For example, our JOMI is available in CD-ROM, and our publisher will soon have Internet accessibility.

With data, a robust and unbiased rationale for treatment can be more easily derived, and uncertainty can be reduced. Reduced uncertainty improves the predictability of outcomes, maximizes resources, encourages compliance, stimulates research, promotes better commercial product development, and reduces the variation in treatment outcomes. At a time when the payers, governments, and businesses are trying to maximize the benefit of their health care finances, they are also becoming more dependent on acceptable evidence to justify their decisions for determining the acceptability of new treatments.

The **evidence-based** (EB) approach is a philosophical framework and rigorous methodology for gathering and evaluating all information about a particular clinical situation requiring decision-making. The EB approach is starting to “catch on” in dentistry. Published articles, training programs, and international workshops reveal use of the EB approach as one of the methods for addressing the complex challenge of sorting through the mountains of published material. The EB is the core “operating system” that facilitates clinical decision-making and empowers individual practitioners and patients to select from among treatment alternatives best suited for their individual circumstances. Since the EB approach is a system that is used to process acquired data, it can be used by the clinician to ensure that the relevant information is known at the time that diagnosis, treatment, and prognosis decisions are made. The EB approach is one good way to organize the task of learning new and necessary information. Without some systematic methodology for sifting through the mountains of reports, it is doubtful that the take-home messages would be unbiased.

After gathering and evaluating the evidence, the clinician is armed with the facts and figures to help make treatment recommendations for the patient to consider. Sometimes the use of unbiased methods will place procedures unfamiliar to the dentist at the top of the recommendation list. In such a situation, the dentist will either need to learn the new technique or refer to an experienced colleague. Examples include surgical regeneration procedures or the use of computerized axial tomographic scans.

By keeping up to date in an unbiased and systematic manner, the only minor variability in success rates of specific procedures should be attributable to clinical judgment, clinician experience, or known patient differences. Better success rates

will translate into more predictable and payer-covered options for patients.

