The study reported here was supported by NIH Grant DE 09883. The authors acknowledge the major contribution made to this study by Douglas Vayda and Robert Weyant and the University of Pittsburgh Orthodontic Department.

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References

1. Institute of Medicine: Dental Education at the Crossroads. Washington, DC: National Academy Press, 1995.
2. Vig PS, Vig KD: Decision analysis to optimize the outcomes for Class II Division 1 orthodontic treatment. Sem Orthod 1:139–48, 1995.
3. Vig PS, Vig K, Vayda D, Weyant R: Cost comparisons and utilities for mixed and permanent dentition orthodontics. J Dent Res 74:13 [ABSTR], 1995.
4. Richmond S, Shaw WC, O'Brien KD, Buchanan IB, Jones R, Stephens CD, Roberts CT, Andrews M: The development of the PAR (Peer Assessment Rating) index: reliability and validity. Eur J Orthod 14:125–39, 1992.
5. Shaw WC, Richmond S, O'Brien KD: The use of occlusal indices: a European perspective. Am J Orthod Dentofacial Orthop 107:1–10, 1995.
6. DeGuzman L, Bahiraei D, Vig KW, Vig PS, Weyant RJ, O'Brien: The validation of the Peer Assessment Rating index for malocclusion severity and treatment difficulty. Am J Orthod Dentofacial Orthop 107:172–76, 1995.
7. American Dental Association: The 1993 Survey of Dental Practice-Specialists in Private Practice, April 1995, Chicago, IL.

Pediatric dental treatment outcomes: the importance of multiple perspectives

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Edelstein,[1] Vig et al.,[2] and White[3] have highlighted the importance of outcomes assessment in pediatric dentistry, and called for further development of pediatric dental outcome measures. Although similar views are commonly expressed within the health services research and health policy communities, outcomes research and assessment have not attracted broad levels of support within the dental profession. Many practitioners continue to view outcomes measurement and assessment as burdensome—and a threat to professional judgment. However, as Seale[4] has pointed out, data derived from outcomes research and assessments are becoming increasingly valuable, if not essential, in situations where pediatric dentists and other health professionals are called upon to defend treatment decisions and substantiate treatment recommendations.

Enhancing the quantity and quality of available outcomes measures is an important prerequisite to developing improved outcomes assessment activities that will further the scientific basis of clinical practice and quality patient care. Outcomes measurement as an isolated activity, however, is of limited value. In order for outcomes measurement to be meaningful and allow us to better understand those factors that influence outcomes, direct measures or indirect indicators of outcomes must be linked to measures of structural elements or processes of care. Fundamental to this emphasis on structure-process-outcome linkages is the premise that good structure increases the likelihood of, but does not guarantee, good processes and that good processes in turn increase the likelihood of, but do not guarantee, good outcomes.[5, 6] This more comprehensive approach provides a rationale for gathering information on outcomes that practitioners and policy makers can readily appreciate.

Because outcomes are influenced by a variety of factors over which practitioners frequently have limited control, such as patients' lifestyles, presenting disease status, inherent resistance to disease, and compliance with professional recommendations, outcomes measures also need to be adjusted for factors known to influence outcomes. Appropriate risk adjustments not only increase the validity of outcomes assessments, but also help overcome practitioners' concerns about being judged unfairly because of the baseline characteristics and behaviors of the patients they treat.

Much has been made of the relative paucity of outcome measures in health care in general, and in dentistry in particular. While few would argue with that concern, we also should not overlook the fact that countless data-collection opportunities on important aspects of care that could be used to examine treatment processes and outcomes are missed because of the primitive state of most existing clinical information systems. Were efficient systems such as computer-based patient records widely available, practitioners could readily retrieve information linking patient conditions, treatment choices, and patterns of care to selected outcomes that are of interest to practitioners and patients alike. Ongoing, systematic data collection of this nature is essential to understanding what works best under different circumstances for which patients, as well as to meaningful quality improvement.

Multiple perspectives, multiple strategies for improving quality

Practitioners and patients frequently share common goals such as favorable clinical outcomes, but also frequently have different perspectives about what constitutes good health care and desirable health care outcomes. Practitioners often consider technical aspects of care to be paramount and believe that patients care more about amenities and factors that, in practitioners' opinions, "have nothing to do with quality". Patients, on the other hand, often express concern that practitioners spend too little time listening to their concerns or explaining conditions, treatment options, and associated costs.

Both parties value good outcomes. But as Vig et al.[2] point out, few treatments produce only one outcome; furthermore, different people place different values on different outcomes. Thus, a critical prerequisite to providing quality health care to diverse populations of children and parents is establishing which outcomes are of greatest value to the various parties involved, and which outcomes are most likely to be achieved using different treatment approaches. These and other recognized differences in perspectives among practitioners and patients and their families underscore the importance of basing outcomes assessments on multiple data sources.

The two most common sources of information for outcomes assessments are data generated as part of the patient care process and assessments provided by patients. Both types of information have been used, often in tandem, to assess and improve health care quality. Information obtained on indicators linking structural elements or processes of care to clinical outcomes can be used to increase knowledge of what works (effectiveness), and helps to define what are appropriate treatment options for different individuals under different circumstances. Information obtained from patient assessments—either in the form of ratings or reports of what practitioners did or did not do during the course of treatment—can increase knowledge about the care deemed to be acceptable by patients and professional peers. Both can lead to better decisions, and ultimately to more desirable outcomes.

Responding to demands for greater accountability

Growing demands for accountability on the part of health care professionals have been duly noted in both the lay media and professional literature. Although pediatric dentistry has not received the degree of attention that other more costly health care sectors have experienced, common pediatric dental practices are not immune to scrutiny and challenge. Procedures that have long been staples of "routine pediatric dental practice" (e.g., use of stainless-steel crowns for multisurface restorations in primary teeth, and use of sedation or general anesthesia as an adjunct to restorative treatment) have been questioned as to the evidence of their efficacy or cost effectiveness.[4] In some cases (e.g., rubber cup prophylaxis and oral hygiene counseling), evidence concerning outcomes has been judged to be inadequate to justify their being recommended on a routine basis.[7] The future of pediatric dental practice will undoubtedly be shaped to an even greater degree by expectations for greater accountability, including demonstration of desired outcomes produced in an efficient manner. If pediatric dentists are to retain their preeminence as advocates for children's oral health, it is incumbent upon our specialty to participate actively in the development of evidence that substantiates what constitutes the most appropriate care for children. Developing better outcomes measures and data collection mechanisms to capture information from routine patient care processes is a critical first step.

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References

1. Edelstein BL: How outcomes and evidence can strengthen the role of the pediatric dentist. Pediatr Dent 20:211–13, 1998.
2. Vig PS, Griffen AL, Vig KWL: Outcomes and the scientific basis of clinical care. Pediatr Dent 20:215–18, 1998.
3. White BA: Oral health outcomes and evidence-based care. Pediatr Dent 20:213–15, 1998.
4. Seale NS: The scientific basis for treatment and the Texas Medicaid experience. Pediatr Dent 19:138–40, 1997.
5. Donabedian A: Quality assessment and assurance: unity of purpose, diversity of means. Inquiry 25:173–92, 1988.
6. Institute of Medicine (IOM): Concepts of assessing, assuring and improving quality. In: Lohr K (ed), Medicare: a strategy for quality assurance: volume 1. Washington DC, National Academy Press, 1990:45-68.
7. U.S. Preventive Services Task Force. Guide to Clinical Preventive Services, 2nd Edition—Chapter 61: Counseling to Prevent Dental and Periodontal Disease. Office of Disease Prevention and Health Promotion, U.S. Department of Health and Human Services, 1996.