Journal of the American College of Dentists

Fall 1998 Volume 65 Number 3



Ethics Summit I

Journal of the American College of Dentists

A Publication Presenting Ideas, Advancements, and Opinions in Dentistry

The Journal of the American College of Dentists (ISSN 0002-7979) is published quarterly by the American College of Dentists, Inc., 839 Quince Orchard Blvd., Suite J, Gaithersburg, MD 20878-1614. Periodicals postage paid at Gaithersburg, MD. Copyright 1998 by the American College of Dentists, Inc.

Postmaster: Send address changes to: Managing Editor

Journal of the American College of Dentists 839 Quince Orchard Blvd., Suite J Gaithersburg, MD 20878-1614.

The 1998 subscription rate for members of the American College of Dentists is \$30 included in the annual membership dues. The 1998 subscription rate for nonmembers in the U.S., Canada and Mexico is \$40. All other countries are \$50. Foreign optional air mail service is an additional \$10. Single copy orders: \$10.

All claims for undelivered/not received issues must be made within 90 (ninety) days. If claim is made after this time period, it will not be honored.

While every effort is made by the publishers and Editorial Board to see that no inaccurate or misleading opinions or statements appear in the *Journal*, they wish to make it clear that the opinions expressed in the articles, correspondence, etc. herein are the responsibility of the contributor. Accordingly, the publishers and the Editorial Board and their respective employees and officers accept no liability whatsoever for the consequences of any such inaccurate or misleading opinion or statement.

For bibliographic references, the *Journal* is abbreviated J Am Coll Dent and should be followed by the year, volume, number, and page. The reference for this issue is J Am Coll Dent 1998;65(3):1-48.



Publication Member of the American Association of Dental Editors

Mission

HE JOURNAL OF THE AMERICAN COLLEGE OF DENTISTS shall identify and place before the Fellows, the profession, and other parties of interest those issues that affect dentistry and oral health. All readers should be challenged by the *Journal* to remain informed, inquire actively, and participate in the formulation of public policy and personal leadership to advance the purposes and objectives of the College. The *Journal* is not a political vehicle and does not intentionally promote specific views at the expense of others. The views and opinions expressed herein do not necessarily represent those of the American College of Dentists or its Fellows.

Objectives of the American College of Dentists

HE AMERICAN COLLEGE OF DENTISTS, in order to promote the highest ideals in health care, advance the standards and efficiency of dentistry, develop good human relations and understanding, and extend the benefits of dental health to the greatest number, declares and adopts the following principles and ideals as ways and means for the attainment of these goals.

- A. To urge the extension and improvement of measures for the control and prevention of oral disorders;
- **B.** To encourage qualified persons to consider a career in dentistry so that dental health services will be available to all and to urge broad preparation for such a career at all educational levels;
- C. To encourage graduate studies and continuing educational efforts by dentists and auxiliaries;
- D. To encourage, stimulate and promote research;
- E. To improve the public understanding and appreciation of oral health service and its importance to the optimum health of the patient;
- F. To encourage the free exchange of ideas and experiences in the interest of better service to the patient;
- G. To cooperate with other groups for the advancement of interprofessional relationships in the interest of the public;
- H. To make visible to professional persons the extent of their responsibilities to the community as well as to the field of health service and to urge the acceptance of them;
- I. To encourage individuals to further these objectives, and to recognize meritorious achievements and the potentials for contributions to dental science, art, education, literature, human relations or other areas which contribute to human welfare—by conferring Fellowship in the College on those persons properly selected for such honor.

Editor David W. Chambers, EdM, MBA, PhD

Managing Editor Stephen A. Ralls, DDS, EdD, MSD

Editorial Board Kathryn A. Atchison, DDS, MPH Muriel J. Bebeau, MA, PhD Paul S. Casamassimo, DDS, MS Stephen B. Corbin, DDS, MPH Eric K. Curtis, DDS John P. Howe III, MD Marjorie K. Jeffcoat, DDS, PhD James E. Kennedy, DDS, MS William R. Maas, DDS, MPH, MS Robert E. Mecklenburg, DDS, MPH Lawrence H. Meskin, DDS, MSD, MPH, PhD Edward S. Nacht, DDS Nikolaj M. Petrovic, CAE Jeanne C. Sinkford, DDS, PhD Charles F. Sumner III, DDS, JD

Publications Staff Robyn L. Hulvey, Production Manager

Correspondence relating to the Journal should be addressed to the Editor. American College of Dentists, 839 Quince Orchard Blvd., Suite J Gaithersburg, MD 20878-1614

The business office of the Journal of the American College of Dentists can be reached by:

Phone: (301) 977-3223 Fax: (301) 977-3330

Officers

Edward C. McNulty, President Alston J. McCaslin V, President-elect Robert T. Ragan, Vice President Richard E. Bradley, Treasurer Charles V. Farrell, Past President

Regents

Roger W. Triffshauser, Regency 1 Laurence E. Johns, Regency 2 Robert J. Shankle, Regency 3 B. Charles Kerkhove, Jr., Regency 4 John I. Haynes, Regency 5 Robert B. Alley, Regency 5 David H. Werking, Regency 7 Kenneth E. Follmar, Regency 8

Ethics Summit I

- 5 Codes and Character: The Pillars of Professional EthicsNuala P. Kenny, MD, FRCP(C)
- 9 Ethics Summit I: Assembling the Ethical CommunityDavid W. Chambers, EdM, MDA, PhD, FACD
- 12 Role of Codes of Ethics in Oral Health CareThomas K. Hasegawa, Jr., DDS, FACD; and Jos V. M. Welie, JD, PhD
- 15 Conflicting Values in Oral Health CareDavid T. Ozar, PhD, and Jessica Love
- 19 Response to Unethical Behavior in Oral Health CareBruce Peltier, PhD
- 24 Defining the Ethical Organization in Oral Health CareDonald Patthoff, DDS, FACD

Manuscripts

- 27 Selection of Restorative Materials, Reasons for Replacement, and Longevity of Restorations in FloridaIvar A. Mjör, BDS, MSD, MS, DR ODONT; and Jacquelyn E. Moorhead, BS, MS
- 36 An Investigation of Dental Student ValuesJane P. Casada, DMD; David O. Willis, DMD, MBA; Janice M. Butters, RDH, MPH, EdD



FROM THE EDITOR

Research for Practitioners or Research for Researchers?

nd now for a few silly questions: "Is it hotter in Florida or during the summer?" "Does this new dress look good on me, DEAR?" "Have you been watching your diet?" "Do you have statistically significant results from a randomized controlled trial showing that this new technique is better than one no one would use anyway?" "Is there clinical evidence showing that this restorative material will last longer in patients' mouths than it will be on the market?"

These questions have two things in common. First they are all dichotomous: the only answers are yes and no. Since the world is not dichotomous (at least not uniquely so since any datum could be yes for one question and no for another) their meaning is largely prefigured by the questioner. Anyone who has ever given expert testimony knows the problem here. (I am pleading for sympathy at this point having given expert testimony as a statistician.) The second characteristic common among these questions is that they don't produce meaningful answers. The middle three questions are leadingthey ask for confirmation of a preformed opinion rather than a description of reality. The first and last questions are simply nonsense. The answers to these

questions are hard to use even when the response is an unequivocal yes or no.

The rules of research have been developed by researchers, and they primarily serve researchers' needs. If practitioners had made the rules, they might look something different. Here are some speculations about what the rules would look like if practitioners had been involved in the process.

Descriptions Not Decisions: Dentists want information on which they can base clinically sound decisions; they are generally less interested in the decision researchers have made. The reason for this is that researchers have been taught to frame a null hypothesis, a comparison between the results of contrived condisystem upon which research is based has no way of proving that something is true. It can only establish probabilities that something is false. Everyone who has ever taken a research design course has struggled with a problem something like this: Results that fail to support a hypothesis that an individual is married cannot be used to show that the individual is a bachelor. All that can be said is, we lack conclusive information to the contrary. (And besides, the person in question may be a women.)

The root of the problem is that researchers have been forced into the business of disproving statements about the world. The stock-in-trade of researchers is probability estimates of statements of

The rules of research have been developed by researchers, and they primarily serve researchers' needs.

tions. It is called a null hypothesis because it is expressed in contrary terms from what researchers think will really happen. Researchers then reject the null hypothesis. This circuitous logic is necessary because the hyphetheco-deductive

what is generally true. Practitioners, on the other hand, are concerned with how predictable and controllable the results of their actions will be. They do not live in a world of true and false (p< .05); they are concerned with the usefulness of their actions. Most practitioners, would rather have a description of the typical or expected properties of materials and procedures, along with some confidence interval about how much risk there is that the reported values may not be accurate.

Understanding vs. Control: It is difficult enough for the practitioner to read the dental literature and try to draw conclusions from rejected null hypothesis when he or she is looking for realistic estimates as to the effect of their actions. What makes it more complicated is the fact that researchers tend to draw their conclusions in highly controlled circumstances. We are taught that good research design means control of extraneous factors by carefully choosing and standardizing the circumstances. We are even taught exactly how to calculate the effect of variance on key values in order to produce a statistically significant result. While tight control is useful for experiments, it has the opposite effect for practitioners. The dentist is unlikely ever to achieve the level of experimental control typical of published researched studies. This leaves a credibility gap in generalizing from the literature to the dental office. Scientists have always endorsed the unwritten disclaimer that research findings are only applicable to circumstances that are exactly the same as those in which the research was conducted. Research that is done with an eye on internal validity, reducing variance, offers no help for practitioners who suspect that their circumstances might be a little different from the situaonly a single characteristic by some small but statistically significant amount and knowing whether it is wise to use a certain material or a certain procedure on an individual patient who certainly has some of these characteristics, but never all of them. Another thing researchers are taught in

R esearchers study the differences between groups; dentists treat individuals.

tion reported in the journal article, but they are uncertain how big these differences are or what effect they might have. The traditional approach to research is silent on this question. What is worse, research tends to concentrate on one variable at a time, while practitioners must deal with a wide range of interacting circumstances, any of which might effect the results of treatment, but there is often no published literature exploring the combination at hand.

Individuals Instead of Groups: Researchers study the differences between groups; dentists treat individuals. There is a considerable difference between saying on average and in controlled circumstances, one group that differed from another in their statistics courses is that for any given effect size and variance, statistical significance can be achieved by increasing the sample size. That makes sense if the purpose of investigation is to make a yes or no decision about a hypothesis; it doesn't make much sense for treating patients. If the procedure fails for a patient, there is no way of retrieving the situation by repeating it multiple times.

The concerns raised to this point describe a culture of research created by researchers primarily for the sake of generating knowledge that other researchers will use. In its own context, the criteria it wishes to be judged by, it has been conspicuously successful. Carefully and slowly it has revealed many of nature's

Editorial

secrets to the benefit of mankind. But another kind of science is necessary the science that would propel dental practice, making better and more predictable treatment and prevention available to the public faster and with greater confidence. The answer is not an extension of basic science models into clinical research. The shortcomings of the tools of researchers in the hands of practitioners have already been enumerated. Currently, clinical trials suffer from all of these defects plus an additional one.

Attributes Instead of Components: Typical clinical trials introduce an additional problem. They are tests of specific materials, techniques, or other therapies. The question always is "Is this particular example of therapy better than some other example?" It is a test of concrete components of therapeutic knowledge, and the answer could only be yes or no.

The pressure on this system is enormous and has lead recently to numerous editorials about the ethical risk involved in such an enterprise. This is because the economic stakes are tied to products and not to knowledge. Large numbers of dollars depend on correctly framing the null hypothesis, controlling variability, and using a large sample size. Stock options given to clinical researchers, generous contributions to universities, and the suppression of unfavorable results are appropriate concerns. But there is another ethical issue as well. Are we using the scarce scientific resources at our disposal to bring the most effective therapies to patients as quickly as possible? If we are using procedures that require an unnecessary number of repeated studies because researchers are paid per study, the clinical research industry should certainly be required to offer an explanation.

Here is my concern. Randomized controlled trials of therapies now required for FDA approval, for over the counter status, or for the ADA seal of recognition all test the therapies against a null hypothesis and vary one concrete component at a time. This adds to the expense and time involved in generating scientific knowledge and may tell us little about how products or procedures fair in the hands of dentists or patients. It is a problem of testing the product instead of testing the underlying understanding of how the product works. In the defense industry, in much of product development engineering, and in some social sciences where naturally occurring phenomena are studied, more advanced research designs are used which elucidate the underlying phenomena, including en-

f the procedure fails for a patient, there is no way of retrieving the situation by repeating it multiple times.

vironmental circumstances, that explain why products or therapies in certain combinations and in certain circumstances are effective or otherwise. Such designs allow reasonable conclusions to be drawn about combinations of therapies that have not actually yet been tested. This is how we can get around the scientific paradox of having to wait fifteen years to test the fifteen-year life of a dental material.

It would be unfair to point out some shortcomings in the received approach to conducting scientific inquiry if there were not something better to be suggested. The truth is, there are theoretically grounded and empirically tested alternatives that make a better bridge between basic sciences and the practice of dentistry then are currently being used.

As an alternative to differences between averages and p-values, we can use point estimates and confidence intervals. The former will tell us the most likely result of an action, even one involving several components, and the confidence interval will tell us how precise the prediction is likely to be.

Experimental control can be replaced with factorial designs and regression analyses which include the range of variation a practitioner is likely to encounter.

The problem of conclusions about the group vs. predictions about an individual patient can be addressed through a statistic known as the standard error of measurement. This is fairly easy to determine given information about the reliability of a system and estimations of the base rate of various phenomena. The standard error of measurement is a confidence interval on any particular patient.

Finally, the randomized control trial of a concrete product or therapy can be replaced by generalizability studies—the systematic collection, analysis, and reporting of the underlying attributes which cause certain combinations of products or therapies and their environment to be effected.

Armed with this kind of information. I have no doubt that dentists will be more effective consumers of scientific knowledge and better providers of oral health care. None of these points is original with me nor unique to dentistry. The same arguments have been worked through years ago in education, psychology, and even applied areas such as agriculture. In all of these cases, the research establishment has acknowledged the validity of the criticisms and the appropriateness of the alternatives. But there are too many RO-1 grants and too many product approvals at steak to seriously believe that we can't call these "minor" problems and move ahead with business as usual.

David W. Chambers, EdM, MBA, PhD, FACD Editor

Codes and Character: The Pillars of Professional Ethics

Nuala P. Kenny, MD, FRCP(C)

Abstract

Historically, the ethics of a professional were the ethics of a gentleman. The social changes in the 1960s, where citizens asked for a greater voice in all affairs that affected them gave rise to formal approaches to ethics in the health fields. Principle-based and case-based reasoning have been dominant. Neither codes nor approaches based on virtue (the character of the professional) are perfect solutions in all cases, but professions are strengthened through the development and discussion of statements about ethical conduct.

t the end of 20th century, society in general and professionals in particular are grappling with questions of duty, obligation, the right, and the good. Traditional reliance on the doctors' authority to determine the good for patients has been rejected as inadequate in today's complex and pluralistic world. In Dental Ethics Summit I, North American dentistry is taking a thoughtful and creative approach to the question of professional ethics. In focusing on more than specific patient dilemmas or insufficiently developed ethical decision tools, dentistry appears to be doing a far-reaching and thoughtful reflection on the meaning of ethics in professional practice. The interdisciplinary and interactive nature of the enterprise initiated by Dental Ethics

Summit I clearly indicates that there are serious issues relating to professional ethics, respect for the diversity of values in pluralistic society, the education and nurturance of ethical dental professionals, and the need to develop and support ethical organizations which must be addressed by all oral health professionals.

The 20th century professional's response to these emerging issues has been the development of codes of ethics. While codes have an important and distinct role to play in the articulation and maintenance of professional ethics, they are inadequate, in themselves, to ensure ethical profession practice. Attention to the dentist-patient, dentist-colleagues, and dentist-industry relationships and to those values, virtues, and attitudes which make for a good practice are essential. This requires serious reflection on the character of oral health professionals as well as to codes of conduct.

The History of Professional Ethics

The Hippocratic Oath and its companion corpus were the foundation of medical ethics for almost 2,500 years (Pellegrino, 1993). This mosaic of moral precepts, written at different times and influenced by the philosophies of ancient Greece, presents familiar ethical principles: beneficence, nonmalefience, and confidentiality, along with prohibitions against abortion, euthanasia, surgery, and sexual relations with patients. This tradition exhorts physicians to live the good life and cultivate virtue. The virtuous physician was one who acted habitually in conformity to human virtues and in accord with the specific precepts of the professional oath. The key virtue for physicians was phronesis, a practice judgment, whereby a physician could discern the right thing to do in a particular situation. In ancient Greece, there was close association between medicine and philosophy. The necessary independence of medicine from philosophy was emphasized in the empirical nature of the art of practice. The Hippocratic ethic came into contact with the great religions of the West, but remained essentially unchanged. A synthesis of Hippocratic teaching, Judeo-Christian precepts, and the code of "gentlemanly conduct" formed the background against which most doctors entered the profession. Doctors were good persons; good persons do good things; good patients do what their doctor orders.

During the scientific revolution, logic and rationality reigned supreme. Medicine, the science of the body, addressed properly only what was measurable. The art of medicine was displaced in favor of the expanding, and seemingly infallible



Dr. Kenny is supported by Associated Medical Services Inc., Toronto, Ontario, and The Deans Development Fund, Faculty of Medicine, Dalhousie University, Halifax, Nova Scotia. She is Director of Bioethics Education & Research, Dalhousie University; (902) 494-3801, Fax (902) 494-3865.

Ethics Summit I

science. "Good" medicine was the most scientific, the most rational, and the most objective. Throughout this history, patients were dependent on the moral commitment of the doctors to be competent and to bring the best of science to the patients' best interests. The doctors' judgment of medical best interest was equated with the patients' personal best interests.

Modern Bioethics

In the 1960s, as part of the moral upheaval of the West, universal moral precepts were questioned. Some of the societal factors included: civil rights, feminism, consumer rights, pluralism, distrust of authority and institutions, and an affluence that demanded choice in all things with an increasing expectation of quality, availability, and efficiency. Medicine and dentistry were not exempt. Modern bioethics began with the need to replace the authority of the good clinician with a different process for decisions for technological advances which presented new problems of choice. A new language and methodology replacing the virtue-based ethic of the past as well as commonly held principles of the Judeo-Christian ethic became necessary. Moral philosophy, an organized approach to ethical dilemmas free from religious tradition, appealed to physicians who experienced the growing complexity of modern medicine and needed to know how to approach it and how to teach young clinicians. Philosophy provided systematiza-

Codes are not fully developed theories of medical ethics.

tion, consistency, and clarity in approaching complex questions. Among the many philosophical approaches possible, principle-based reasoning and case-based reasoning have dominated reflections over the past thirty years.

Principle-based reasoning is a variation of the theory of *prima facie* principles of Ross as developed by Beauchamp and Childress (1989). These approaches use principles that on "face value" should be followed in the resolution of dilemmas. They developed four now familiar principles relevant to clinical practice in a pluralistic society: respect for autonomy, beneficence, nonmaleficence, and justice. For pragmatic doctors, these principles brought order to ethical thinking and a way to develop an "ethical work-up" similar to a clinical work-up. Beneficence and nonmaleficence were compatible with the tradition of doing good for pacorrect for a patient in the face of a difficult choice. The sense of duty and responsibility, an essential part of the patient-doctor relationship, is unaddressed.

Abstract approaches seem inadequate to the difficult, sometimes gut-wrenching, decisions of modern practice. Virtue-based reflections and the ethic of care may help. In establishing the healing relationship as the focus of medical morality, Pellegrino says: "The act of profes-

odes focus on the clinician's perspective of the
priorities inherent in the patient-doctor relationship.

tients and avoiding harm; they could be understood in risk-benefit terms. Autonomy and justice were not easily adopted. Autonomy, with its individualism and self-determination by the patient, seemed to be opposed to the traditional Hippocratic beneficence, sometimes experienced as paternalism. The principle of justice has been more difficult because of the traditional focus on the individual patient and the emergence of systems for the delivery of and payment for services. Principles have contributed a vocabulary for ethical analysis of problem cases, but they do not direct which principle should prevail when there is a conflict of principles.

Casuistry is case-based reasoning. It starts with the specifics of individual cases to elicit common issues and values. Paradigm cases, with broad consensus on the issues and choices, form the template against which similar cases are judged. Because case-based reasoning is integral to clinical thinking, this approach has appeal. It is helpful in situations of agreement; it offers little in situations of conflict.

Contemporary bioethics generally uses a combination of cases and principles-based reasoning. This approach is intellectual and focuses on a reasoned and objective resolution of dilemmas presented by clinical situations. These philosophical approaches help; none fits comfortably with the experience of a doctor trying to do what is sion is a promise made to another person who is in need and therefore existentially vulnerable. The relationship between the professional and those he or she serves is characterized by an inequality in which the professional holds the balance of power...The assault of illness on the usual freedoms of the human being presents an immediate and present danger that the patient's values might be violated or that the physician might confuse technical with moral authority. The patient's moral agency is at risk, and a special obligation of the act of profession is to protect that moral agency while treating the patient" (Pellegrino, 1979).

In emphasizing the relationship issues of trust, duty, respect, and care become predominant. The ethic of care presents doctors with interesting insights particularly regarding the inequality inherent in the patient-doctor relationship for: "Rather than addressing itself to the principled resolution of moral quandaries, the perspective of care highlights the rudimentary moral skills, skills such as kindness, sensitivity, attentiveness, tact, honesty, patient, reliability, etc. that guide us in our relationships with particular others" (Sharp, 1992). These insights might help direct us in our understanding of professional ethics today.

Codes of Professional Ethics

Explicit expression of theoretical standards for those who practice medicine in

the Western tradition date from early Greek history. Included in such expression are prayers, oaths, codes, and institutional directives (Veatch, 1995). Prayers reflected adherence to a particular religious tradition, while oaths were public pledges which identify success in healing with a higher power. Leaving aside as unclear the exact genesis of the Hippocratic Oath (and reserving comment on certain of its self-serving aspects), the appearance of the Oath was an important factor in establishing a tradition for medical practice. The core of that Oath "What ever houses I may visit, I will come for the benefit of the sick, remaining free of all intentional injustice" (Edelstein, 1967), was a statement of a doctor's obligation to the patient. Such obligation remains in place today, albeit stated differently as modified by various cultural, religious, and social influences.

Over the years, codes of conduct for doctors have given attention to various aspects of behavior: etiquette, for example, professional relationships, virtuous conduct. The American Dental Association adopted its first code of ethics in 1866. It was very similar to that adopted by the American Medical Association in 1847. The earlier document was a response to the socio-medical conditions of the day; its drafting was influenced by the earlier work of Thomas Percival (Pellegrino, 1985). The traditional medical codes of ethics gave emphasis to: (1) the duties of the doctor in the individual patient-doctor relationship, including the obligation of confidentiality; (2) doctor authority and the duty of beneficence, i.e. acting for the patients' good, and (3) doctors' obligations to each other.

Codes are not fully developed theories of medical ethics, although they express those ethical requirements the profession believes to be central to practice. As such, they serve to define and legitimatize the profession; they maintain its prestige. Most importantly, they stand as a promise to society concerning the integrity of the profession, the promise given in return for the power and authority society grants to this group. Seen in this light, codes have served to set certain standards of competency, as well as to identify the values, virtues, and duties essential to the practice of the profession. Even though codes have addressed specific ethical issues over the centuries, their intended role is as signposts; as such they cannot be regarded as the single source for assistance in clarification of complex ethical issues. Their necessary brevity and iterative approach to various ethical concerns requires further reflection, perhaps interdisciplinary consultation, with regard to clarifying ethical priorities among the canons of a code and with regard to establishing sound ethical justification for action based on the code's requirements.

Codes provide no systematic justification of the principles stated in the text. They serve rather as a current list of beliefs about some of the major ethical issues and dilemmas affecting doctors and their practices. Further, as documents "prepared by doctors for doctors" codes ments of all these and should form the basis for an ethic of care appropriate for all professionals dedicated to oral health. A professional ethic consistent with these goals requires reflection on the values and attitudes necessary to achieve them. It requires attention not only to the scientific and technical competence essential in the provision of good oral health, but even more important, to the qualities of oral health professionals which are essential to their achievement. These values, attitudes, and virtues are the stuff of professional ethics as much if not more than analytical abilities. Virtue was the basis for the traditional ethic (Pellegrino, 1993) and it is important today. Professional formation is a moral enculturation. Dental professionals are, in fact, formed into a set of values, virtues, and attitudes. These have a definite place in practice (Ozar, 1996). They are learned through the "hidden curricu-

t may not be fashionable to speak of professional virtues but truly good practice demands it.

focus on the clinician's perspective of the priorities inherent in the patient-doctor relationship. Clearly, modern codes require a broader input from both patients and other health care providers.

Moral Enculturation and the Oral Health Professions

Dentistry shares much of the ethical basis of medicine, but has a distinct set of clinical goals. These have been articulated as: (1) relieving and preventing intense pain; (2) relieving and preventing less intense pain and discomfort; (3) preserving and restoring patients' oral function, on which both nutrition and speech depend; (4) preserving and restoring patients' appearance; (5) preserving and restoring patients' autonomy (Ozar, 1995).

These goals focus on the patient's need and benefit, but contain some complex underlying issues in need of clarification. In what ways is dentistry a profession? A business? A health care activity? Cosmetic activity? The goals contain elelum"; they are not explicitly named or studied, but are learned from the example of teachers and clinicians. What are the "real" values learned in our educational settings? What are the "real" values expressed in our interactions with different members of the oral health community? What are the "real" values lived in our institutions and organizations? These form that hidden curriculum which re-enforces or contradicts those values, attitudes, and virtues enshrined in our codes.

Codes, Character, and the Future of Dentistry

As the oral health care providers reflect on a professional ethic for the twentyfirst century, both codes and character need to be taken into account. Codes reflect a formal, public commitment to certain values and standards. But character refers to that lived experience of values and virtues in the personal commitment of individuals. We have obligations

Ethics Summit I

to develop codes and standards of practice and conduct. We also have obligations to reflect on the importance of our obligations and duties to each other and the patients we serve. It may not be fashionable to speak of professional virtues, but truly good practice demands it.

References

- Beauchamp T.L., & Childress, J.F. (1989). *Principles of biomedical ethics*, (3rd ed). New York: Oxford University Press.
- Edelstein, L. (1967). Ancient medicine: Selected papers of Ludwig Edelstein. Baltimore: The Johns Hopkins University, 1967.

- Ozar, D. (1995). Dentistry. In Reich, W.T. (Ed.), *Encyclopedia of Bioethics*. New York: Simon & Shuster MacMillan (pp. 597-602).
- Ozar, D. (1996). Virtue theory and a dental managed care case. *Journal of the American College of Dentists*, 63 (4), 27-30.
- Pellegrino, E. (1979). Towards a reconstruction of medical morality: the primacy of the act of profession and the fact of illness. *Journal of Medicine and Philosophy*, 4(1), 47-48.
- Pellegrino, E.D. (1985). Thomas Percival's ethics: the ethics beneath the etiquette. Birmingham, AL: Classics of Medicine Library, Gryphon Editions.

- Pellegrino, E.D. (1993). The metamorphosis of medical ethics: A 30 year retrospective. *Journal of the American Medical Association*, 269 (9), 1158.
- Pellegrino, E.D., & Thomasma, D.C. (1993). The virtues in medical practice. New York: Oxford University Press.
- Sharpe V. (1992). Justice and care: the implications of the Kohlberg-Gilligan debate for medical ethics. *Theoretical Medicine*, 12, 295-318.
- Veatch R. (1995). Medical codes and oaths. In W. T. Reich (Ed.), *Encyclopedia of bioethics*. New York: MacMillan Library Reference USA, pp. 1419-1435.

Ethics Summit I: Assembling the Ethical Community

David W. Chambers, EdM, MBA, PhD, FACD

Abstract

Ethics Summit I was a unique organizations gathering of representing all of oral health care, convened by the American College of Dentists, for the purpose of seeking a common ethical ground. The background of the conference and its logistics are described here. Four themes were discussed: the role of ethics codes, conflicting values, responding to unethical behavior, and organizations as ethical agents. The conference was grounded in the unusual assumptions that the participants did not have to have a common profile of values to engage in ethical discussion and that individual behavior is not the only level at which ethical discussion must take place. Finally, we did not begin with an assumption that one group could define an ethical code that all others might subscribe to. One strong consensus that emerged was the desirability of creating an alliance of all concerned with oral health care to continue such conversations.

thics Summit I is unique. Nothing like it has been attempted before. Never has a profession brought together representatives of every part of the field to search for such common ethical ground. Ethics Summit I took place on April 24-25, 1998, in St. Louis, Missouri, when the American College of Dentists issued an invitation that was answered by fiftysix organizations representing organized dentistry, hygiene, assisting, and laboratory technology; the specialties; thirdparty payers; the dental trades; education; the uniformed services; research and public health; ethicists; and groups such as the Academy of General Dentistry, Pierre Fauchard Academy, and the American and International Colleges of Dentists.

The eighty-one participants were surveyed prior to the conference on ethical issues in dentistry from the perspectives of the various organizations they represented. They also received a resource book containing relevant readings, cases, and "scope notes" from the National Reference Center for Bioethical Literature. The keynote address was given by Dr. Nuala Kenny, a physician and Director of Bioethics Education and Research at Dalhousie University in Halifax, Nova Scotia. Following the charge to participants, four groups were formed to explore in detail issues that affect the entire profession. The groups alternated between a workshop format and reporting in plenary session, and each group was led by an experienced facilitator who was also familiar with dental ethics. The four themes addressed were: (1) the role of codes of ethics, (2) conflicting values underlying ethics, (3) responding to unethical behavior, and (4) defining the ethical organization.

The keynote address and the reports from the four working groups appear in this issue. This report contains the context of the conference, the charge to participants, and the summary reflections of the moderator.

The Challenge

There have been many times before that representative members of professional groups have come together to discuss ethical issues. One unusual characteristic of Ethics Summit I was participation by the entire profession (even patient advocacy groups were asked to participate). The Summit also accepted an unusual challenge.

Most ethical discussions originate from a uniform perspective or at least from an assumption of a common profile of values. That was not the case with Ethics Summit I. Each individual present was assumed to represent an individually valid ethical point of view and the inten-



Dr. Chambers is Editor of the Journal of the American College of Dentists and Associate Dean for Academic Affairs at the School of Dentistry, University of the Pacific, 2155 Webster Street, San Francisco, CA 94115, dchambers@uop.edu. He also served as moderator for the conference.

Ethics Summit I

tional diversity of the group made it virtually impossible that there would be a single, universally subscribed set of values and professional self-interests.

Another common starting point in most ethical discussions is that the individual and his or her behavior is the correct unit of analysis. The actions of people that must be guided is the outlook of many ethical discussions. In Ethics Summit I, we wanted to go beyond that and include as well the actions, positions, public policies, and political and economic stances of organizations. Organizations can be ethical agents and we must work out the relationships between organizations and their members, the public, and even other organizations.

Finally, Ethics Summit I did not begin with the assumption that one group should properly define the ethical behavior of another or that there was a super ethics code that could be discovered and offered to all.

What we did take as our starting point were three assumptions:

- 1. Raising the consciousness of ethical issues and discussing them will elevate the spirit and improve the quality of oral health.
- 2. Ethical discussion can stand in the place of law, regulation, external monitoring, and arbitration.
- 3. We can find ways of improving ethical behavior through constructive discussion—even without making the traditional assumptions.

The question before the group was "What is the role of ethics in a pluralistic, multi-organizational oral health care environment?" There were two expectations set before the participants in the Table 1. What are the most significant ethical issues facing dental organizations and dentistry today in the opinions of participants in Ethics Summit I?

	Organization	Dentistry
Patient treatment standards	22%	29%
Financial, reimbursement	12	34
Advertising, misrepresentation	10	8
Legal	9	3
Organizational	4	4
Dentist vs dentist	4	2
Research	4	2

would be the preferred method of building relationships and resolving conflicts in oral health care. These relationships were defined to include professional and patient, intra-professional, organizations and their members, across organizations, and between organizations and the public.

Background Survey

Several months before the conference, all invited organizations were send a survey with the goal of collecting existing ethics codes, preparing participants for the meetings, and gathering background information. Responses were received from thirty-six organizations.

Seventeen of the thirty-six responding organizations said they had developed their own code of ethics; five others said they used the code of another

Porticipants did not have to have a common profile of values to engage in ethical discussions.

conferences. First, that Ethics Summit I would set the agenda for expanding the scope and impact of ethics in oral health. Second, those present were challenged to lay a foundation so that ethical discussion organization (this was the case for several specialty groups who use the ADA code and for some branches of the military services that use government statements of ethical standards). Over half of the organizations with codes received input in their development only from members of the organization; about a third discussed their code with a parent organization. In two cases, the services of a trained ethicist were employed. No group discussed their code with those whom the profession was to serve. Codes tended to be reserved for use within the organization. Seven of seventeen organizations with codes had not made the existence of their codes known to anyone beyond their members.

Two questions were asked about the effect of codes on members. In only two cases did organizations say that they knew of effects of codes on their members, twelve said "perhaps" there had been an effect, and two others said the codes were useful in guiding policy. The means of enforcing codes was evenly divided, with half specifying voluntary compliance and half mentioning the existence of a review board.

There were three questions on the survey that asked respondents to indicate the extent to which they agree with statements about the ethical behavior of individuals. Asked about the reasons for lapses in ethical behavior, respondents ranked (from most to least likely) the following causes: stronger self interests prevail, ethics codes are not enforced, inadequate training in ethics, unaware of applicable ethical standards, codes poorly written or incomplete, and codes are inconsistent. The function of ethical codes seems foremost to be as a basis for professional identification. Regulating individual behavior, as an aid for intergroup communication, and as a way to communicate within the group are all rated as being of lesser value. Respondents were also asked to speculate regarding what individuals do when an ethical issue is not the profession, but were not as likely to be a concern to the organizations. Other issues mentioned included advertising, legal questions, organizational disputes (turf wars), conflicts among dentists, and problems arising out of research and product claims.

What Was Learned

The substantive work of Ethics Summit I is contained in the four group reports. Beyond what was said, however, some very important things happened in the

E thics Summit I did not begin with the assumption that one group should properly define the ethical behavior of another.

covered by a code. The opinions about likely responses (from most to least) is: consult one's own ethical standards, do what looks right and avoid attention, do what is convenient, seek the advice of professional colleagues, consult an attorney, and seek help from someone trained in ethics.

Table 1. Shows the results to the questions "What is the most significant ethical issue facing your organization?" and "What is the most significant ethical issue facing dentistry today?" Standards of patient care was the primary problem facing both dentistry and individual organizations. Issues identified included both deciding what is proper treatment and in performing proper treatment or performing it at the appropriate level. Financial issues were viewed as important in

way the conversation unfolded. It is impossible to convey in written format the sense of emotional investment that was shown in the discussions at the conference. Individuals were asked to speak from their personal perspective—they were freed of the obligation to speak "on behalf of others" or glancing over their shoulders to see how others might take what they had to say. Most found this a liberating experience. It certainly made for frank and full discussions.

The following observations on my part are all related to the way the conversations were conducted:

1. It appeared to be easier to reach common ground on desirable consequences for patient oral health than on who was to perform each part of the care giving. (This generalization might not have held if patients had been present to express their interests.)

- 2. Language, especially the type that expresses commitments ("we should work together to ..."), creates relationships.
- 3. It was often difficult to agree on rules for what is in others' best interests, but relatively easy to establish rules to let them decide. (See Group 2, for example).
- 4. When participants were freed of the obligation to represent an organizational point of view, they realized that many of the conflicting positions were in fact ethically equivalent—their own view was merely more comfortable, but not ethically superior.
- 5. The easiest agenda items to agree on were those that called for someone else to do something. This observation is important in determining who should be present at such discussions in the future.

There was considerable enthusiasm for the format and process of Ethics Summit I. A theme that emerged early in virtually all groups was that an "alliance" of all concerned with oral health should be formed to provide the framework necessary to continue such a discussion. In that sense, it could be argued that the conference met its goals-the goals that no other conference had ever attempted-of demonstrating that ethical discussion can be effective in elevating oral health, even without insisting as a precondition that all concerned parties begin from a common ethical framework or with a common value profile.

Role of Codes of Ethics in Oral Health Care

Thomas K. Hasegawa, Jr., DDS, FACD, and Jos V. M.Welie, JD, PhD

Abstract

This group dealt with the role of codes through developing a draft of a code that could be used as a framework of common values in an "Alliance of Dental Organizations." Such an alliance might be an umbrella organization of all groups interested in promoting oral health care by advancing ethical discussion. A set of potential core values, based on traditional ethical principles, is presented.

thical debates on moral values and conflicts generally begin with a problem or a question. For example, successfully cloning sheep is an astounding technological accomplishment; should we as a society, however, extend these technologies towards the goal of the cloning of human beings? Is each citizen entitled to the provision of health care? Can a surgeon order an HIV test on her patient without the latter's consent?

The Breakout Group 1, better known as the "Red Group" because the of red marked name tags, was challenged to consider two ethical questions related to the practice of dentistry: (1) What is the general role of codes of ethics, and (2) what is the value of these codes when we are faced with ethical problems or values in conflict?

Codes of ethics are common—and becoming increasingly more common. Whenever discussions arise about the nature of professionalism, codes of ethics are cited. Presumably, the presence of a code of ethics defines what it means to be a genuine profession. Organizations and occupations that strive to increase their status typically draft a code of ethics and some of them mail it to their clients as evidence of their high moral standing and professionalism.

Yet on closer inspection, the nature and function of ethics codes is not at all evident. Written codes, emphasizing individual obligations to society, are considered to be a binding force within the learned professions. But what is the justificatory basis of ethics codes? Do they carry moral authority if and because they have been around for many, many years? Should codes be based on a majority vote? Are codes actually read and used as a guide of conduct by the organization's members? How often are they invoked to address problematic situations, and if so, how are these problems solved successfully by invoking the code?

In view of these complex questions, the Ethics Summit I charged one of the four task forces with this challenge: Examine the role and function of ethics codes in the practice of dental care. The group consisted of the sixteen members, representing different dental specialties, interest groups and organizations, the military, dental manufacturing, insurance, and dental education. This diversity provided the fertile soil for a rich ethical dialogue, aimed at surpassing individual interests and particularities, reaching for common ground and ethical consensus.

All members were provided with ample reading and reference material, both preceding and during the two-day seminar. Small group intensive discussion were alternated with plenary sessions in which ideas and reflections gained in the small groups could be compared with and adjusted to the insights of the other three task forces.



Dr. Hasegawa is Associate Dean for Clinical Services at Baylor College of Dentistry, a member of the Texas A&M University System, 3302 Gaston Avenue, Dallas, TX 75246, thasegawa@ tambcd.edu; Dr. Welie is an Assistant Professor at the Center for Health Policy and Ethics, and the Department of Community and Preventive Dentistry, Creighton University, 2500 California Plaza, Omaha, NE 68178, jwelie@creighton.edu. Dr. Hasegawa served as facilitator and Dr. Welie was a member of this group.

What Is the General Purpose of Codes of Ethics?

The initial context for the discussions was provided by a hypothetical scenario from a non-dental area:

"The chair of the committee on a Code of Ethics for the American Association of Professional Speakers in Medical Management (AAPSMM) was finishing his report to the House of Delegates. The committee has worked for almost three years developing a code that would guide the members of the Association, whose members worked primarily as consultants and speakers who presented programs for other associations, for schools, medical centers, and for industry. The codes covered such areas as competence of members, working only within their expertise, evidence for statements, fees, conflict of interest, the diligence in investigating claims, continuing education requirements, and a very controversial standard regarding submission to audit by colleagues."

The group was asked to discuss various interpretations about the purpose of the AAPSMM code. Six perspectives on codes were provided along with the case:

- Codes serve to educate new members about ethical commitment
- Codes serve to preempt government interference
- Codes facilitate the "policing" of the organization
- Codes are first and foremost aspirational
- Codes of voluntary organizations are essentially non-enforceable; hence their function is very limited
- Codes typically create confusion because parts are vague and may have infernal inconsistencies.

The dialogue that followed revealed that the task was problematic for the group. On the one hand, the case was very specific and invited a specific discussion. Yet the background information about this specific case was limited. For example, there was no actual code to analyze: the group was not afforded the opportunity to measure the code against the six views. Also, there was no corporate history for the AAPSMM: it may have been difficult for the group to understand the code's relationship to the role and mission of the organization. The group had some difficulty identifying with this specific organization since it Reiser's definition provides a thoughtful reminder of the place of codes in the literature of health care. These statements are not snap shots of current practice, but represent ideas collected and tested in the course of generations. This definition also reminds us that

The group chose to explore the nature of codes through examining the feasibility of an ethics code for oral health care in general.

was unlike any represented at the Summit. On the other hand, the group charge was too encompassing and abstract to be discussed in reference to a single case with six partially overlapping, contradictory perspectives. The question facing the group was not what is the purpose of the AAPSMM code, but what is the generic purpose of codes.

The group chose to explore the nature of codes for oral health care in general. This charge allowed for an in-depth examination of common interests, values, and principles among the diverse organizations and associations present.

As a working definition of its to-bedeveloped ethics code, the group adopted the definition proposed by philosopher Stanley Reiser: "Oaths, codes, declarations, and statements of principles that discuss moral issues that practitioners engaging illness should consider are among the most significant documents in the literature of health care. They represent the collective thinking of different generations, marking out the moral boundaries within which therapeutics can be conducted. But they do so without the embellishments of essays, giving them the qualities of terseness and directness that can make them powerful ethical statements" [Reiser, S.J. (1986). Codes of ethics in health care: language, context, and meaning. In J. Van Eys & J. M. Bowen, (Eds). The common bond: The University of Texas Cancer Center code of ethics. Springfield: Charles C. Thomas, pp.15-25.]

codes of ethics cannot be viewed in separation from the moral territory and practice in which we are engaged.

How Can Codes Help When Ethical Problems or Values Conflict?

At the same time the Red Group was exploring the role that shared code might play in defining common ground for organizations in oral health, similar thoughts were emerging in other groups. There appeared to be a sense that ethics is a common language that bridges across interests separating organizations. In fact, the very gathering of such a diverse group of organizations and associations, meaningfully united around the theme of dental ethics, was deemed convincing evidence that something like an alliance of organizations had already begun to emerge. If such an "Alliance of Dental Organizations," should come to pass with a purpose of promoting the oral health of patients, future patients, and society, what would be some of its shared principles of ethics?

The group took as its charge responsibility for delineating the principles of ethics for the Alliance of Dental Organizations. Such principles might define how a collective dialogue would occur and the qualities and commitment expected of its members. Such an alliance would provide the setting for collaboration across dental organizations that adopt the purpose and the principles of

Ethics Summit I

ethics as common ground for this dialogue. These principles are designed to complement, not supersede, other organizational documents.

Potential Core Values for an Alliance of Dental Organizations

By examining the various codes already in place in the different organizations represented in the group, as well as the personal experience of the members present, a tentative and preliminary list of eleven core principles of ethics was drafted. Since no agreement was reached during the meeting of the ranking of the eleven principles, they are listed here in alphabetical order.

Accessibility:

Member organizations will foster the availability of oral health care for the public.

Autonomy: Recognize the dignity and intrinsic worth of member organizations

Each organization has the right of self-governance.

Members respect the rights of individual members to make choices germane to their missions.

Beneficence/Nonmaleficence: Do good/Do no harm

Members will act in the best interest of the public and society.

Providers will meet or exceed acceptable standards of care.

Organizations shall refrain from engaging in an activity that would result in a detrimental outcome with the end user.

Members respect the rights of other organizations even when there may be a conflict of self-interest.

Compassion and Empathy: Be sensitive to members and societal needs

Not global but more personal in nature.

Competence: Strive for expert skillfulness

Organizations shall strive to achieve the highest level of skill, ability and expertise within its capacity.

Education: Foster a better understanding of each of the members' missions, goals, and objectives.

Enhance the communication flow of information between members.

Fairness: Do not discriminate and foster equity

Treat all individuals and groups in a fair and equitable manner and promote justice in society.

Members and organizations will interact with one another and their beneficiaries fairly, that is, they will not distinguish on the basis of non-relevant considerations, respecting instead the integrity of each member and beneficiary.

Organizations shall treat all individuals in a fair and equitable manner

Integrity: Aspire to integrate values in practice in a comprehensive manner

Incorporate core values as the basis for ethical practice.

Professionalism: Foster the dental care community and act as its representative with the appropriate degree of dignity and honor

Be committed to involvement in professional endeavors that enhance knowledge, skill, judgment, and intellectual development for the benefit of society.

Tolerance: Strive towards mutual respect for and sincere patience with diverse viewpoints

Members of the dental community respect the differences in ethical views among its members and beneficiaries.

Members respect the rights of organizations to hold disparate views in ethics discourse and dialogue. Respect the rights of individuals to hold disparate views in ethics discourse and dialogue and recognize these views may arise from diverse personal, ethnic, or cultural norms.

Veracity: Strive for truthfulness and sincerity

Value truthfulness as the basis for trust in personal and professional relationships.

Members and organizations will be truthful and complete in communication with other members, organizations, and patients.

Organizations shall aspire to be truthful and honest in all relationships.

Conclusion

Among the many valuable lessons learned as a result of Ethics Summit I and the deliberations in the Red Group, is the conclusion that the formula adopted by the Summit's Organizing Committee maximized the expertise, creativity, and contributions of each individual. Members of the group, as all participants at the Summit, are leaders in their organizations. The group was challenged to consider the value of an Alliance of Dental Organizations in helping in our collective understanding of individual contributions to the oral health of our patients, future patients, and society. The potential was recognized for an organization that acknowledges the autonomy of each member while sharing a common ethical objective. In this context, the group was able to formulate its answer to the initial question about the nature and purpose of a code of ethics: To maintain the integrity of the individual while promoting tolerance towards disparate viewpoints.

Conflicting Values in Oral Health Care

David T. Ozar, PhD, and Jessica Love

Abstract

It was demonstrated that a group of professionals representing diverse values with regard to oral health care can work effectively to identify pivotal issues and even reach consensus on ethical issues. Where consensus cannot be reached, it is still possible to make progress by clarifying positions. Consensus was reached on a statement regarding adequacy of care for patients whose insurance coverage is less than what the dentist considers appropriate.

here clearly are areas of conflict within the dental care community today. The Blue Group's designated task was to work on the theme of "conflicting values" in order to say something useful about the values that are in conflict and what these conflicts are and also something useful about the role of ethical reflection and other means that are available to us to use in addressing these conflicts.

The Blue Group, like the other groups, included individuals from many different parts of the dental care community; and it seems fair to say that we expected a high level of disagreement and difficulty in discussing the issues of conflicting values that were our charge. Nevertheless, like the members of the other groups, the Blue Group's participants came ready to listen respectfully to every participant, to speak honestly and frankly from their own point of view, and to respond fairly to one another in the give and take of the conversation. They came, in other words, already committed to the value of respectful dialogue for addressing difficult questions about conflicting values and already willing to treat every other participant as a peer in this enterprise.

How to Address Conflicting Values

The most important thing to report out of the Blue Group is our answer to the first question, "How do we address issues that stem from conflicting values?" We did not answer this question chiefly by posing it to ourselves for examination. In fact, our answer, when put into words, is a set of truisms: listen respectfully; speak honestly and frankly; respond fairly; value respectful dialogue above particular answers; treat every participant as a peer in the enterprise. But we did, nevertheless, answer this question very pointedly by what we did, by how we interacted, by establishing immediately and maintaining throughout exactly the kind of respectful exchange that addressing questions of conflicting values requires.

As it turned out, we found ourselves in consensus on several important issues where conflict might have been expected. But we also were able to work constructively on issues about which we did not come to consensus. We left the Summit convinced that disagreement and distrust are not inevitable within the dental care community. The members of the dental care community, diverse though they are in focus and concerns, can work together, can address differences meaningfully, and can find common grounds for collaboration. Thus the Blue Group's answer to the question "How do we address issues that stem from conflicting values?" is: by listening respectfully; by speaking honestly and frankly; by responding fairly; by valuing respectful dialogue above particular answers; and by treating every participant as a peer in the enterprise.

The Role of Ethics

The second question posed was, "What is the value of ethics in value conflict ?" On this question as well, we did not so much answer the question by posing it for examination as by what we *did*, by how we interacted.

One meaning of the word "ethics" is the name of the study of what makes conduct right or wrong. If the word is taken in that sense, then the value of ethics lies in clearer concepts and ideas that are the fruit of such study and that are useful tools in helping people discuss their differing views and differing values. None of us found it useful to begin our



Dr. Ozar is Professor at the Loyola University of Chicago Center for Ethics and Ms. Love is a graduate student in that program; 6525 North Sheridan Road, Chicago, IL 60626, dozar@luc.edu. Dr. Ozar was the facilitator for this group and Ms. Love served as reporter.

Ethics Summit I

discussions in the abstract. We started each time with issues that members of the group considered important within the dental care community or the larger community of patients and the public. An overview of the issues we considered most important is presented in the next ethics would have needed to become the focus of respectful dialogue. At that point, the concepts developed in the study of ethics would have become all the more necessary to facilitate the dialogue. But, in any case, the value of ethics in this second sense is that ethics is

We left the Summit convinced that disagreement and distrust are not inevitable within the dental care community.

section. But our conversations were sometimes helped significantly by participants' efforts to clarify their own or others' ideas with concepts learned from the study of ethics; and on some issues we discussed, if there had been time, more help of this sort would probably have been useful.

A second meaning of "ethics" is a set of rules or standards; for example, the published code of a professional group or the personal set of standards that an individual lives by. Many of the contributions to our conversations were of course based on the participants' own moral or ethical views or on a particular understanding of the obligations of dental professionals, patients, suppliers, government, or other groups interacting in society in relation to dental care. The more clearly and explicitly a speaker could articulate the relation between what was being said and its basis in (some part of) his or her personal ethics or his or her understanding of some relevant group's ethics, in this second sense of the word, the better the other participants could understand why it was important to the speaker.

Maintaining an environment of respectful dialogue means permitting other speakers to base their views on personal ethical views that may be of a different understandings of the obligations of various groups. If there had been more time, these differences in people's own ethics and their differing views of the group's obviously at the root of every participant's contributions on every issue discussed.

In a third meaning, "ethics" refers to a way of relating to each other. It refers to the traits of individual character that make collaboration and respectful dialogue possible; and it refers to the cooperative characteristics of the dialoguing communities that are thus formed. As was already indicated, the Blue Group and each of the other groups at Summit I achieved ethics in this sense to a remarkable degree. The Blue Group believed that its most important message to the other participants was to call their attention explicitly to the reality that during these two days we not only talked about ethics, we carried it out by how we related to each other. The answer to the question about the value of ethics in this third sense, then, is that relating to each other in this way was absolutely essential to the success of the Summit and will continue to be essential to any effective dialogue on important issues of conflicting values.

The rest of this report concerns what the Blue Group learned about the conflicts in values themselves. Our learning took two forms. First, we attempted to identify the issues that we considered the most important value conflicts in the dental care community, and in its relations to the larger community. Secondly, we tried to see what would happen when we ourselves worked on some of these issues carefully together, in the setting of a respectful dialogue of peers, as a kind of microcosm of the much larger dialogue that will be needed for these issues to be effectively addressed more broadly.

The Most Important Issues

Before attempting to discuss any of the conflicting values issues carefully, the Blue Group developed a list of the issues that the members agreed were most important. Obviously, there is some overlapping. In addition, there was no consensus about their exact ranking in importance; but all the issues listed here were viewed as important enough to deserve careful discussion if time allowed.

Level of care

- How it is defined—acceptable versus best
- What optimum care is
- Function versus duration
- Disease management versus rehabilitation

Changing standards of care

- Clarification of levels: guidelines, parameters, standards
- Who develops such guidelines, standards, etc.
- How such changes impact caregivers, payment, etc.

Reimbursement

- Miscommunication and conflict in provider-patient relationship
- Miscommunication and conflict in provider-third party relationship
- Coverage in relation to determination of patient need

Absence of oral health as a high priority value in the larger society

Access and the under-served

- Right versus privilege
- Who should be responsible for addressing access to care issues: dental professions and professionals, the oral health community, the government, the public
- Who should bear the sacrifice for access for the under-served

Transfer of new technologies and scientific information

- Clarification of roles and responsibilities
- Identification of format and methods of transfer

Conflicts of interest

- · Clinicians with financial interest
- Influence of "profit incentives"

Diversity issues

- The additional economic and social barriers to care for minority groups
- Other special populations
- · Access; dignity
- Special cultural needs (e.g. cultural prohibitions of health care for women by male caregivers)
- Who takes leadership in addressing these concerns: dental professions and professionals, the oral health community, the government, the public

Scope and value of ethical standards for the oral health community

- Who should be involved in formulating, promulgating
- Enforcement, if any
- Who is affected and how

Role of government, regulatory groups, etc., and impact on professional practice

Dialogue About Some of These Issues

One important thing we learned is that not all disagreement about values within the dental care community continues when matters are carefully discussed. In regard to some issues, disagreement disappears when the conversation is carefully carried out. On one issue, in fact, the Blue Group actually reached consensus on an important point, in spite of the fairly limited time we were able to devote to this one issue. The issue concerns the limited coverage of dental treatments by insurers and other payers in comparison with dentists' and patients' judgments of what would be the best treatment for a particular presenting condition. Many dentists express anger and frustration at insurers and other payers and, on the surface, it often appears that limited coverage of this sort, which payers defend on the basis of fiscal constraints and contractual requirements (since many payers provide coverage only on the basis of contracts with employers), is a principal basis of such anger and frustration. But careful conversation about the various factors involved in the conflict led, first, to several procedural clarifications by the members of the group and then a consensus statement, accepted by all members of the Blue Group, about a key ethical issue.

Clarifications by the payers in the group included a statement of commitment on the part of all payers represented in the Blue Group that non-dentist staff of the payers are not authorized to deny treatment proposals on the basis of their not being needed. Only dentists can issue denials on this basis. But the pavers acknowledged that non-dentist staff who issue denials on the basis of the proposed treatment not being covered in the patient's contract might be misunderstood to be denying on the basis of the treatment not being needed and that better communication on such matters would be helpful. (The payers acknowledged that some other payers may authorize non-dentists to deny on the basis of lack of need; but they judge such organizations to be acting inappropriately and unethically in doing so.)

The dentists and payers also agreed that patients are often very ill-informed of the extent of coverage available in their dental plans and that more effective ticular procedure is covered—e.g., for extra coronal coverage to be eligible there must be evidence of incisal/cuspal damage, loss of cusp, or loss of one or both marginal ridges—payers would not be in the position of determining need at all, but only of applying the clear conditions of the coverage; but this proposal was not discussed in detail.)

With these acknowledgments as context, the Blue Group then formulated and accepted the following as a consensus statement:

If a patient accepts and receives only adequate care for his or her clinical condition because of insurance or other payment limits when the patient or the dentist would prefer a different treatment and the patient is aware of the options and chooses adequate (rather than the "best") care, the situation is ethically sound. Any issues that arise out of this situation are not primarily ethical issues and can be dealt with best by better communication and problem solving. Dialogue on how to achieve better communication in these matters would be helpful.

The Blue Group does not hold this consensus statement as flawless or as a principle of lasting importance in itself. But it does demonstrate that there are value commitments and ethical views that representatives from widely diverse parts of the dental care community hold

There are value commitments and ethical views that representatives from widely diverse parts of the dental care community hold in common.

communication by payers to patients is required. All were also agreed that an important burden of education about dental coverage will continue to fall on dentists and their staffs, even if payer education becomes more effective. The group tried briefly to develop suggestions about how more effective payer-to-patient communication could be achieved, but developing practical suggestions in this regard proved difficult. (Some participants proposed that, if payers defined in writing and in clear, concrete terms exactly how it will be determined that a parin common, and that some of the apparent points of conflict in the dental care community disappear, even to the point of consensus on an important matter, when they are carefully discussed in the proper way.

It is important to note, however, that much of today's anger and frustration at payers is coming from patients. Because no representatives from patient groups or the public attended Ethics Summit I despite being invited, however, patients' views were not much represented in the dialogue on these points.

Ethics Summit I

Secondly, the members of the Blue Group were unanimous in the view that dental health is a crucially important component of a person's general health and that the general down-playing of the value of dental health, and therefore of dental care, within American culture at large and American health care in particular is a serious mistake. Not only those who provide dental care, but the whole spectrum of representatives of the dental care community consider dental health and dental care important in this special way. Dental care is not just another consumer good; it is an essential component of what people need to lead full and effective lives. (Several members of the group proposed that the dental

On a third area of concern about values, which was discussed extensively, the members of the Blue Group did not reach unanimity of consensus, but were still able to discuss, clarify, and explain their differing points of view in a mutually supportive and respective atmosphere. To get the issue on the table, the group discussed the proposal that some level of access to dental services is a right.

There were several points of agreement on related matters that came to light first. It was agreed that contemporary U.S. law does not provide such a right, and therefore that the proposal is not about a *legal* right, but rather about a *moral* right. It was agreed that, *if* there is such a moral right, *then* the obligations it entails are obli-

These matters can be clarified in useful ways that build consensus where that is possible.

care community therefore has an obligation to lobby the public, the government, or other groups to establish dental health and dental care to its rightful place; but this proposal was discussed only briefly.)

But the members of the Blue Group did also agree that there is great ambiguity in the dental care community about what should be considered a standard of care for many presenting conditions. Sometimes "standard of care" refers to what will be effective as a defense at law. At other times, it refers to whatever pattern of care happens to prevail in a given community. At other times, it refers to what is considered the best care for a given presenting condition. The group asked whether continued dialogue, broadened to include other players in the situation, could not provide greater clarity on this point and thereby improve communication between payers, patients, and dental care providers.

gations of the whole society, with dental care providers as an important part, but not as the sole group obliged to provide care in response to the right. It was also agreed that the question of "What level of access?" is a question in need of extensive dialogue, even if there was consensus about some sort of moral right to access to care. The group also seemed comfortable in the view that, if there is such a moral right, then the focus of the "What level of access ?" question should probably fall on some notion of "adequate care" (vs. the "best care"), which would probably include, at a minimum, the handling of intense pain, active infection, restoration of function, and life-threatening diseases, and which might also include other dental and other treatments for quality of life reasons.

But the Blue Group did *not* reach consensus about the proposal itself. Several members of the group were not

comfortable with formulating obligations regarding access to dental care in the language of rights. Others asked whether affirming a right to access and determining what counts as the proper level of care in relation to such a right should or should not be affected by the varying patterns of use of dental care services in various populations, regions, etc. Others asked if there is any value to talking about such a right if, upon examination of the actual social situation, there does not seem to be any realistic scenario of political and social change that would make the achievement of such a right a realistic possibility. Others voiced concern about expressing these matters in a language of rights that makes no mention of patients' responsibilities for their own dental health. And many members acknowledged that a proposition that underlies this proposal-namely, that there are aspects of human well-being, including some level of dental care, that ought to be secured for all people independently of market forces-raises such fundamental issues of social and political philosophy that no consensus could be reasonably sought on the proposal until these issues have been carefully examined.

In sum, the Blue Group demonstrated in its interactions that there are some areas of deep agreement about values in the dental care community, as well as areas of value conflict that involve deep disagreements. We demonstrated that these matters can be clarified in useful ways that build consensus where that is possible; and we also demonstrated that, in an environment of respectful dialogue, even the deepest of value differences can be explained and discussed in ways that can support mutual respect and greater collaboration. We left Ethics Summit I hopeful that more and broader dialogue of this sort is in our future.

Response to Unethical Behavior in Oral Health Care

Bruce Peltier, PhD

Abstract

By establishing appropriate "rules for discussion," it was possible for a diverse group of professionals involved in oral health care to reach agreement on several aspects of defining, confronting, and preventing unethical behavior. A set of specific recommendations is offered, centered in the perspective that patient well-being is paramount.

diverse and distinguished group of practitioners and leaders in American oral health addressed the following question: What do we do about members of the dental care community who behave badly? How do we identify such behavior, when and how do we confront it, and how do we prevent it from happening again in the future?

This group included leaders (Presidents, CEOs, and representatives) of important national organizations such as the American Dental Association, Oral Health America, the American Dental Assistants' Association, the American College of Dentists, the American Dental Hygienists' Association, and the American College of Prosthodontists. Our group, the Green Group, also included several CEOs and presidents from the managed care and brokered care arenas. One member of a state dental board represented the American Association of Dental Examiners, one dean of a dental school joined us, there was one commanding officer of a Naval dental center, one editor of a dental trade journal, and even, believe it or not, a dental student (representing the American Student Dental Association). The facilitator, a psychologist by training, is a teacher of ethics at a dental school. This was a well-rounded group.

We began by trying to get to know each other, to discern the assumptions each of us brought to the experience. It is not an everyday occurrence to find these constituencies sitting around the table together (unless the game is negotiation, perhaps), and we acknowledged the natural or perceived tension which can exist between "practitioner types" and "business types." We established a few basic ground rules allowing for free and open speech, respect for the potentially foolish ideas of others, and perhaps, to set the scene for collaboration and cooperation. The ideal goal, of course, was synergy, the 2 + 2 = 5 phenomenon that occurs when the product of a group of people working together is greater than the sum of what all the individuals could have produced in isolation. This is what we were after, hopefully some ideas or recommendations that we could not come up with unless we took the time to listen to people who probably had a different point of view.

We reviewed Discursive Ethics. If ethics is the active process of reflection on right and wrong, and what to do about it, then ethics really requires a discussion, and the process of discussion ought to produce something representative of the views of a community of people. Ethics are discovered and understood in discussion.

We started the discussion by asserting that law and ethics are not necessarily synonymous. While ethics and law inform each other, and they often produce the same conclusion, they must be allowed to function independently in order for us to truly benefit from a discussion of ethics. Law is important, but if we simply discuss legal issues we function as police or lawyers. That was not our task. We decided to address issues of right and wrong, in our case, how to respond to behavior that is wrong. We decided not to focus exclusively on illegal behavior, for some actions can be legal but still wrong. We also differentiated ethics from defensive jurisprudence, something that many dentists immedi-



Dr. Peltier is on the faculty of the School of Dentistry, University of the Pacific, 2155 Webster Street, San Francisco, CA, bpeltier@uop.edu.

Ethics Summit I

ately think of when ethics are mentioned. We use defensive jurisprudence when we do all of the legal things necessary to stay out of trouble. Defensive jurisprudence ("document, document, document") is extremely important, but it is not the same as ethics. Ethics is the systematic process of reflection on right and wrong and what to do about it. Doing the right thing has the potential to put one's self in harm's way from time to time, while defensive jurisprudence has self-protection as its typical goal.

Identifying Unethical Behavior

The first step is to decide what is right and what is wrong, of course, and we deferred this task to the group to which it was specifically assigned. We decided to set up three categories of people or reasons why people would be associated with unethical behavior. We figured that, later on, we might decide to respond differentially to people in the different categories.

First, we reasoned, there are people who are incompetent, and their incompetence causes them to do things which others perceive to be wrong. A second group of people are impaired for some reason, and their impairment causes bad behavior. A third problematic group are people who do bad things but are not incompetent, are not ignorant, and are without impairment. We called them malevolent ... just plain bad. Perhaps they possess anti-social motivations, perhaps they are selfish in their value structure, maybe they are too ambitious, or perhaps their narcissism prevents them from doing the pro-social things expected of health care providers. We weren't sure.

We chose a fairly wide variety of areas for the focus of our discussion. These were: quality of care, appropriateness of conduct, evidence-based approaches, misrepresentation, conflict of interest and the disclosure of same, research, qualifications, insurance reporting, and the ethical conduct of business in the dental care purview. After considerable discussion, we concluded that the best way to decide about right and wrong in these areas is to take the "*patient's well-being*" perspective. If we evaluate behavior from this point of view, we might have a

better chance of finding a path or a spectrum of behavior that we could all agree upon. We all seem to agree that, at least in theory, this is what dentistry is all about: the well-being of our patients, the oral health of the public, even. If we can identify behavior that does a disservice to the well-being of our patients, we probably have identified unethical behavior, and this standard seems to apply whether one is a dentist, hygienist, assistant, broker of care, manufacturer, board member, researcher, teacher, or student. Each of us has our own sub-constituency, but all of us must answer, sooner or later, to the ultimate end user: the patient. If a person's behavior hurts the well-being of dental patients, it is probably unethical and merits a response. That's the tentative conclusion our group came to toter of moral courage? Is it a function of environmental reinforcement patterns? What if speaking up gets you fired or causes you to lose a contract? What if you lose a friend (or more likely, an acquaintance)? What if people begin to think of you as a grouch or a grinch or a griper? What if you blow it, and your impression turns out to be wrong? Are there things that organizations can do to motivate people to speak up? Are there mechanisms we could develop which might help us to confront each other? Are there institutional policies or procedures or traditions which must be confronted, as well?

We recommend the initiation of conflict management courses into dental education and continuing education. Formal CE units ought to be awarded for

f a person's behavior hurts the well-being of dental patients it is probably unethical and merits a response.

gether. We agreed that more thought and discussion was warranted, because we didn't have time to try to search out all the nooks and crannies in our argument. Maybe some other smart people will examine our conclusion in a follow-up Ethics Summit.

Confronting Unethical Behavior

Once unacceptable behavior is identified, we decided that it is obviously important to do something about it. Much of ethics in dentistry consists of serious handwringing, and we sure like to talk about how bad other people might be. We felt that if unethical behavior is spotted it ought to be confronted. We were familiar with the concept of whistle-blowing, and how it would be great if more people did it. But we wondered what forces were in effect which tended to limit effective confrontation. What motivates people to confront each other, face to face? What can we do to enhance that motivation? What does it take to get people to feel that they simply have to say something when they spot bad behavior? Is it a matcourses on how to confront other practitioners or patients in areas of ethical concern. Courses could even be promoted in effective "whistle blowing."

We examined the various avenues available for the effective confrontation of unethical behavior. We reviewed the existing mechanisms when behavior falls into each of our three categories of bad behaviors and produced the table on the next page.

We decided that there were a substantial number of avenues available for confrontation of practitioner behavior, even if some people are reluctant to use them. It was noted that students aren't always aware of these mechanisms, and that dental schools must include familiarization in the education of their students.

We speculated about the proper or most effective role for patients in this process. Do they need to be invited to become more involved in the identification and amelioration of unethical behavior in the field? Would this open a "can of worms?" Do we welcome patients who might have something negative to say about dentists, hygienists, or some aspect of their care? How could patients be encouraged to identify and confront unethical behavior without sending them the wrong message? It is in everyone's best interest for patients to believe in their providers of dental care, in the products they buy, in their dental plan, and in their state regulatory agencies. What is the proper role of patients in the confrontation of poor behavior, and how can we encourage it, we wondered.

We discussed the role of regulatory agencies. Are we set up in ways which promote the active and effective confrontation of bad behavior? Do our boards do what we want them to? Certainly it is central to the function of regulatory agencies to catch and dispose of the people who are doing the bad things. But are they positioned to do this in the way that we desire, and are we willing and able to help them do this? What about state boards with limited budgets and more bad actors than they can handle?

Finally, we discussed consequences. We wondered about whether the consequences reflect our sense of proportion, as well as what we think is right and wrong. Maybe we need to rethink the consequences for various types and degrees of negative behavior. How can we be sure that the punishment fits the crime? Sometimes bad behavior is overlooked; other times behavior that doesn't really seem to hurt anyone is severely punished. What about behavior that simply excludes people from care, but doesn't actively harm them?

While we considered all of the questions above, we decided on a framework for future discussion and action. The question of enhancing the confrontation of unethical behavior can be best understood by taking two perspectives: First, find ways to increase the moral courage and motivation of people who observe and identify such behavior; second, lower restrictions and barriers to confronting and reporting. Some people associate whistle blowing with snitching. This perception is almost certain to inhibit our ability to "police" our own profession. We decided we need to encourage and reward people to do it, and at the same time make it easier to do. There is a clear need to confront each other from time to time, and The reporting and consequences of unethical behavior grouped by its type.

Incompetent Behavior

Keporting
One-to-one
Peer review
Regulators
Damaged party
Impaired Behavior
One-to-one
Peer review
Regulators
Damaged party
Malevolent Behavior
One-to-one
Peer review
Regulators
Damaged party

<u>Consequences</u> Mandatory CE Loss of privileges Restrictions Restitution

Mandatory treatment Mandatory treatment Restrictions Restitution

Evaluation Loss of privileges Loss of freedom Restitution

our professional autonomy depends upon it. If we can't take care of ourselves, the public will authorize someone to step in and take care of us for them.

Preventing Unethical Behavior in the Future

The third major area we considered was prevention. We thought a lot about the relative futility of trying to catch the bad guys and punish them, even though these things must be done. Negative behavior must be confronted.

Prevention holds more promise. We thought it might be important to define the forces which drive bad action, which cause it to increase or decrease. We decided to review the forces which reinforce it or tend to extinguish it. As psychologists like to point out, it is futile, even silly, to expect behavior A when you are reinforcing for behavior B. It is likely that different forces drive people who are in different positions in health care. It is also likely that aside from money, the specific forces which influence private dental practitioners are not the same ones which drive manufacturers or brokers of care or students. But we can rely on several general forces which probably influence all of us: social approval, feelings of competence and accomplishment, free time, the promise of security in the future, power, and control. Our group would welcome an inventory of the specific motivating forces in each of the professional communities within dentistry. It is possible, likely even, that some of these forces need to be rearranged.

We wondered about resources available to promote ethical behavior. Is this a good time to invest in pro-ethical promotion? Would money be well spent in the active promotion of positive behavior in the dental care arena? Are resources available? Is there enough real interest in these issues? Do people care

Ethics Summit I

enough to put their money where their mouth is? Our group guessed that there is enough serious interest, and that it is in our collective interest to do so. We also recommend that we identify the resources which are already available in various forms. There are people in the dental health community who can make rely on dentists for formal and informal training in this area.

Some also felt that students must be taught good business skills, on the assumption that such skills enable a person to choose the higher ground. Poor business skills, in an increasingly commercial environment, were thought to increase

We recommend the initiation of conflict management courses into dental education and continuing education.

a contribution, and there are existing institutions and programs which are set up to help with this important task.

The Green Group spent some time reviewing ethics education, and those who work at dental schools shared information about the amount and kind of education that modern dental students. hygienists, and assistants receive. Expected competencies currently exist in the teaching and learning of dental ethics, and dental schools are well aware of them. Today's dental student receives far more explicit preventive ethics training than dentists trained in the past. These students have a distinct advantage when it comes to pro-active prevention of bad behavior and the promotion of good in the field today. We endorsed this trend. Some members of our group openly advocated for the indoctrination of students into a particular highly ethical way of thinking. It was their view that we don't just need to "explore" ethics with students, but rather we should mold them into the kinds of professional citizens we desire. Without such a strong stance, it was felt that current and future market forces are likely to sweep them away (in the direction of bad behavior). Group members also weighed in with strong opinions proposing a zero tolerance policy toward student cheating. We commented on the important responsibility that dentists have for the ethical education of their assistants, who are likely to

the likelihood of unethical behavior. Perhaps a dentist whose practice is struggling might look for ways to cut corners, and bad behavior might become more attractive.

The potential role of the Professional Ethics in Dentistry Network (PEDNET) in the education of dental professionals was noted. PEDNET is a well established coalition of ethics educators and consultants in dentistry, and they have prepared a series of workshops and trainings which are available to the dental community all over the country. Most of the ethics educators in American dentistry are members. PEDNET's programs represent a rarely used resource which could potentially make a significant impact on the ability of dental personnel to prevent bad behavior, understand the specifics of right and wrong, and encourage highly ethical behavior in the field.

Once again, the issue of moral courage arose, and the risk associated with ethics and taking a stand were emphasized. There is no doubt that there is risk, even in preventive approaches to the promotion of good ethical behavior.

Our group came up with some specific recommendations in the area of prevention. We recommend that constituent groups (who haven't already done so) develop ethics codes specific to their own situations and needs. No one else can do this for them, and a well-conceived code can go a long way toward encouraging positive behavior if it is taken seriously by the important people in an organization.

We also recommend ongoing conversation across constituent groups. We really need to continue to talk and listen to each other, and we rarely get this chance. We advocate for the inclusion of manufacturers, business people, hygienists, assistants, and representatives of the lay public, our patients, in this discussion. It is astonishing sometimes (if we listen), to hear what our patients think of us and our behavior. They simply must be included in any important discussions of propriety. On the other hand, it is sometimes patients who are active participants in efforts to defraud brokers of care. They have responsibility, too, and perhaps they can help us understand how the system really works. Sometimes all they seem to care about is the cost of their dental care. What do patients really expect? Have we "trained" them to think and behave in certain ways which aren't in their long-term best interest? Active

We also recommend ongoing conversation across constituent groups.

efforts must be made to include all of these groups, or the discussion simply will not happen.

We urge the development and widespread promulgation of a "Patient's Bill of Rights." The California Dental Association has written such a document, and it might serve as a good starting point for such a document. We think that this kind of a bill is important because it forces us to take the view of the patient, and, as mentioned earlier, we think it helpful to take the *patient's well-being* as an orientation to the identification and promotion of positive ethical behavior. As a result of our work together, we created the following recommendations.

Statement: As a coalition of concerned groups involved in oral health care, we have joined in a commitment to create an environment that fosters ethical conduct and relationships, confronts unethical behavior, and prevents unethical behavior in the future.

Specific Action Recommendations

As a result of our two-day conversation, we developed several other specific recommendations, some of which might be controversial and potentially powerful. These recommendations centered around the task of continuing the education for all of us and ensuring that we all possess a high degree of awareness of the central position of ethics in the delivery of dental care.

We think that it is essential that each community within dentistry find a way to continue to reflect and educate on ethical issues. What follows are specific recommendations to begin to accomplish this goal:

1. Addition of an ethics section to national board examinations, Parts I and II. This section would be independent from any sections which examine for law.

- 2. Addition of ethics sections to specialty certifying examinations.
- 3. Addition of annual continuing education requirements in ethics. This would be a requirement to take courses specifically in ethics, differentiated from the law or defensive jurisprudence or liability management. We also recommend that CERP establish a category for ethics. California's state board recently adopted a requirement that all licensees take a three-unit course in the Dental Practice Act (the law) during the next renewal period. There is no reason that states could not require continuing education in ethics, as well. The public would probably support such a requirement, and practitioners who oppose it would find themselves in a difficult position.
- 4. Brokers of care should involve themselves in such trainings. Perhaps they would even find it in their self-interest to sponsor workshops, as well as to participate.

We conclude our recommendations by noting that dentistry would be well served to view ethics as the central and primary vehicle for the delivery of care, as opposed to technical excellence or bottom line revenue. This is not to say that technical excellence is unimportant. Good dental care depends upon it. But technical excellence without integrity is worthless. Good dentistry unaccompanied by sound business practices will ultimately fall apart. But sound ethical practice is the foundation for all of these other central elements. This view is facilitated through the patient well-being point of view; that is, let's decide about what's right and what's wrong by consulting the patient's well-being. In doing so, we take our own perspective and include the perspective of that patient concurrently into our analysis. The one or the other viewpoint alone is inadequate. This process is done in discussion among the community of stakeholders, all who have an interest at stake. If we are to accomplish these goals, we are probably going to place increased demands upon ourselves, but we think it will be worth it.

Defining the Ethical Organization in Oral Health Care

Donald Patthoff, DDS, FACD

Abstract

This group was charged to explore what it might mean for an organization (as opposed to an individual) to be ethical. The group explored issues and key assumptions, produced a single, leading recommendation, supported by several additional suggestions.

question that arises immediately when considering ethics and organizations is the relationship between the organization and its members on matters of ethics. Can an organization, for example, expect that its members will take the same ethical position on issues that the organization does? Must members conform to the organization's public position on ethical or even policy issues?

Defining Key Issues

The Yellow Group was divided into three subgroups of six each to debate issues around the question of whether an organization has the right to say what its members will and will not do—whether the organization can speak for others as a moral agent. One subgroup decided in the affirmative, but insisted on the proviso that the organization cannot work in a vacuum and that all expertise and information available must be used. The second group took an opposite position, preferring that organizations act only in an advisory capacity and that they pass important information along to their members. This subgroup also made an exception for illegal acts (as opposed to unethical ones), saying that organizations should hold their members responsible for not violating the law. The third subgroup decided in favor of organizations holding their members to a code of conduct. This would be appropriate only, however, if a set of core values could be identified, if issues are germane to the purpose of the organization, if the organization is a voluntary organization, and if the organization's values are also grounded in broadly accepted cultural norms such as the "Golden Rule."

A second issue addressed was the extent to which various individuals or groups have "rights" in the area of health care. A right is an expectation that an individual is entitled to be treated a certain way because of who they are and is not conditional upon their own behavior. If oral health care were a right, for example, everyone would be entitled to it, whether they could pay for it or not. If informed consent were a right (virtually everyone agrees that it is), everyone would be entitled to it regardless of their behavior.

The group was divided on what it might mean to say that oral health care is a right, and after extensive discussion concluded that rights language would not move the discussion forward in a positive fashion. The group also felt that members of professional organizations are not entitled to "membership rights" solely based on membership (paying dues). The benefits of membership in professional organizations are contingent on appropriate professional behavior. This requirement of the behavior of the member is counterbalanced by the "right" of members to voluntarily withdraw from membership.

The group spent considerable time searching for the basis of member responsibility. Two alternatives were considered in detail. In the corporate model, affected individuals are called "stakeholders." These are people who have a recognized concern in the outcome of the organization's performance. In the professional model, the most obvious affected individuals are called the "chief client" or, more typically, the patient.

The relationship between organizations and stakeholders is not the same as the relationship between organizations and patients. Stakeholders operate in an arms-length relationship, where it is assumed that each party looks out for their own interests. In the professional model, it is assumed that professionals have the patients' interests in mind. The relation-



Dr. Patthoff facilitated this group; he maintains a private practice at 300 Foxcroft Avenue, Suite 302, Martinsburg, WV 25401, patthoff@ intrepid.net. ship is not competitive. The relationship between professional members and the organizations they belong to should be based on the same model as the relationship between professionals and their patients.

Finally, the group noted the distinction between ethical behavior and legal behavior. This is a more troublesome issue in the case of organizations than for individuals because organizations are often "legal entities." Although legal sanctions can be brought against both the organization and its (culpable) officers when the law is broken, it is not clear who is responsible when the organization takes an unethical stand.

The issue of a member's right to moral dissent within an organization was not discussed.

Key Assumptions

Early progress of the group was dependent upon agreeing to certain assumptions, particularly reaching consensus on the definitions of important terms.

Cohesion: One important characteristic of organizations is cohesion. This was agreed to be an organization virtue, a positive obligation to search for and maintain common action even when some differences remain among members. Cohesion is possible because the members recognize the value of the organization's overall goals and accept common core values. By definition, once an organization is no longer sticking together, it is no longer an organization.

Adhesion: The group noticed that individuals and groups sometimes act in concert despite lacking common core values. This phenomenon was compared to the "pressure" of events, something like the push used to get a sticky note to adhere to a surface. Adhesion allows temporary alignment of the interests of organizations and their members, without assuming that these alliances will be permanent. Much of the politics of dentistry or any other field can be explained by adhesion of groups in various combinations.

Subsidiarity: This concept was identified, but not fully developed (perhaps because no one could pronounce it). Subsidiary relationships involve organizations accepting the values and supporting the actions of other groups of which they are a part. For example, several of the specialties in dentistry represented in the group stated that they follow the ADA Code of Ethics. The relationship of a subsidiary organization to a parent organization is probably much like the relationship of an individual to an organization.

Solidarity: Following heated discussion, the term solidarity was felt to have too many overtones of excessive allegiance of members to the organization. It was the group's opinion that an appropriate middle ground must be maintained, allowing members freedom from excessive rules and unquestioning allegiance and appropriate guidance and a coordinated public front. The extremes are dictatorial group control on the one hand and wishy-washy social clubs on the other. The touch stone for this solid

the organization's existence-organizations do not long exist without clear missions. This is somewhat different from individuals who might seek to discover the "meaning of life," but are not at liberty to invent one and do not cease to exist when their mission is dim. In other words, organizations are created to serve focused interests of members, interests that can be better advanced collectively than individually. The group felt, however, that the ethical position of every organization must extend beyond seeking its focused interests. Thus, organizations might have two levels of ethical codes: one that helps orient its members toward the organization's common interest and another, more fundamental one that places the organization as a "good citizen" in society. It was also felt that organizations should voice their ethical norms first in terms of principles and virtues that are broadly accepted and then to

he ethical position of every organization must extend beyond seeking its focused interests.

middle ground is probably based in ethics or core values.

Polemic and Critique: In our discussion of the relationship between organizations, such as dentists and hygienists or groups with different views on financing oral health care, the group found it useful to distinguish how the organizations handle their differences. The term polemic was defined as focusing on the person or organization holding a differing view (presumably based on different information, core values, or self-interests). While this can help identify and hold someone accountable, it can also lead to a belief that differences can best be resolved by eliminating or crippling the other. Critique, on the other hand, focuses on the issues, the differences themselves. This framing of the conflict is more likely to lead to fair and long-lasting solutions.

Characteristics of the Ethical Organization

The mission of an organization is important because it identifies the reasons for apply their norms to specific codes of conduct relevant to their mission.

Against this background, the group defined an ethical professional organization in terms of the following eleven characteristics:

- 1. Contributes to the common good
- 2. Uplifts its members and remains consistent with its mission
- 3. Accepts accountability and defines those areas for which it is accountable
- 4. Has an ethical structure; Code of Ethics
- 5. Addresses social issues, defines values beyond market appeal, and lives a moral life consistent with its articulate ethics
- 6. Is committed to the priority of the patient's well being
- 7. Safeguards the patient's right to some level of care
- 8. Safeguards the dental professional's rights
- 9. Supports the decision-making process in controversial ethical/moral issues

Ethics Summit I

- 10. Develops mentors for the betterment of the profession
- 11. Defines parameters for self-monitoring and policing of competence

The group recognizes that it probably overlooked other important characteristics and made no attempt to place the characteristics in priority. Based on these characteristics, however, the group did come to the consensus that organizations not only have a right to define acceptable conduct, but have an obligation to do so as well. This follows because both the profession and the community require moral enculturation. Although some elements of organizational culture may be appropriately reflected in both the organization itself and in its members; other, more personal ethical patterns, will be reflected only in the members, but the organization is ethically responsible for enculturation.

Seven actions were identified as being part of the obligation of an ethical organization with regard to enculturating its members. These include:

- 1. Write a basic, universal code of ethics
- 2. Publish the code
- 3. Disseminate the code to those concerned
- 4. Require acceptance of the code by members (recognizing that such codes are always "works-in-progress")
- 5. Advocate the code and the conduct it voices
- 6. Enforce noncompliance (do not tolerate unethical behavior or become indifferent when it is difficult or challenging)
- 7. Maintain comparative assessment to ensure consistency with other professional organizations and with the organization's own mission

Fundamental Recommendation and Action Items

The group next turned its attention from characterizing an ethical organization in the abstract, to the concrete steps that can be taken to promote the creation and nurture the development of such organizations in the profession. Numerous specific actions were proposed, but the catalyzing recommendation addresses a practical method for advancing ethical concerns in oral health care.

Create an alliance of organizations representing the greater dental community that will develop a strategic plan to:

- Gather and create information to disseminate to the greater dental community
- Focus on affecting change as a result of the dissemination efforts
- Establish and promote continuing education and further development of ethics standards (norms)
- Provide human and financial resources for ethics activities

The mission of this recommendation is to reinforce the principles of ethical behavior in light of new and more complex oral health care delivery environments and challenges.

While the Yellow Group agreed that the single most pressing concern is to create a structure that is encompassing of the diverse concerns in oral health care in order to advance ethical solutions to our common problems, many other action items were identified. Although two rounds of brainstorming and critique were conducted for the purpose of identifying the range of steps to be taken next, the following list is offered in "draft" form and without ranking by importance.

- 1. Disseminate results of the Ethics Summit in seminars and publications
- 2. Build seed money for an alliance or foundation to continue the process and efforts of Ethics Summit I
- 3. Add ethics to the National Boards and others
- 4. Fund additional conferences and work on the ethics issues of the greater dental community
- 5. Establish a challenge grant to fund more efforts and wider distribution of ethics information throughout the greater dental community
- 6. Create a center for the study of ethics in the greater dental community

and fund a core group to catalyze and facilitate the dialogue needs of each member of the greater dental community

- 7. Establish criteria for ethics scholarship; this would evolve around a required student paper based on personal life experiences or a case study illustrative of what ethics means
- 8. Focus on the enculteration of ethics throughout the entire greater dental community by all means available
- 9. Provide a means for all members of the greater dental community to contribute to the process of the discussions, for example, through an alliance
- 10. Establish a "round table" working group, perhaps made up of smaller groups to develop a strategic plan to refine goals of the ethical organization and then implementing them
- 11. Define our expectations regarding the ethics of the greater dental community and emphasize the key phrase of "care for the individual person"
- 12. Assemble the resources—people and money—to work on the ethics of the greater dental community
- 13. Establish a Center for the Study of Organizational Ethics of the Greater Dental Community
- 14. Use outside resources to bring together ethics processes and fund an ethics chair in every dental school
- 15. Establish a continuing education process with requirements that all are involved, particularly when there are licensure renewal requirements
- 16. Establish prerequisite ethics course requirements
- 17. Create a copyrighted seal of approval or acceptance
- 18. Establish a continuous communication of ethics standards and values for the greater dental community involving current requirements of ethic and information, and demonstrate that average malpractice or ethical misconduct is being reduced.

Selection of Restorative Materials, Reasons for Replacement, and Longevity of Restorations in Florida

Ivar A. Mjör, BDS, MSD, MS, DR ODONT; and Jacquelyn E. Moorhead, BS, MS

Abstract

The purpose of the present study was to obtain information relating to the types of restorative materials used, the main reason for replacement of restorations, and the age of failed restorations. Dentists in general dental practice in Florida were invited to record details from their own work pertaining to restorations. The diagnostic criteria were described and coded. The clinicians were not calibrated in the use of the criteria but they could call in for further explanation if needed. The 27 clinicians involved placed 2,035 restorations of which 53% were replacements of failed restorations. The increased use of resin based restorative material was clearly evident including posterior composites. The clinical diagnosis secondary caries was the most common reason for replacement of amalgam (56%) and composite (59%) restorations. Only discoloration showed a statistically significant difference in the reason for replacement of the two types of materials. The median age of the replaced amalgam restoration was 15 years and that of composite restoration was 8 years.

A primary aim of dental research is to improve the dental care provided to the public. The identification of problems encountered in the treatment of patients in general dental practice is an essential part of this search for improvement. Problems that are not recognized, described, illustrated, or in some other way presented to the dental research community are unlikely to ever be solved. The responsibility for this identification and communication remains with the practicing dentists.

Many problems related to operative dentistry have existed since the early days of the dental profession and most of them are still present. Secondary or recurrent caries is an example in this context; so is the lack of well-defined criteria for what constitutes a failed restoration (Mjör & Wilson, 1997).

The results of surveys carried out in several countries have shown marked changes over the last twenty years in the use of dental materials. These surveys have collected data related to the selection of materials for different classes of restorations and the clinical diagnoses that result in the replacement of dental restorations (Mjör, 1997a,b). For some restorative materials, the reasons for failure have remained much the same, e.g., amalgam, but for others, e.g., resin based composite, they have changed. Limited information is available from general dental practices in the USA, with regards to these aspects of operative dentistry. The present study was, therefore, initiated among dentists in Florida to:

- obtain information on the types of restorative materials used for the placement of initial restorations in teeth
- obtain information on the types of restorative materials used for replacement of dental restorations
- examine the main reasons for replacement of different types of restorative materials
- record the age of the failed restorations

Particular attention was paid to determine if the reasons for replacement of



Dr. Mjör is in the Department of Operative Dentistry and Ms. Moorhead is in the Division of Biostatistics at the College of Dentistry, University of Florida; imjor@dental.ufl.edu.This study was supported by NIH/NIDR grant 2 P50 DE09307-08.



Manuscripts

restorations differed between materials used in Class I and Class II restorations.

Materials and Methods

Two groups of dentists were invited to participate in the survey. A group of twenty alumni from the University of Florida College of Dentistry (UFCD) comprised Group 1 and eighteen clinicians who participated in a UFCD Comprehensive Dentistry Program comprised Group 2. Following their participation in the survey, the clinicians in Group 1 were invited to participate, free of charge, in a one-day continuing education course on criteria for assessment of restorations.

The first part of the survey involved demographics and background information including the number of years since graduation. The participants were then asked to estimate the current and past (1-5, 6-10, 11-15, or more than 15 years ago) use of restorative materials for Class I and Class II restorations. The estimates were expressed in percentages for amalgam, composite, glass ionomer, and resin-modified glass ionomer materials or other materials, including those used for inlays, onlays, and crowns. They were then requested to report on one hundred consecutively placed restorations. The criteria and codes for placement and replacement of restorations were supplied with the recording forms are shown in Table 1.

The participants were asked to read the described diagnoses and codes. Any questions regarding these issues could be directed to one of the investigators (IAM) by phone, fax, or e-mail. Starting on a specific date, the participants were asked to record consecutively all restorations placed and replaced, each patient's age, gender, tooth treated, and the type of restoration. The reason for placement or replacement of the restorations was then noted using the codes provided. The materials of the new and of the old restorations were noted, again using codes. Finally, the clinicians were asked to indicate the age of the old restoration to be replaced, provided this information was available in the patient's treatment

Table 1. Codes and criteria for placement of initial and replacement restorations.

- The diagnoses and codes used for placement of the first restoration on a tooth surface were:
- Primary caries (PC) is decay on a surface not directly associated with any existing restoration. If interproximal caries results in the removal of an existing sound restoration, PC is recorded.
- Non-carious defects (NC) are typically wedge-shaped toothbrush abrasions, eroded sites, or fracture of intact teeth due to trauma.
- Other reasons (OP) include any other reasons for placing a restoration in a previously unrestored tooth. Please use the "Special Notes" column for details whenever possible.
- The diagnoses and codes used for replacement of restorations were:
- Secondary/recurrent caries (RC) is that which is detected at the margins of an existing restoration.
- Marginal discoloration (DM) leading to replacement of a toothcolored restoration is found at the tooth/restoration interface.
- Bulk discoloration (DB) includes any mismatch between the color of the body of the restoration and the tooth which leads to replacement of the restoration.
- Marginal fracture/degradation (FM) is often referred to as "ditching" of restorations. Only those restorations with marginal fractures or degraded margins but without caries should be recorded in this category of failure.
- Bulk fracture (FB) of a restoration includes isthmus fracture or any fracture through the main body of the restoration.
- Fracture of tooth (FT) is any kind of tooth fracture adjacent to a restoration, for example the fracture of a cusp or an enamel margin.
- Poor anatomic form (PA) as a diagnosis for replacement of a restoration includes any loss of substance due to material degradation and wear.
- Pain/sensitivity (PS) of any kind requiring replacement of a restoration is listed under this category.
- Change of material (CM) is used to denote replacement of serviceable restorations where the change per se was the reason for the replacement rather than the failure of a restoration.
- Other reasons (OR) include any other reasons for replacement of restorations than those listed above. Details may be provided in the "Special Notes" column.

record. The age was noted in years, rounded off to the nearest whole year. If less than one year old, the number of months was indicated by a fraction of twelve. Space was also available for special notes for each restoration. Two reminder notices were sent to Group 1. Since Group 2 participated in a long term comprehensive program at UFCD, the survey was considered to be part of the course.

The clinicians were not calibrated in the use of the criteria employed in the present survey. Furthermore, some of the information requested was based on estimates. The results will, therefore, largely be presented as a descriptive study with statistics limited to Wilcoxon nonparametric analyses and Chi-square tests for significance with regard to the reasons for replacement and longevity of amalgam and composite restorations.

After the survey had been completed both the respondents and the non-respondents in Group 1 were sent a questionnaire related to why they did or did not respond to the survey.

Results

Eleven of the 20 clinicians in Group 1 and 16 of the 18 clinicians in Group 2 returned the survey forms; a response rate of 71%. However, many of the participants in Group 2 did not complete information on all 100 restorations as requested. Thus, the requested information was available on 2,035 restorations, 1,100 from Group 1 and 935 from Group 2. Two participants called in to clarify how to record the removal of an intact occlusal restoration as part of the preparation of a Class II restoration due to primary caries on the interproximal surface.

Demographics

Response to the gender distribution of the clinicians was recorded on 24 of the 27 forms and included 6 females and 18 males. The mean time since graduation from dental school was 15.75 years with a range of 7 to 39 years. Almost two thirds of the clinicians reported having their practices in an urban setting.

The mean age of the patients treated was 41.8 years with a range from 3 to 89

years of age. Ninety percent of the patients were 15 years or older. The female/ male ratio of the patients was 56/44.

Use of restorative materials

The clinicians' estimated use of restorative materials is shown in Fig. 1. The reported current use and that from 1-5 years were based on estimates by 23 clinicians, 6-10 years ago was based on estimates by 21 clinicians, 11-15 years ago on estimates from 16 clinicians and those from more than 15 years ago by 9 clinicians. The range of estimated current use of both amalgam and composite materials was from 0 to 95% while the range more than 15 years ago for amalgam was 40 to 100% and for composite 0 to 30%. The mean estimate for the current use of glass ionomer restorations was 3.2% and for resin modified glass ionomer was 2.5%. These two groups of materials have therefore been combined in Fig. 1.

"Other" materials were mainly used in crown and bridge restorations, usually alloys with or without ceramic facings, but also in a few all-ceramic materials. Their estimated use has increased from about 11% from more than 15 years ago to 14% 6-10 years ago. For the last 5 years "other" materials have remained almost constant at about 18% of all restorative materials used (Fig. 1). Of the 2,035 restorations placed, 42% were placed due to primary caries, 5% in noncarious defects and the rest were replacement of restorations.

The recorded frequency of materials in the replaced and the newly inserted restorations are illustrated in Fig. 2. Two thirds of the old (failed) restorations were amalgams and less than a third were composite restorations. The relative number of amalgam and composite restorations was similar for replacement restorations. An approximately equal percentage of amalgam and composite materials were used in new restorations. The selection of materials for the treatment of primary caries, i.e., the first restorations of the surfaces involved, indicated a slightly higher distribution of amalgam to composite restorations and minimal use of glass ionomer and other materials.

Figure 1. Estimated use of restorative materials expressed as percent of current use and at five-year time intervals up to fifteen years ago and more than fifteen years ago.



Manuscripts

Figure 2. Percentage distribution of amalgam, composite, glass ionomer, and "other" materials in old restorations which were replaced in restorations replacing failed restorations, in all the new restorations irrespective of reason for placement, in the first restoration of any surfaces due to primary caries, and in new restorations of non-carious defects.





"Other" materials were also more commonly used for the replacement of restorations rather than for other clinical situations (Fig. 2). Glass ionomer materials were not selectively used for primary caries nor for replacements. However, glass ionomer type materials were used in 15% of restorations of non-carious defects while 79% were treated by composite materials.

Types of restorations

Only 2.9% of the restorations were placed in deciduous teeth and the data were included in the results. Forty-seven percent of all the restorations placed in permanent teeth were in the first and second molars. The overall distribution of restorations by class showed that 67% of all restorations were Class I and Class II, including multi-surface restorations. The distribution of classes of restorations according to material is shown in Fig. 3. Class I and Class II restorations, including multi-surface restorations, comprised 88% of all amalgam restorations and 52% of all composite restorations. Glass ionomer materials were predominately used in Class V restorations.

Reason for replacement of restorations

Table 2 outlines the reported reasons for replacement of amalgam and composite restorations, i.e., the diagnoses which led to their replacement. Secondary caries was by far the most common clinical diagnosis for both materials followed by fracture of the restoration. Discoloration was a failure characteristic for composite materials while fracture

of tooth was more commonly associated with amalgam than composite restorations. "Other" reasons included diagnoses such as poor anatomic form and pain or sensitivity. Chi-square analyses showed that the reason for failure was independent of the restorative material used, except for discoloration (p=.0001)-discoloration being cited as a reason for replacing composite restorations more frequently than for replacing amalgam restorations. Nearly significant values for significance were found for marginal fracture (p=0.059) and lost restoration (p=0.070).

Separate analyses of the reasons for replacement of Class I and Class II amalgam (n=532) and composite (n=65) restorations showed no significant association (p=.613) between the two types of restorations and reasons for failure. Further subdivision into Class II amalgam (n=345) and Class II composite restorations (n=30) showed no significant association (p=.158) for secondary caries or pooled bulk and marginal fractures for these two materials. However, the uneven distribution of the types of amalgam and composite restorations, especially the low number of composite restorations, did not justify further subset analyses.

Age of failed restoration

The ages of 642 restorations, irrespective of type, were reported, including 413 amalgam and 171 composite restorations. The calculated mean age for the amalgam restorations was 15.0 years and that for composite restorations was 8.2 years. This difference was statistically significant (p=.0001). The corresponding median ages were 15.0 and 8.0 years. The age of only 39 "other" restorations (mainly castings) were recorded. One third of these restorations were 15 years old and the majority was between 10 to 20 years. Three of the six glass ionomer restorations that were replaced were 4 years old. Thirteen recorded ages of restorations did not indicate which material had been used.

Post-survey questionnaire

Fourteen of the 20 respondents in Group 1 returned the questionnaire regarding participation in the survey. The answers indicated that those who participated did so because they considered surveys of this type (1) to be important, (2) they liked being involved, and (3) they felt obligated to participate. Four of those who did not respond to the survey returned the questionnaire. Three of these indicated that participation would take too much time and one indicated that he placed few restorations.

Discussion

It is difficult to assess whether the present results are representative of general dental practices in Florida. The number of restorations reported is small and only 27 clinicians participated in the survey. However, the findings are in agreement with anticipated trends as far as selection of materials are concerned. The reasons for replacement of restorations are also in conformity with those reported in other practice-based studies, and the gender distribution and age of the patients and the clinicians involved appear typical for general practice in Florida. On the other hand, the participating clinicians must be regarded as a particularly interested group of clinicians who were active alumni and individuals who took part in comprehensive continuing dental education.

The results from this survey confirm the trend that tooth-colored resin based materials are gradually taking over as the main restorative material, even in stressbearing areas. More dramatic changes have occurred in countries where "the amalgam issue" has been more predominant than it is in Florida (Mjör, 1997a). This change will undoubtedly have an impact on the long-term cost of restorative dentistry (Mjör, 1992). The difference between materials in old (failed) and new restorations also reflect the change from amalgam to composite in that almost two-thirds of the old restorations were amalgam and about a quarter were composite restorations. For the newly inserted restorations, amalgam and composite restorations were fairly equally distributed, both with respect to materials

Table 2. Reasons for replacement of amalgam (n=623) and composite (n=262) restorations expressed as percentages.

<u>Clinical diagnosis</u>	<u>Amalgam</u>	<u>Composite</u>
Secondary caries	56%	59%
Fracture of restoration	21	15
bulk	9	7
margin	12	8
Discoloration	1	12
bulk	0.8	8
margin	0.5	4
Lost restoration	3	5
Fracture of tooth	9	2
Other reasons	10	7

selected for the treatment of initial lesions and for replacement of failed restorations. No-carious defects, including toothbrush abrasions and fracture due to trauma, were usually restored with resin based materials. The use of glass ionomer type materials was low, but relatively higher for restorations of non-carious defects than in any other situation (Figure 2) and predominantly in Class V situations (Figure 3).

The reasons for replacement of amalgam restorations in general practice have remained similar over time and in surveys from a number of different countries. Secondary caries, bulk and marginal fracture of restorations, and fracture of tooth are the main clinical diagnoses for replacement in practice based surveys (Mjör, 1981; Klausner & Charbeneau, 1985; Mjör, 1997b). These observations are confirmed in the present study. However, these results differ markedly from those in more controlled clinical studies (Letzel, van't Hof, Vrijhoef, Marshall, & Marshall, 1989; Osborn, Norman & Gale, 1991) where secondary caries was recorded as a minor problem. On the other hand, the reasons for replacement of composite materials have changed markedly over time (Mjör, 1993; Friedl, Hiller & Schmalz, 1995). Composites of the late 1970s were hampered by degradation (chemical erosion) wear of the restorations. This property has improved markedly over time, but the relative number of composite restorations replaced due to fracture of restoration has increased. Other clinically recorded problems, such as discoloration. have remained at the 10-20% level during the last two decades. Nevertheless, secondary caries continues to be the main reason for replacement of both amalgam and composite restorations.

The amalgam and composite restorations replaced in this study were older than those reported in previous crosssectional studies (Mjör, Jokstad & Qvist, 1990). The age of failed amalgam restorations was similar to that reported for gold castings (Mjör & Medina, 1993). A median longevity of 8-10 years is com-

Manuscripts



Figure 3. Percentage distribution of classes of amalgam, composite, and glass ionomer restorations inserted; O = other.

monly reported for amalgam restorations. Data from Michigan indicated an overall mean longevity of amalgam restorations to be 11 years (Klausner, Green & Charbeneau, 1987). Another study from the U.S. recorded the longevity of amalgam to be 10 years (Pink, Minden & Simmons, 1994).

Reports on the age of failed composite restorations, irrespective of type, indicate a longevity of 3.5-6 years (Punk, Minden & Simmons, 1994; Friedl, Hiller & Schmalz, 1995; Mjör, 1997b). Class I and especially Class II composite restorations have a relatively short longevity (Moffa, 1989; Qvist, Qvist & Mjör, 1990). However, it must always be kept in mind that longevity studies of restorative materials refers to "yesterday's materials." The effect of this situation is particularly important for materials which are newly developed or improved.

Longevity of restorations is considered to be a good measurement of success in restorative dentistry. It takes into consideration all factors affecting the quality of restorations, including material properties, patient factors like oral hygiene, and the proficiency of the clinician. The increased longevity of replaced amalgam restorations reported in this study and in a recent Scandinavian survey (Mjör, 1997b) may be affected by the change from amalgam to composite materials, and also by enhanced properties of amalgam over the last 20 years (Osborn, Norman & Gale, 1991). The 8year overall longevity of composite restorations in the present survey also compares favorably to other longevity data, but few reports on the longevity of composite restorations were available and the results are difficult to interpret. Often the material is too small, like in the present study, for subdivision to assess the longevity of different types of restorations. However, improvements of the resin based composite materials over the last 20 years and improved clinical techniques have undoubtedly had a positive effect on the longevity of these restorations.

Apart from primary caries, secondary caries is the most important clinical diagnosis identified in many studies, including the present. This diagnosis has the most profound effect on dental care, especially on adults. It invariably leads to replacement of restorations. Yet, much uncertainty relates to the true nature of these lesions and the difficulties associated with their diagnosis are well documented (Espelid & Tveit, 1991; Kidd, Toffenetti & Mjör, 1992; Bader & Shugars, 1992; Kidd & Beighton, 1996). Since secondary caries is usually diagnosed gingivally and interproximally (Mjör, 1985), a number of factors may affect the actual diagnosis and the development of the lesions. These areas are more difficult to inspect than other areas of the teeth and they are more difficult to restore optimally for a number of reasons, including access, visibility and local control of the environment. Marginal defects may also be related to material properties and improper handling of the materials, e.g., polymerization contraction, inadequate condensation and submargination. In addition, the gingival and interproximal areas are difficult to reach with routine tooth brushing.

Due to the uncertainty related to the diagnosis and nature of secondary caries, repair as an alternative to complete replacement of restorations should be considered (Mjör, 1993). Unfortunately, as pointed out by Bader and Shugars (1992) such alternative treatment has not been evaluated in clinical trials or in follow-up studies in general practice. Until the outcome of such studies are available, precautionary and preventive steps should be taken by both clinicians and patients to reduce the incidence of secondary caries.

References

- Bader, J.D. & Shugars, D.A. (1992). Understanding dentists' restorative treatment decisions. *Journal of Public Health Dentistry*, 52, 102-110.
- Espelid, I. & Tveit, A.B. (1991). Diagnosis of secondary caries and crevices adjacent to amalgam. *International Dental Journal*, 41, 359-264.
- Friedl, K.-A., Hiller, K.-A., & Schmalz, G. (1995). Placement and replacement of composite restorations in Germany. *Operative Dentistry*, 20, 34-38.
- Jokstad, A., Mjör, I.A., & Qvist, V. (1994). The age of restorations in situ. *Acta Odontologica Scandinavica*, 52, 234-242

- Kidd, E.A.M. & Beighton, D. (1996). Prediction of secondary caries around tooth-colored restorations: A clinical and microbiological study. *Journal of Dental Research*, 75, 1942-1946.
- Kidd, E.M.A., Toffenetti, F., & Mjör, I.A. (1992). Secondary caries. *International Dental Journal*, 42, 127-138.
- Klausner, L.H. & Charbeneau, G.T. (1985). Amalgam restorations: A cross-sectional survey of placement and replacement. *Journal of Michigan Dental Association*, 67, 249-252.
- Klausner, L.H., Green, T.G., & Charbeneau, G.T. (1987). Placement and replacement of amalgam restorations: A challenge for the profession. *Operative Dentistry*, 12, 105-112.
- Letzel, H., van't Hof, M.A., Vrijhoef, M.A., Marshall, G.W., & Marshall, S.J. (1989). Failure, survival, and reason for replacement of amalgam restorations. In K.J. Anusavice (Ed.) *Quality evaluation of dental restorations* (pp. 83-92). Chicago, IL: Quintessence.
- Mjör, I.A. (1981). Placement and replacement of restorations. *Operative Dentistry*; 6: 49-54.

- Mjör, I.A. (1985). The frequency of secondary caries at various anatomical localizations. *Operative Dentistry*, 10, 88-92.
- Mjör, I.A. (1992). The long term cost of restorative therapy using different materials. *Scandinavian Journal of Dental Research*, 100, 60-65.
- Mjör, I.A. (1993). Direct posterior filling materials. In G. Vanherle, M. Degrange, & G. Willems (Eds.) Stateof-the-Art on Direct Posterior. Filling Materials and Dentine Bonding (pp. 1-13). Leuven: van der Poorten.
- Mjör, I.A. (1993). Repair versus replacement of failed restorations. *International Dental Journal*, 43, 466-472.
- Mjör, I.A. (1997a). Selection of restorative materials in general dental practice in Sweden. *Acta Odontologica Scandinavica*, 55, 53-57.
- Mjör, I.A. (1997b). The reasons for replacement and the age of failed restorations in general dental practice. *Acta Odontologica Scandinavica*, 55, 58-68.
- Mjör, I.A, Jokstad, A., & Qvist, V. (1990). Longevity of posterior restorations. *International Dental Journal*, 40, 11-17.

- Mjör, I.A., Medina, J.E. (1993). Reason for placement, replacement and age of gold restorations in selected practices. *Operative Dentistry*, 18, 82-87.
- Mjör, I.A., Wilson, N.H.F. (1997). General dental practice: the missing link in dental research. *Journal of Dental Research*, 76, 820-821.
- Moffa, J.P. (1989). Comparative performance of amalgam and composite resin restorations and criteria for their use. In K.J. Anusavice (Ed.) *Quality evaluation of dental restorations* (pp. 125-133). Chicago: Quintessence.
- Osborne, J.W., Norman, R.D., & Gale, E.N. (1991). A 14-year clinical assessment of 12 amalgam alloys. *Operative Dentistry*, 22, 857-864.
- Pink, F.E., Minden, N.J., & Simmons, S. (1994). Decisions of practitioners regarding placement of amalgam and composite restorations in general dental practice settings. *Operative Dentistry*, 19, 127-132.
- Qvist, V., Qvist, J., & Mjör, I.A. (1990). Placement and longevity of tooth-colored restorations in Denmark. *Acta Odontologica Scandinavica*, 48, 305-311.

Manuscripts

Technical Glossary

Editor's note: In an effort to make research papers that contain technical concepts more "user friendly," the Journal will attach a technical glossary to these papers where it seems useful.

Generalizing from research findings: Scientific research is only useful if the findings reported in a study can be generalized to other situations. In making such generalizations, there are two types of mistakes to be mindful of: bias and random error.

Bias in empirical research means that the *conclusions* are not supported by the data (research data themselves cannot be biased). Bias involves systematic error. Asking ADA members whether they support managed care is not biased; reporting that the numbers obtained in this manner represent the opinions of dentists is. Sometimes the bias appears in the discussion and conclusion sections of a paper. It is the responsibility of journal reviewers and editors to ensure that this does not happen. By far the most common occurrence of bias in using research data is unwarranted generalizations made by the reader. This is likely to happen when research results are applied in situations that differ from the situations where the data were collected.

The methods section and the beginning of the results section in a wellwritten research article are designed to assist the reader in making defensible generalizations (avoiding bias). Authors will describe many features of data collection and characterize the sample and the population from which it was drawn. Because it would be infeasible to enumerate every feature of the research that might be important in all conceivable applications, final responsibility from generalizability rests with the reader. He or she must ask "Are there characteristics in my situation that are different from the reported results that *on theoretical grounds have a realistic likelihood of affecting the results?*" If the answer is affirmative, the user is obliged to refrain from using the results or to conduct a generalizability study to determine whether the suspected interaction effect really exists.

Bias in generalizability concerns *accuracy* of conclusions from research. There is also an issue of *precision*, known technically as reliability or freedom from random error. A conclusion may be free of bias but still be of limited value because it offers such a wide range of estimates that little confidence could be placed in their application. Again, editors and readers share responsibility for gauging the (random) variation that is likely to occur when generalizing the conclusions of research. Journals typically require that standard deviations or other measures of variance be reported. A useful guide to generalizability is the standard error of the mean or the standard error of a proportion.

If standard errors are not reported in a journal article, they can be easily computed by readers in most cases. This will be illustrated with some calculations from the paper by Mjör and Moorhead on the selection and replacement of restorations in a sample of Florida dentists. It was reported that 12% of composite restorations were replaced because they were discolored. If the study has been repeated with a similar sample of 262 restorations, it is likely that the proportion would be similar, but a bit different. The range of reasonable proportions one might find is given by the formula: the square root of the proportion multiplied by its reciprocal (1 minus the proportion) divided by the sample size. All the required information to make this calculation is contained in the article (the proportion is .12, the reciprocal is .88, and the sample size is 262). Thus the standard error for the proportion is .02. The interpretation of this number is that two-thirds of the replications of the study will place the proportion of reasons for replacing amalgam restrations in the range 10% through 14% (.12 minus .02 and .12 plus .02). This is called a confidence interval on the estimate. It allows the reader to judge the confidence he or she can have in generalizing the results of the research in view of random error.

The confidence interval gets smaller (more confidence in the estimate) when the sample size increases. For example, if Mjör and Moorhead had received 1000 responses instead of 262, the range expected to contain the correct estimate would be reduced to between 11% and 13%. Estimates of proportions tend to get slightly more fuzzy when the proportions approach 50:50. For example, the reported estimate of proportion of composite restorations replaced because of secondary caries is 59%. The confidence interval ranges from 56% to 62% (half again as wide as the interval around the 12% report). It is also possible to calculate ranges one can feel more confident in than the two-thirds given by the standard error. For example, if we wanted to have a range on our estimated proportion of composite restorations replaced because of secondary caries that contains 99% of such future estimates, we multiple the standard error by 2.5-somewhere between 7% and 17%.

An Investigation of Dental Student Values

Jane P. Casada, DMD; David O. Willis, DMD, MBA; Janice M. Butters, RDH, MPH, EdD

Abstract

The development of a dental student's professional values system is an important issue in dental education. The purpose of this study was to assess the relative importance of different values of dental student and instructor populations at a single dental school. Data was collected from surveys disseminated to dental students and faculty. Statistical analysis of the data indicated faculty showed a different set of values than students. Faculty placed greater value on patient care and clinical education. Students were more focused on passing licensure examinations, completing course requirements, and personal satisfaction. Junior and senior dental students placed greater value on the requirements of becoming a licensed dentist than did their younger student colleagues. Freshman and sophomore dental students placed higher values on additional academic pursuits and personal growth. This study also revealed no statistically significant difference between males and females in any of the values ranked.

A primary concern of dental education is preparing technically competent practitioners. However, most dentists would agree that there are other important elements in a quality dental education, such as professional values and ethics. Values are principles that are important for their own sake, rather than because they result in a desired external outcome, such as making money. They are the goals or standards of the profession (or an individual acting as a member of the profession) that are generally held by the profession (or society) to have large intrinsic worth. Values, then, form the basis from which decisions are made and the yardstick upon which they are judged.

The issue of whether or not an individual can be taught professional values and, based on these values, can learn to respond to a given situation in an ethical manner has been addressed in literature (Bebeau, 1994; Ozar, 1985). Rest (1982) indicated that educational experiences can foster an individual's ability to place moral values ahead of personal interests, to recognize moral problems, and to choose and implement a morally right course of action. The socialization process of dental education also appears to influence a student's values and affect ethical decision making. Morris and Sherlock (1971), in a longitudinal study of professional socialization, found that professional ethics declined steadily while cynicism increased, especially in the clinic years. This indicates that the values, which are the basis of the decision process, changed in importance over time. The findings of other researchers support the effects of dental education socialization process on students. Bebeau and Thoma (1994) cited the moral atmo-

sphere of a professional school as contributing to student regression in moral reasoning during dental education. Green (1981) reported there is a difference in preference for principled (i.e. values based) moral reasoning among dental students. The greatest differences occur during the early years of dental school, before students have had any significant contact with patients in the clinic. Green's analysis showed that freshman rated principled reasoning more highly than sophomores, juniors, or seniors. He suggested the differences were due to the stress of competition for grades, the teacher-centered authoritarian environ-



Dr. Casada is Associate Professor and Dr. Willis is Professor in the Department of Diagnosis and General Dentistry, Dr. Butters is Associate Professor in the Department of Periodontics, Endodontics, and Dental Hygiene at the University of Louisville School of Dentistry, 501 Preston Street, Louisville, KY; jpcasa01@ ulkyvm.louisville.edu ment and the perfectionist demands in the preclinical courses. Lancaster, et al (1989) found that although many class attitudes remained stable over the four years, there was a steady deterioration of attitudes toward the school and faculty. This study noted the nature of the class changed over the years with freshmen dental students exhibiting the most "desirable" educational characteristics.

Women are often perceived in the folklore of their profession as more compassionate and more sensitive to morals and values. Literature indicates females value interpersonal connections, care, sensitivity and responsibility (Balwin et al, 1996; Gabram, 1995; Gendron, 1993; Shapiro & Miller, 1994; Scannell-Desch, 1996; Walcott-McQuigg, 1994; Wertz, 1993, 1997; Williams, 1993). If this perception is true, it would translate to women achieving and maintaining a higher set of values than their male counterpart during their professional education.

Much of the research cited above addresses the importance of acknowledging and understanding the values which are central to dentistry as a profession and of using those values as a basis on which to develop an ethical framework to guide decision making. To facilitate that process in a clinical environment, Ozar et al (1988; 1994) identified a series of value considerations and rank ordered them in terms of importance. According to them, the central values of dental practice are, in order: (1) the patient's life and general health, (2) the patient's oral health, (3) patient autonomy, (4) the dentist's preferred patterns of practice, (5) esthetic values, and (6) efficiency in the use of resources. Because students are treating patients, the values that are central to the profession (as defined by Ozar) should also apply in the educational patient treatment setting. However, new sets of ethical dilemmas occur when the central values of patient treatment conflict with the central values of the educational setting. These rankings may be viewed differently by



^{*} Significant Difference α <.01

Figure 1: Mean Ranking of Values, All Students Compared to All Faculty

Value	All Students	All Faculty	U	α
1. Graduating from school on time	142.7	178.2	4193	.010
2. Completing requirements	148.2	145.6	5417	NS
3. Promoting patient health	159.2	84.1	2710	.000
4. Pleasing faculty / admin	153.6	116.1	4117	.003
5. Getting good grades	146.4	157.0	5128	NS
6. Learning clinical procedures	156.8	86.2	2801	.000
7. Performing procedures I enjoy	142.2	181.0	4073	.005
8. Satisfying patient's wants / desires	155.8	103.6	3569	.000
9. Having an active social life	138.9	200.0	3249	.000
10. Having a fulfilling family life	142.4	180.1	4112	.006
11. Personal Growth	146.1	159.0	5039	NS
12. Passing licencing boards	145.8	160.6	4970	NS

U = Mann-Whitney test statistic

practicing dentists whose aim is to treat patients, and student dentists whose aim is to graduate by treating patients. The values which would be relevant in an educational environment, however, have yet to be addressed in the literature. These values include graduation, licensing, grades, pleasing faculty, and maintaining a social life.

Accordingly, the purpose of this study was to:

- assess the relative importance of different educational and professional values to dental students
- compare student perceptions of the importance of professional values with those held by dental faculty
- compare changes in the relative importance of professional values as students progress through school
- compare the importance of professional values according to gender.

Methods

Data were collected from surveys disseminated to two groups: student members of the four dental school classes (N=270) and full and part-time faculty members (N=101) of the University of Louisville School of Dentistry. Survey responses were anonymous, indicating no identifying characteristics other than faculty/student status and gender. The survey listed twelve values which the authors believe are important to dental students during the course of their dental education. These values were obtained from the literature and from dental students. They include educational and patient treatment values.

Student participants were asked to rank order the series of values (from 1 to 12) based on how important the value was to them personally. Faculty were asked to rank order the values based on what they believed the student values should be. Rank ordering required participants to rate each value statement against other value statements. The survey was completed by the freshman, sophomore, and junior dental students during a scheduled time in the middle of the fall semester. These students had not had a formal course in ethics. The seniors completed the survey at the end of a formal eleven hour course offered in the fall semester entitled "Ethical Issues in Dentistry." This course presented basic professional values and ethical decision making concepts. The faculty were mailed the surveys in the fall semester and given a two week time period to complete and return the survey.

Results

The overall response rate from the survey was 245/270 or 90% of the dental students (freshmen 63/74, sophomores 62/67, juniors 60/67, seniors 60/62) and 44/101 or 44% of the dental faculty. The mean rankings of the responses are grouped according to dental class, gender of student respondents, and faculty. Mean ranking is a technique in which observations from all samples are combined and ranked from smallest to largest, assigning a value to each ranked ob-

38

servation. The test groups are then separated and their sum of the ranking for each group is computed. If the distributions are equal, the distribution of ranks should be similar. The Mann-Whitney Test tests the randomness of the distribution of ranked scores from groups and was used to determine differences between the groups tested.

Overall student responses were compared with those of the faculty. Figure 1 shows the results of the Mann-Whitney U test on these data. Significant differences at p<.01 were found for eight of the twelve values. The faculty showed a different set of desired values for the students than the students showed. Faculty would want students to place a greater



Figure 2: Mean Rankings of Values, Freshman / Sophomore Compared with Junior / Senior Rankings

Value	Fresh / Soph	Junior / Senior	U	α
1. Graduating from school on time	140.6	110.0	5944	.001
2. Completing requirements	138.6	112.3	6211	.004
3. Promoting patient health	125.0	127.1	7728	NS
4. Pleasing faculty / admin	120.6	131.9	7155	NS
5. Getting good grades	106.6	147.2	5315	.000
6. Learning clinical procedures	116.4	136.4	6606	.028
7. Performing procedures I enjoy	138.8	111.0	6178	.003
8. Satisfying patient's wants / desires	133.2	118.1	6914	NS
9. Having an active social life	128.1	123.7	7582	NS
10. Having a fulfilling family life	124.8	127.3	7702	NS
11. Personal Growth	114.8	138.3	6388	.010
12. Passing licencing boards	136.3	114.8	6510	.018
	U = Mann-W/bi	tnev test statistic		

value on patient care and clinical education. Students were more focused on completing requirements, graduating from dental school, and personal satisfaction.

The responses of student groups according to stage of dental education were also compared. In order to simplify the results, the responses were divided into two groups: students who were early in their education with little clinical experience (freshmen and sophomores) and those students who were later in their education with more clinical experience (juniors and seniors). The responses of these two groups were also compared using the Mann-Whitney U test (Figure 2). Significant differences at p<.05 were found for seven of the twelve values. The junior and senior dental students placed greater value on the requirements of becoming a licensed dentist than their vounger student colleagues. Freshmen and sophomore dental students placed higher value on additional academic pursuits and personal growth.

Finally, the responses of dental students grouped by gender were compared using the same technique (Figure 3). No statistically significant differences existed between male and female response patterns for any of the values.

Discussion

This study examined values relevant to dental students in an educational environment. These include patient treatment and educational values. The study showed that faculty ranked the values differently than students(Figure 1). Faculty placed greater value on patient care and clinical education than did students. Students were more focused on two issues: (1) completing requirements and graduating from dental school and (2) personal satisfaction. Health profession students' values have been shown to change as they progress through their education (Bebeau, 1994; Bebeau et al, 1985; Moody et al, 1974; Odom, 1982 & 1988; Ozar, 1985; Rest, 1982). Students enter into their professional training with a high degree of idealism about their chosen profession. This idealism is replaced with cynicism during professional training as students understand



^{*} Significant Difference α <.01

Figure 3: Mean Value Rankings, Male Students Compared with Female Students

Value	Male	Female	U	α
1. Graduating from school on time	142.9	149.0	9095	NS
2. Completing requirements	145.8	143.5	9340	NS
3. Promoting patient health	143.9	147.0	9392	NS
4. Pleasing faculty / admin	143.6	147.6	9228	NS
5. Getting good grades	145.5	144.0	9396	NS
6. Learning clinical procedures	144.0	146.8	9308	NS
7. Performing procedures I enjoy	145.0	145.0	9492	NS
8. Satisfying patient's wants / desires	140.1	154.1	8574	NS
9. Having an active social life	146.7	141.9	9176	NS
10. Having a fulfilling family life	142.8	149.0	9088	NS
11. Personal Growth	147.4	140.5	9035	NS
12. Passing licencing boards	150.5	134.8	8460	NS
	U = Mann-	Whitney test statis	stic	

the limitations of their profession. Following graduation, humanitarianism returns, but in a more realistic framework. Moody, et al (1974) found that cynicism increases and humanitarianism decreases during the dental school experience. After a few years in dental practice, cynicism decreases and humanitarianism increases. The findings indicate that values may be situational in nature and develop as a reaction to experiences encountered as a dental student. Upon graduation, they revert to predental school levels. The faculty in this study would represent the "realistic" idealism or humanitarianism that seems to return after a few years in dental practice as shown in the Moody study.

Faculty values should represent the institutional values that their dental school professes. Any one faculty member may not subscribe to the exact insti-

Manuscripts

tutional ranking but, the consensus ranking of the professional values should provide students a general notion of what the school views as important. The fact that dental students and faculty have different value orientation may indicate more about the organizational culture than the students themselves.

The ranking of values by dental students changes as they progress through the curriculum. Junior and senior dental students place greater value on the requirements of becoming a licensed dentist than did their younger student colleagues. Freshmen and sophomore dental students placed higher value on additional academic pursuits and personal growth. This finding is not surprising. It simply suggests a move from the academic idealism of freshmen and sophomore dental students to a pragmatism of junior and senior students as the importance of requirements and passing licensure examinations becomes more apparent. If so, this does not indicate a moral failing on the part of the students as much as a realism that decides where students should place their efforts. Unfortunately, the more idealistic components of professional treatment values may be subjugated to pragmatic educationally driven values. This institution, as well as many other dental schools, has a procedure requirement driven educational system. The advantages and disadvantages of such systems have been debated in the halls of academe for years, with one of the criticisms being that such systems "force" students to view patients as a means to an end (i.e., a requirement), as opposed to a person in need of care. Our students apparently change their value systems as they progress through the curriculum. Whether this is a permanent shift or an expedient response to immediate concerns is unknown.

Finally, this study revealed there was no statistically significant difference be-

tween males and females in the ranking of any of the values. This finding is surprising in view of literature and anecdotal evidence that indicates differences in value based decision making between males and females (Balwin et al, 1996; Gabram, 1995; Gendron, 1993; Shapiro & Miller, 1994; Scannell-Desch, 1996; Walcott-McQuigg, 1994; Wertz, 1993, 1997; Williams, 1993). In the folklore of dental education, women are often perceived as more compassionate and sensitive to moral/ethical concerns. Muuss (1988) noted men tend to organize relationships in a hierarchical order and subscribe to a morality of rights while females value interpersonal connectedness, care, sensitivity and responsibility to people. The findings of our study indicate that the atmosphere of a professional school contributes to changes in student values more than any innate gender differences. Gender tendencies may be overridden by the stress of competing for grades or the socialization process may homogenize the genders in values and moral attitudes.

Conclusion

This study examined and assessed the relative importance of different values of dental student and instructor populations at a single dental school. It revealed a different emphasis on values between faculty and students. Faculty placed greater value on patient care and clinical education. Students were more focused on passing licensure examinations, completing course requirements, and personal satisfaction. Junior and senior dental students placed greater value on the requirements of becoming a licensed dentist than their younger student colleagues. Freshman and sophomore dental students placed higher values on additional academic pursuits and personal growth. This study also revealed no statistically significant difference between males and females in any of the values ranked.

It would be interesting to explore whether this study's findings are characteristic of this particular institution or of other schools as well. Further areas of study include:

- 1. A better definition of what the student values are and their origin;
- 2. A better definition of faculty/ institution values and their origin;
- 3. A comparison of student and faculty values at different dental schools;
- 4. How we, as educators can most effectively affect the values of our students;
- 5. Determining if students in other requirement driven systems exhibit similar value changes; and
- 6. To determine if nonprocedure requirement systems foster similar changes in student values as they progress through their curricula.

References

- Baldwin, D.C., Daugherty, S.R., Rowley, B.D. & Schwartz, M.D. (1996). Cheating in medical school: a survey of second-year students at 31 schools. *Academic Medicine*,71, (3), 267-273.
- Bebeau, M.J. (1994) Can ethics be taught? New York State Dental Journal, 60, (1), 51-57.
- Bebeau, M.J. & Thoma, S.J. (1994). The impact of a dental ethics curriculum on moral reasoning. *Journal of Dental Education*, 58, (9), 684-692.
- Bebeau, M.J., Rest, J.R. & Yamoor, C.M. (1985). Measuring dental students' ethical sensitivity. *Journal of Dental Education*, 49, (4), 225-235.
- Gabram, S.G. (1995). Surgical residents in the 1990s. *Archives of Surgery*, 130, (1), 24-28.
- Gendron, C.(1993). Feminist strategies. Canadian Nurse, 89, (6), 45-47.
- Green, T.G. (1981). Dental student response to moral dilemmas. *Journal of Dental Education*, 45, (3), 137-140.

- Lancaster, D.M., Gardiner, J.F., Strother, E.A. & Boozer, C.H (1989). Dental students' attitudes: A four year study. *Journal of the American College of Dentists*, 56, (4), 30-35.
- Moody, P.M., Van Tassel, C., & Cash, D.M. (1974). Cynicism, humanitarianism, and dental career development. *Journal of Dental Education*, 38, (11), 645-649.
- Morris, R.T. & Sherlock, B.J. (1971). Decline of ethics and the rise of cynicism in dental school. *Journal of Health and Social Behavior*, 12, (4), 290-299.
- Muuss, R.E. (1988). Carol Gilligan's theory of sexual differences in the development of moral reasoning during adolescence. *Adolescence*, 23, (89), 229-243.
- Odom, J.G. (1982). Formal ethics instruction in dental education. *Journal* of *Dental Education*, 46, (9), 553-557.
- Odom, J.G.(1988). The status of dental ethics instruction. *Journal of Dental Education*, 52, (6), 306-308.
- Ozar, D.T. (1985). Formal instruction in dental professional ethics. *Journal of Dental Education*, 49, (10), 696-701.
- Ozar, D.T., Schiedermayer, D.L. & Siegler, M. (1988). Value categories in clinical dental ethics. *Journal of the American Dental Association*, 116, (3), 365-368.
- Ozar, D.T., & Sokol D.J. Dental ethics at chairside: Professional principles and practical applications. St. Louis, MO: Mosby.
- Rest, J.R. (1982) A psychologist looks at the teaching of ethics. *The Hastings Center Report*, 12, (1), 29-36.
- Scannell-Desch, E.A.(1996). The livid experience of women military nurses in Vietnam during the Vietnam war. *Image-the Journal of Nursing Scholarship*, 28,(2),119-124.
- Shapiro, J. & Miller, R.(1994). How medical students think about ethical issues. *Academic Medicine*, 69,(7), 591-593.

- Steinberg, D.N. (1973). Change in attitudes of dental students during their professional education. *Journal of Dental Education*, 37, (5), 36-41.
- Walcott-McQuigg, J.A.(1994). Worksite stress: gender and cultural diversity issues. American Association of Occupational Health Nursing, 42, (11), 528-533.
- Wertz, D.C. (1993). Providers' gender and moral reasoning. *Fetal Diagnosis and Therapy Supplement*, 1, 81-89.

Technical Glossary

Editor's note: In an effort to make research papers that contain technical concepts more "user friendly," the Journal will attach a technical glossary to these papers where it seems useful.

Scales of measurement: All numbers used in research are not the same; when they are generated from different measurement systems they must be analyzed with different statistical methods and are often interpreted differently. The common categorization of measurement scales has three groups: (1) nominal or category scales-names such as "private practice," "teaching," and "research" or "male" and "female;" (2) ordinal or rank scales-proper arrangement of measures on a single continuum such as "first place," "second place," etc. or periodontal indices; and (3) interval scales-such as time, length, or number of errors. (Purists recognize a fourth category, a set of the interval numbers, known as ratio scales which have a true zero point. But there is no important difference in the statistical treatment of interval and ratio numbers.) Scaling has to do with how numbers are assigned to observations. For nominal scales, the numbers are artibrary. For example, some researchers would code males "1" and others

- Wertz, D.C. (1997). Is there a "women's ethic" in genetics: a 37 nation survey of providers. *Journal* of the American Medical Women's Association, 52,(1), 33-38.
- Williams, A.P.(1993). Women in medicine: toward a conceptual understanding of the potential for change. *Journal* of the American Medical Womens Association, 48,(4), 115-121.

would code males "2". In ordinal scales, the numbers have to be assigned in order and consecutives (no gaps) and there is no assumption made that the difference between "1" and "2" is the same size as the difference between "5" and "6"-all that matters is rank. Interval scales assume that differences between objects are in both the same order and the same relative position as the numbers used to express them. "6" is as far away from "4" as "8" is from "6" and is the same order of magnitude compared to "3" as "12" is to "6". In other words normal arithmatic operations such as addition and division only make sense for numbers that are intervally scaled.

There are different statistical tests for different number scales. To find out whether groups differ in their "central tendency" or average, one would use such tests for differences in proportaion of Chi-square for category data, Mann-Whitney U or similar tests for rank data, and Students t for interval data. There are tests that can be applied when researchers are uncertain of the scale of data such as periodontal measures or questionnaire data, but many authors prefer to make conservative assumptions and apply so-called nonparametiric statistical tests for ranks or category data.

The Folklore in Your Mouth

Eric K. Curtis, DDS, FACD

Abstract

Ancient folklore about our detentions contained some incredible notions about the number and nature of teeth and their care. Many modern myths remain, however.

B efore science, people relied on hearsay, rumors, and folklore to help explain the world. Myths make sense of circumstance and experience. Myths foster a sense of community, create unity of purpose, and teach lessons. Even for teeth. In fact, myths thrive on the mysteries of the mouth.

In folklore, as in orthodontics, shape, size, and arrangement matter. For example, while spaces in a person's teeth today may just mean braces are in order, they were once seen as indications of the owner's destiny to travel. Crowded teeth, on the other hand, augured a long life at home with mother. A diastema foreshadowed a talent for singing. Broad teeth promised bravery, and large teeth long life, while small teeth were deemed a sign of honesty. People with pointed teeth were not to be trusted.

Inconsistent as it might be in its recommendations, folklore nevertheless made bold judgments on the number of teeth people should have. Hercules

was supposed to have sported a triple row of teeth, but even direct observation is no match for the allure of legend. A thirteenth-century Christian historian named Rigord concluded that when St. Helena lost the true cross (which she had previously discovered) to a thieving infidel, the human race was punished by having the number of adult teeth reduced to twenty-three. And Aristotle may have been a wise philosopher, but he couldn't count. While men have thirty-two teeth, the ancient Greek sage proclaimed that women have only twenty-eight-a little mathematical error that created a myth lasting two thousand years.

Folklore was also quick to address the provenance of problems. Until the germ theory revealed the horrors of plaque, dental predicaments were believed to be the work of a tooth worm. or gout, or the imbalance of four bodily fluids (blood, phlegm, black bile, yellow bile) called the "humors." Drinking cold water after eating hot foods used to be considered detrimental to teeth, as was eating a snack during a funeral, or biting into a sour apple. Fatty foods, the evil eye, and love were equally dangerous to dental health. A seamstress working on a shroud knew never to bite her thread. which would cause her to lose her teeth. Sudden fright was likewise thought to make teeth fall out.

Folklore is a relentlessly nagging dentist, forever harping on the importance of keeping teeth in good shape lest the whole body's defenses be left vulnerable. A case in point involves the cautionary tale of the bad tooth of Molly Bland, ruby-lipped heroine of the American folk ballad, "Springfield Mountain." The song can be traced to a real event that occurred in 1761, when a Springfield Mountain, Massachusetts, youth named Timothy Myrick died after being bitten by a rattlesnake. In the song's lyrics Timothy runs to his girlfriend Molly for help:

Now Molly had a ruby lip

With which the poison she did sip.

But Molly had a rotten tooth,

Which the poison struck and kill'd 'em both.

Preventive measures abound in folklore. One prescription for healthy teeth called for running around a church without thinking about a fox. Alternative methods to ward off dental disease in-



Dr. Curtis is in private practice in Safford, AZ. He is Past President of the American Academy of the History of Dentistry and Editor of the *Journal* of the Arizona State Dental Association.



volved such strangely precise acts as eating bread previously gnawed on by a mouse, or picking one's teeth with the claw of an owl's middle toe; another medieval directive urged prevention-minded citizens to avoid a toothache by stealing a piece of beef, wrapping it in a new linen rag, and burying it under the eaves of the house. Ancient folk prescriptions for toothache and gum disease included garlic, olive oil, honey, pulverized deer horn, ages of routine into the sometimes graphic scenes leaping from the magazine copy and television programming they accompany. Chirpy, upbeat commercials are curiously and incongruously mixed with murder and mayhem. "It is as if the program's producer is saying, 'You needn't grieve or worry about what you are seeing. In a minute or so, we will make you happy with some good news about how to make your teeth whiter,"

U rban legends customarily contain elements of humor or horror and make good story-telling.

copper rust, and even squashed ladybugs or the brain of a partridge. An Egyptian medical papyrus advises, in the homeopathic magic of "like curing like," that the lower jaw of a tortoise be worn to repel dental difficulties. Hippocrates, the venerable father of medicine, recommended a tooth powder made from the ashes of a rabbit head and mouse parts.

As improving knowledge and technology rendered dental care more useful, predictable, and comfortable, much of the traditional folklore clinging to teeth finally fell away. No one advises attempting to acquire immunity from dental disasters anymore by greeting an arriving stork, say, or applying snake skin steeped in wine. Ear wax won't cure toothaches, after all. Aristotle's little mistake seems incomprehensible. "[He] maintained that women have fewer teeth than men," Bertrand Russell mused. "Although he was twice married, it never occurred to him to verify this statement by examining his wives' mouths."

Yet folklore has not disappeared. Even in the harsh, rational light of the modern world myths continue to comfortably coexist with reason. The old ones have been replaced, not exactly by science so much as by new myths generated through advertising, popular periodicals, and the ten o'clock news. Advertisements, for instance, gather considerable power as interpreters and arbiters of experience as they blend reassuring imwrites New York University communications theorist Neil Postman in *How To Watch TV News.* Yet Postman cautions, "Commercials are almost never about anything trivial. Mouthwash commercials are not about bad breath. They are about the need for social acceptance."

Modern myths about dentistry enjoy wide currency. Some, such as the persistent notion that a baby's early teething predicts a new pregnancy for its mother ("soon teeth, soon toes"), seem harmless enough. Other myths are fun. The tooth fairy, for instance, helps children cope with those gap-toothed smiles. Still other myths, such as the ones that promote tooth loss as an inevitable consequence of pregnancy or aging, are actually counterproductive. And others, such as the belief that silver amalgam causes multiple sclerosis, are cruel.

Contemporary oral mythology may circulate as urban legends, the tall tales and rumors that take on a life of their own as they speedily make the rounds of entire communities. Urban legends customarily contain elements of humor or horror and make good story-telling. The same arcane sources that warn against flowers in hospitals because they suck oxygen out of the air also give notice for mouths: Carmex lip balm is addictive. Aspirin will work faster if it is absorbed through the gums or under the tongue. Inhaled nitrous oxide turns your brain to mush. Ice eats away tooth enamel. A tooth left overnight in a glass of Coca Cola will dissolve.

Current dental folklore may also take the sturdy, more prosaic form of truisms: Braces are just for children. It's normal for gums to bleed. Root canals generate infections in other parts of the body. A hard toothbrush cleans best. Third molars cause anterior tooth crowding.

San Francisco pediatric dentist David Rothman, a former professor at University of the Pacific School of Dentistry, identifies yet another pervasive myth: teething. "There is no such thing as teething," he says. Teeth don't cut through the gums. Eruption is not painful, nor is it accompanied by fevers. Such emergent growth is accomplished by the body routinely. "When you grow nails, you don't get nailing," he points out. "When you grow hair, you don't have *hairing*."

Modern folklore may be no less convenient, or compelling, however, for being false. Pediatricians, for example, want

A nd good luck trying to convince your patients that teething is a myth.

to believe in teething, says Dr. Rothman, both because they were taught about the phenomenon in their residencies, and because teething explains away a multitude of signs and symptoms. "And good luck trying to convince your patients that teething is a myth," Dr. Rothman sighs. "I can't even convince my wife."

Folklore might be compared to folk music. It has been said that the only thing to do with a folk melody, once you have played it, is to play it louder. Folklore, certainly, also reassures by the very fact of its confident repetition. "All music is folk music," Louis Armstrong once asserted. "I ain't never heard no horse sing a song." And similarly, perhaps, it could be that all knowledge ultimately is folklore.

Tacit Knowledge

David W. Chambers, EdM, MBA, PhD, FACD

Abstract

Dentistry is different from most professions and many of the current trends in American business because of its heavy dependence of tacit knowledge-the know-how that defies capture in explicit form. Many of the issues facing the profession today result from attempts to make oral health care more explicit so that it can be managed by those outside the profession. This is unlikely to proceed much farther than it has already. However, dentistry must still find ways of communicating the value of its services in explicit ways that the public will understand.

few personal predictions: computers will not take over dentistry—especially not the delivery of care; dental management companies have got most of the lowhanging fruit and their growth will be limited; dental education will remain extremely expensive and technology will not reduce its cost; initial licensure examinations will remain an invalid rite of passage; dental prepayment systems are limited by the care dentists provide (not the other way 'round as the complainers would have it); ethics, practice management, and diagnosis will continue to be learned more in dental offices than in schools; continued competency testing is impractical; practice management gurus and breakthrough technologies will remain on the fringe of the profession, appealing largely to the pockets of unthinking practitioners.

These are not really bold prognostications; they are descriptions of the profession now, and of its most likely future. And they all have a common source. They all depend on a single, fundamental truth about dentistry that separates it from most professions and from the mainstream of changes occurring in the American economy. There is something basic about dentistry that is difficult to capture in theory and to talk about. You have to have been there to know what I'm talking about. Dentistry is different, and it is hard to explain this.

All of the predications in the opening paragraph are based on the single observation that dentistry is largely based on tacit knowledge—how-how and knowwhy that cannot effectively be captured in words and numbers. Certainly, there are explicit kinds of knowledge in dentistry as well, but the balance is unusually tipped in favor of the personally-felt and individually-communicated deep wisdom in the oral health care profession. We have passed the era (beginning in the 1920s) when dentistry longed for the respectability of association with science. That has been achieved; now the tacit side of the profession must be reaffirmed.

Information and Knowledge

Dentistry is both a manufacturing and a service industry. The proportions of these components, however, are changing. ADA data show that less than half a general dentist's office time is now spent manufacturing restorative restorations. Recent survey data at the University of the Pacific reveal that graduates of the past twelve years are dividing their time equally (at about 20% each) among treating initial lesions, replacing the work they or someone else has done because such work does not hold up over time, and providing elective procedures. The majority of their time is in diagnosis, case presentation, prevention, and other nonmanufacturing ways of adding value to their patients.

All of this is knowledge based. But it is confusing to think of knowledge as something like test scores or data fields in a computer. Information (the factoids in insurance company databases, initial licensure exams, or scientific journals) is a

derivative of knowledge, captured in tangible and logical form that makes it easy to store, transport, transmit, count, and sell. Intrinsically, it has almost no value; worth comes from someone who knows how to use it. In the general economy, information is given away on the Internet in quantities so massive it is difficult to comprehend. What makes information manageable is the fact that it has been removed from all context. Value can only be added to information if it is placed back into a valuable context.

To illustrate the true value (often a cost) of information, try this experiment. Make a pile of all the mail you receive in a week (later it can be recycled). Separate it into information and knowledge. Information just "is"; knowledge transforms you-you are different or you behave differently because of it. What does it cost you to process the information? Record how many minutes you spent with it. Estimate how much time you would spend if you read it all very carefully. Calculate your per-hour income in practice or other position. How much does it cost to protect you from the information? How much would it cost to process it all?

Knowledge is a different matter. By definition, knowledge is context-bound and necessitates a transformation of those it affects. A person might say "I have that information somewhere" showing that information is a possession. We would not, however, expect a person to say that about knowledge because knowledge is not detachable. A knowledge-based transaction with the patient (such as a diagnosis) has the potential, and usually the intent, of changing the patient. It is more likely to be a "handson" experience than a "handoff," and it will involve give-and-take between the dentist and patient. That is exactly why intermediaries, such as insurance companies and dental management companies, and office staff cannot do it. If dentistry is equated with procedures (billable procedure codes), it can be captured as information and controlled more effectively by organizations other than dental offices. As long as dentistry remains the

Four kinds of organizational learning based on transformations involving tacit and explicit knowledge.

	Tacit	Explicit
Tacit	Socialization	Externalization
Explicit	Internalization	Combination

provision of oral health care, it cannot be detached from the dentist and his or her knowledge.

Knowledge Professionals

Dentists are an example of what intellectual capital economists call knowledge professionals. They add value to their customers (patients) by the direct application of their know-how. Such professionals always "work for themselves" in some sense, even when they are employees (as are teachers, many lawyers, and others). They live in two worlds. Part of the professional's identity is defined by the organization where he or she works and part by the education and socialization they have received. Knowledge pro-

The tacit side of the profession must be reaffirmed.

fessionals live simultaneously in the world of their business arrangement and the world of their professional knowledge base. The latter are called communities of practice, and they represent a collective knowledge base, standards of practice, and ethical codes. Conflicts often exist between the expectations of professional standards and the expectations of the organization where professionals convert this collective expertise into useful services for patients or other customers. Dentists who own their own practices experience this tension interpersonally; those who work as employees see it as an interpersonal conflict. The kinds of complaints owner-practitioners voice about the constraints of managed care contracts are mirrored in the complaints of young practitioners who work as associates for owner-practitioners.

Many questions of ethics are conflicts between the two worlds knowledge professionals live in. The dramatic ethical struggle now gripping dentistry can be framed as a question: Can the tacit knowledge which is the foundation of the community of practice of the dental profession be converted to explicit knowledge so that it can be managed by outside interests—can dentistry be packaged for control by others? To understand why the answer to this question is largely in the negative, we must look at the various conversions that are possible between tacit and explicit knowledge.

Tacit and Explicit Knowledge Conversions

Although all knowledge is personal and has the power to transform, sometimes it is useful to distinguish between different types of knowledge based on how easily it can be communicated. Reading a book on leadership is one thing; spending a summer internship with a powerful leader is another. Noticing that the patient seems short of breath and flushed is a useful observation, but finding a blood pressure of 140/90 is more pre-



cise and easier to record in the chart. Philosophers, particularly Michael Polayni, designate these two types of knowledge as tacit (resisting capture in symbolic form) and explicit (capable of symbolic and linguistic expression).

Know-how is typically tacit. Experts are often clumsy at describing their skilled performance and keen insights. Sometimes, the stories they invent to explain their behavior are so far from the mark as to be misleading. As a general rule, it is more instructive to observe experts than to listen to them. Practice phiExplicit knowledge, on the other hand, is readily captured in symbols and more easily transmitted and manipulated. Words, numbers, and other symbols are abstract representations of this knowledge, which make it easy to store and communicate. Because explicit knowledge is so public, it is often given higher status than its tacit counterpart and is generally thought of as being more "real" and precise. The American educational system places great emphasis on explicit knowledge (with the important exception of sports) and so does American busi-

E xperts are often clumsy at describing their skilled performance and keen insights.

losophy, standard office procedures, and values are tacit. No one can exactly explain them, but there is pretty good agreement whenever they have been violated. Tacit knowledge can be learned and can be transmitted from one person to another, however, this is normally a slow process and requires direct contact such as apprenticeship. This makes it rather expensive to develop tacit knowledge. Tacit knowledge is also difficult to evaluate and can normally only be seen by looking at results and context to make inferences about the knowledge that must have been involved. The computer revolution and the digitizing of everything in sight will tend to pass over the whole important realm of tacit knowledge.

ness. Initial licensure examinations, purported continued competency testing, the insurance industry, and dental management corporations are all grounded in explicit knowledge. Because explicit knowledge is readily captured and multiplied, it is the kind of knowledge most likely to be offered for sale in the market place.

Recently Nonaka and Takeuchi, in their book *The Knowledge-Creating Company*, observed that there are four distinct ways we must manage the creation and transmission of knowledge. These four knowledge transitions are shown in the accompanying table.

When tacit knowledge is transmitted in non-symbolic form, this is called *socialization*. A great deal of on-the-job training and enculturation into the values of an organization is never made explicit. This is learning by doing and the key activity is purposeful experience. Dental education is unique, even among professional education, in the necessary reliance on apprenticeship learning. For all knowledge professionals, entrance into the community of practice is predominantly socialization. Ethics, practice and patient management, and diagnosis cannot be fully learned by the transmission of explicit knowledge.

It is also oftentimes necessary to transform tacit knowledge into an explicit form. Case presentation, post-operative instructions, and participation on a peer review panel require this kind of knowledge conversion of what is known tacitly into a form that can be captured and communicated. Leaders must be able to recognize trends in the environment and spot important characteristics of their own organizations and convert these into powerful messages. Externalization makes tacit knowledge explicit. It is not a scientific process, but one more closely resembling poetry. Those who excel at this skill are often masters of the metaphor.

Those who engage in analysis and exploration of knowledge to reveal its patterns are learning by changing explicit knowledge to other forms of explicit knowledge. This is often quantitative. In dentistry, this work is primarily done by researchers, office managers, industry, and insurance companies. *Recombination*, the art of transforming explicit knowl-



edge into new patterns of explicit knowledge is probably over-estimated in terms of the amount of attention devoted to it and its importance in learning. This is because it is the most public and most permanent of all forms of learning.

The final transformation of tacit and explicit knowledge is to convert what logical analysis has revealed to be an improvement into policy and practice. This is called *internalization* and depends heavily on formal training and documentation. The goal is to make rationally discovered "best practice" into habit.

Knowledge Conversion Challenges in Dentistry

Recognizing that there are both tacit and explicit dimensions of knowledge increases the opportunity for learning. It also cautions against the assumption that the future of organizational learning is the same as the future of the computer and the Internet. Nonaka and Takeuchi tell two stories which represent the importance of tacit knowledge in the Japanese approach to quality. Early efforts to produce an automatic bread maker for the home market were unsuccessful. Eventually, Matsushita Electric apprenticed the team of engineers working on this project to a famous Tokyo hotel known for the quality of its baked goods. After several months of tacit learning, the engineers proposed several breakthroughs which resulted in the introduction of a successful home bread making machine. In 1986, Nissan decided to develop a high performance automobile, the Primae, for the European market. The first step in product development was to send teams of Japanese engineers to live in Germany for periods of six questions or alternative views rude, inappropriate, or personally challenging—"unprofessional." For many, the preferred response to what is seen as regulatory or practice encroachment is to ignore it or

 ${\it S}$ kill at communicating the value of oral health in terms that patients understand is now mandatory.

months to two years and to provide each with a luxury European automobile. The feel of bread dough and the feel of Autobahn driving are not something that can be learned from engineering specifications. Clearly, the same reliance on tacit knowledge applies to dentistry.

The good news is that dentistry is so thoroughly grounded in tacit knowledge that it cannot be externally controlled. The bad news is that this won't prevent people from trying to do that.

The vulnerability of the profession does not lie in educating or socializing new dentists or in research. The critical skill is externalization—making public what the profession knows tacitly about promoting oral health. Dentistry has grown up in a world unaccustomed to having to explain its actions. Although the wisdom of dentistry is still intact, it can no longer be taken for granted that the public recognizes this. Individually and collectively, many in the profession still recoil at the thought of justifying what they know to be sound. They find find a colleague who feels the same way and commiserate together. Talking with someone outside the profession is seen as legitimizing their position and thus very much to be avoided. Besides, it is not certain how the tacit dimension of dentistry could ever be explained to a non-dentist.

Dentists will have to admit that the dental prepayment industry has done a pretty effective job of equating in the patients' minds insurance benefit maximums with the limit of appropriate care. Dentists will never change this perception by talking with other dentists. Skill at communicating the value of oral health in terms that patients understand is now mandatory. Not that many years ago it was unnecessary; many dentists don't know how to do it.

Externalization is the defining skill of leadership. Leaders make explicit to others what members of the group know inherently to be true. Complaining about the "bad guys" is anything but leadership; going to them with a message that reflects a common tacit reality is what is called for.

1

47



Recommended Reading

Chambers, D. W. (1994) Competencies: A new view of becoming a dentist. *Journal of Dental Education*, 58, 342-345.

Review of educational literature showing the stages through which professionals pass on their way to mastery. Education is seen as requiring different methods at each of the stages. One of the characteristics of experts is the mastery of vast tacit knowledge that is difficult to articulate.

* Langer, E. J. (1989). *Mindfulness*. Reading, MA: Addison-Wesley.

Readable presentation of how much more one can get out of life by becoming aware of much of our behavior which we take for granted. Not only is performance enhanced, so are social relations and even health.

*Maister, D. H. (1993). *Managing the professional service firm*. New York, NY: The Free Press.

Accountants, consultants, and lawyers are examples of professionals who add value through their specialized knowledge. This book describes how groups of such knowledgeable professionals organize and manage themselves and how they create wealth.

* Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation*. New York, NY: Oxford University Press.

Knowledge is the new competitive economic weapon. This book is a blend of philosophy and business and its main thesis is that Americans focus on explicit knowledge while the Japanese concentrate on tacit knowledge. Both are necessary and the conversions among the two types must be mastered.

Polanyi, M. (1964). *Personal knowledge: Towards a post-critical philosophy*. New York, NY: Harper Torchbooks.

One of the modern expositions of tacit knowledge—knowledge that cannot be readily expressed in symbolic form. Philosophical and technical.

Schön, D. A. (1987). *Educating the reflective practitioner*. San Francisco, CA: Jossey-Bass. A classic study of professionals, revealing the importance of the integration of facts into higher-order knowledge patterns through reflection in practice.

Thompson, M. P. (1993). The skills of inquiry and advocacy: why managers need both. *Management Communication Quarterly*, 7, 95-106.

Argument for the value of balancing strong presentation of one's own views with openness and careful listening.

Editor's Note

Summaries are available for the three recommended readings preceded by an asterisk (*). Each is about four pages long and conveys both the tone and content of the book through extensive quotations. These summaries are designed for busy readers who want the essence of these references in fifteen minutes rather than five hours. Summaries are available from the ACD Executive Office in Gaithersburg. A donation to the ACD Foundation of \$15 is suggested for the set of summaries on tacit knowledge; a donation of \$50 would bring you summaries of all the 1998 leadership topics. American College of Dentists 839 Quince Orchard Blvd., Suite J Gaithersburg, MD 20878-1614

Periodicals Postage PAID at Gaithersburg, MD