

Journal of the American College of Dentists

Standards

Winter 2005 Volume 72 Number 4



Journal of the American College of Dentists

A publication promoting excellence, ethics, and professionalism in dentistry

The Journal of the American College of Dentists (ISSN 0002-7979) is published quarterly by the American College of Dentists, Inc., 839J Quince Orchard Boulevard, Gaithersburg, MD 20878-1614. Periodicals postage paid at Gaithersburg, MD. Copyright 2005 by the American College of Dentists.

Postmaster–Send address changes to: Managing Editor Journal of the American College of Dentists 839J Quince Orchard Boulevard

Gaithersburg, MD 20878-1614

The 2005 subscription rate for members of the American College of Dentists is \$30, and is included in the annual membership dues. The 2005 subscription rate for nonmembers in the US, Canada and Mexico is \$40. All other countries are \$60. Foreign optional air mail service is an additional \$10. Single copy orders are \$10.

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

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For bibliographic references, the *Journal* is abbreviated J Am Col Dent and should be followed by the year, volume, number and page. The reference for this issue is: J Am Col Dent 2005; 72(4): 1-68



Publication Member of the American Association of Dental Editors

Mission

The *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

T 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 potential 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.

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This issue is supported by the American College of Dentists Foundation.

Cover Photograph: There are many professional standards to decide among, and the choices may not be obvious. ©2005 Diane Diederich, iStockphoto.

FROM THE Editor

How Should Dentists Practice?

thics and science share a common characteristic—they don't tell dentists what to do. Dentists make up their own minds based on their interpretations of ethics and science or by listening to intermediaries who have their own interests in telling dentists what they should do.

Ethics is the study of right and wrong or, perhaps, what is true based on reason. Philosophers do that sort of work. But it is quite possible to "study" this important discipline without acting in ways society will regard favorably. Socrates is a notorious example of a man who was sentenced to death by a democratic government for thinking too much. Certain lawyers know more about state practice acts (because they make a living defending dentists who wander over the line) than do members of the state board (who are volunteers serving short tours of duty). Most good people are not especially articulate about the principles that underlie their ethical behavior, even when they act admirably. The point is that the study and the practice of ethics are distinct activities.

A parallel logic applies to science, which is the study of what is true based on observation. Becoming a better researcher does not automatically make one a better dentist. The disappointing history of the National Institute for Dental and Craniofacial Research program to train DDS-PhDs casts doubts on the wisdom of trying to blend these disciplines in the same person. (Almost all of the government-supported dentist-scientists are now in the private practice of dentistry.) Scientists, per definition, are concerned with generalizations (what works on average); dentists, per definition, care about unique individual patients. The point is that research and sciencebased practice are distinct activities.

Dentistry is better to the extent that it is based on ethical principles and grounded in science. Practitioners need to be intelligent consumers of science who are sensitive to ethical trends. But they should not be ethicists or researchers (unless they want to lead dual lives). The reason for separating the disciplines goes well beyond the obvious fact that each is a full-time job and doing one well while dabbling in the other could be dangerous. The real reason is that each discipline has its own unique logic. Philosophers analyze the logical relationships in extremely large systems in hopes of being able to make the leap to universal statements. Scientists analyze controlled circumstances in hopes of discovering general patterns. Dentists treat patients. The issue of interest is how these disciplines are related to each other.

The answer is that dentists become generally familiar with ethics and science and then select those elements that work best for them and their patients. They use the logical processes of inference and satisficing. By considering the overall pattern of evidence they select elements that are useful when integrated into their practices. This is an entirely different logic (known to the ancient Greeks as phroensis) than the hypothetico-deductive logic of science or the various flavors of ethical reasoning—hermeneutics, casuistry, discursive, virtue, principles, or other approaches.

The relationships between ethics and science on one hand and practice on the other are seldom regarded as a problem from the dentists' point of view. (Probably it is a missed opportunity that practitioners have overlooked.) But it is a source of irritation when looked at from the other direction. Ethicists and researchers do grumble that they are not appreciated. Some advocates of EBD are scornful of dentists who practice in ways that have not been supported by "best evidence"-even when scientists have studied only a fraction of what dentists do. Ethicists sometimes sound a bit righteous-as do those who dispute them. In the February 9, 2006 issue of the New *England Journal of Medicine*, a large clinical trial was reported showing that saw palmetto, a popular OTC treatment for benign prostatic hyperplasia, is ineffective. On February 10, a National Public Radio interview with physicians who treat patients with such symptoms, including one of the authors of the study, revealed that these practitioners intend to continue supporting patients' use of this unproven alternative therapy. Science considered, other factors may be more important.

The operational meaning I give the term "should" is a second party claiming that a first party would better serve its own interests if it behaved in a certain different fashion. Mom told me, "You should wear a coat if you are going out in weather like this." The journal article reported, "A rubber dam should always be used when placing composite restorations." The risk management lawyer advises, "You should tighten up your documentation of informed consent."

(The term "must" can be operationalized as a second party claiming that it is prepared to take action if its (the second party's) interests are not honored. The state board has a regulation that dentists must document so many hours of CE for licensure renewal, for example.)

Here is the irony. Those who liberally use "should" language are seldom ethicists, scientists, or dentists. They are intermediary groups. "Should" (whether the word is used or only implied) is the essential posture in codes that are developed by organizations, based on ethical thinking, for the use of their members. "Should" is also the tone of voice for CE speakers. What gives EBD a faint smell is that its advocates, most of whom are academic researchers, stretch pure science over into a "should" attitude regarding private dental offices. (Of course, government, lawyers, and the insurance industry are intermediaries that are authorized to go all the way to "must.")

In recent years, dentistry has witnessed a blossoming of groups who are willing to insert themselves between the pure disciplines of ethics and science in order to tell dentists what they should do. This is likely to change the relationships that have existed between ethics and science and the practicing community. It is likely to make it more difficulty for dentists to evaluate the rising cacophony of claims. It may even tempt some dentists to let someone else do their thinking for them. That would be a disappointment to me. Dentistry is better to the extent that it is based on ethical principles and grounded in science... But [dentists] should not be ethicists or researchers (unless they want to lead dual lives).

The papers selected for this theme issue address various perspectives on the question "how should dentists practice?" As an advanced organizer, consider these landmarks:

- 1. Practice Grounded in Science: Dentists are generally familiar with both the fundamentals of the biological and social sciences and current research on products and processes and apply them as part of practice; this has been the mark of the profession for almost a century.
- Standard of Care: Legal concept;
 "If x is or isn't done, a colleague might testify in court to the effect that the dentistry is different from what his or her colleagues would do."
- 3. Parameters: Desirable characteristics; "If x is performed, it should be performed in these ways..."; defining how something should be done, but leaving the decision of whether it should be done to the dentist.
- 4. Critical Paths (sometimes Guidelines): Prescribed action flowing from diagnostic findings; "When a, b, and c are observed, a specific sequence of procedures, x, y, and z, should be performed"; largely a medical concept at this point since dentistry has eschewed diagnostic codes (sometimes "best practices").
- 5. Consensus: A sponsoring agency recognizes a group of experts who meet

to combine their opinions and all the literature to define concepts and take positions on which treatment should be performed; "best opinion."

- 6. Evidence-Based Dentistry: Formalized, structured statements about effectiveness of products or procedures based on evidence that meets very high methodological criteria; typically this rigorously screened evidence is contained in meta-analyses and "systematic review" articles; "best data."
- 7. Policy: Permissible treatment given identified characteristics; insurance, AAMOS, other lists that say "when you see this you can do that"; some have called this "procedure code dentistry."
- 8. Outcomes-Based Practice: Systematic recording and analysis of patterns of treatment outcomes in individual practices with a view toward continuous improvement; no attempt is made to generalize across practices; OBP can be applied regardless of the rational (1–7 above) that motivates using the product or process in the first place.

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

Life After Fellowship

Marcia A. Boyd, DDS, FACD

ACD President-elect's Address

October 6, 2005 Philadelphia, Pennsylvania

he year Julianne Bluitt was president was 1994-94. That was the year I was inducted into the College. Please let me begin by welcoming you all to Philadelphia and extending my heartiest congratulations to the new Fellows who will be joining the American College of Dentists this afternoon. You should be proud of your individual accomplishments and your recognition for these accomplishments by nomination from your peers. In one's professional life, it doesn't get any better than this! I am confident that you will be proud to be a Fellow of the College and that you will continue in your leadership endeavors.

"Old" Fellows should remember their day of convocation and feel proud too.

It was just four years ago that ACD President Richard Bradley spoke about the tragedy of 9/11. Only last year in Florida, we saw the aftermath of Hurricane Jeanne at our Convocation. And today we are overwhelmed by the images of flooding and devastation on so many fronts, horrific loss of life, pain and suffering for so many families that has resulted from Hurricanes Katrina and Rita. Indeed, we see and understand that there are so many individuals and families, both here and around the world, that know all too well of loss and suffering. They are in our thoughts and prayers.

Another serious and important matter that is before us is the lack of access to dental care in North America. Obviously there needs to be a concerted and funded effort to begin to address this problem. However we should never forget that one person CAN indeed make a difference. Beginning a community effort on the local level can do even more. Although not the ultimate solution, it is an opportunity to give back and make a difference. Please think about it; we have the skill and talent to help those who are less fortunate and are in need.

I am so very proud to be the incoming President of the American College of Dentists. I am also proud to be a Canadian and proud to be a woman. The American College of Dentists has always been an egalitarian organization, so let me set the historical record straight by saying that, in fact, there have been two Canadian Presidents, both men, and both from Toronto, the last one forty years ago. In 1994 Dr. Juliann Bluitt became the first woman President of the College. And we have seen our current President Dr. Charles Kerkhove lead us so very well this past year. So I realize that I follow in great footsteps and have big shoes to fill. That makes me doubly challenged and doubly proud! My only claim to fame is that I am the first woman from the Canadian Sections to become President: but that indeed makes me extremely honored and filled with pride!

Obviously I don't know all of you, although I look forward to meeting you today and over the course of the next year. Therefore I thought it would be a



Dr. Boyd is an international consultant on dental education and professional policy. She maintains a private practice in Vancouver, British Columbia.

good idea to take a moment to personalize this opportunity and introduce myself to give you a brief "thumbnail" of who I am and then share with you what my leadership goals are for the Board of Regents and the College in the upcoming year.

We'll "fast forward" from dental school in Edmonton, Alberta, Canada, After graduation I took a job in public health with the Federal Government and traveled north (and I do mean NORTH!) to the eastern Arctic, above of the Arctic Circle. I flew into small Inuit Eskimo communities to deliver dental treatment. landing on ice, then arriving by dog team, complete with portable equipment, cast aluminum dental chair, head lamp, cold sterilization and nothing else-all as a freshly minted graduate! Can you picture that? I call that the "more guts than brains" part of my career! In truth it was a fabulous opportunity-both as a dental learning experience and as a chance to develop an appreciation for a community that was very different from my own.

From there I went to Vancouver, British Columbia, to be a public health dentist who delivered treatment to threeto-five-year-olds. Now that was a tough job! God bless our pediatric dentists! After that I joined the University of British Columbia, Faculty of Dentistry. I remained there as a full-time faculty member for thirty years doing almost every job, including serving as dean.

Four years ago I did what I call a "lateral arabesque" and left the faculty, taking so called "early retirement." However, I seem now to be busier than ever with contract work in Canada, the U.S., Hong Kong, Thailand—all that fitted between serving as workshop leader and test developer for the National Dental Examining Board of Canada as well as continuing with my private practice in Vancouver, BC. Needless to say, I have enjoyed my career in dentistry thus far and I am extremely grateful. I became a Fellow in 1988—Las Vegas! What a coincidence that I should be President during a year that ends with the ACD annual meeting in Las Vegas!

It was during the presidency of Dr. Prem Sharma that the Canadian Sections were born. They have continued to grow and thrive since then while keeping contact with Sections in the U.S. as well as worldwide. The College has always been willing to support and make changes and again we have evidence of that now with the redistribution of Sections within our eight regencies.

It is the confidence that you, my colleagues have vested in me, and the mentoring of my former Regent, Dr. Ken Follmar, that have provided me with this honor and privilege to serve you now as President.

AN ACTIVE COLLEGE

Over the past six years of my involvement at the national level, I have witnessed your board take a proactive stance on many things. Here are some examples:

- Partnering with various organizations to spearhead national summits to probe ethics issues. There have been three to date, with another planned for February 2006.
- Supporting our outstanding *Journal* and it Editor, Dr. David Chambers, through collaborating with the American Society for Dental Ethics to include an article on ethics in every issue of the *Journal*—the only dental journal to do so.
- Supporting Dr. Chambers in undertaking theme issues, which sometimes create controversy by presenting alternative perspectives that broaden our understanding and advance our profession.
- Promoting leadership opportunities by encouraging Sections and Fellows to participate in ethics programs in our dental schools and by providing fiscal support for the White Coat

Ceremonies that have now become an integral part of most dental programs and some dental hygiene programs as well.

• Taking the lead, spearheaded by Executive Director, Dr. Steve Ralls, in securing financial support for the programs of the College. A special "thank you" to GC America, for the production of the dental history CD-ROM distributed to every first-year dental student in the U.S. and Canada.

It is the Sections and their dedication to personifying the mission of the American College that are the life blood of our organization.

- Creating new honors and awards. A new award recognizes individuals, not necessarily ACD Fellows, or organizations for their significant contribution to our profession and who share and uphold the ACD mission of leading in excellence, ethics, professionalism, and leadership. The award will be presented for the first time at this meeting and we are very pleased to recognize the American Dental Association as the first recipient.
- Building modules for your online ethics course, again under the leadership of our Executive Director, Dr. Steve Ralls. There are three now and I encourage you to visit them. They have been recognized for continuing education credit.

I would like to propose a continuum of American College activities that begins in dental school and continues throughout a dentist's professional life as the goal for Sections and ACD. These are just a few of the leadership initiatives that your College has been engaged in, and of course will continue to move forward with in the coming year.

Now, over the next year the team of your Board of Regents and ACD staff will also be committed to providing occasions for you to grow professionally through participating in LeaderSkills workshops at the annual meeting and continuing education through our cruise and summer conference programs. Consider seriously these occasions for learning and fellowship. Funding for these continuing education opportunities comes through your American College of Dentists Foundation, the ACDF.

ACTIVE SECTIONS

Our focus on the support of and participation in educational programs for students in dental schools should certainly continue. It has been well developed and is generally strong. However, during my presidential year I would like to guide our initiatives toward the individual practitioner and the profession at large. There has been an emerging concern over the focus of new, young colleagues who are entering the profession. The emphasis on "cosmetology," if you will, the potential for the debt of young practitioners to influence treatment decisions, extreme advertising, and possible fraudulent activity all have the potential to affect our profession in a significant way. Dentistry has, over the recent past, fallen from a position of high public esteem, and, until we make our goal maintaining professionalism and service to the public a priority, we will lose even more ground. To reinforce the goals and ideals of the College, I would like Sections to lead by considering programs that bring our mission, and the behaviors in which we believe, to the fore. For example:

- Encouraging programs sponsored by Sections at state or local meetings, perhaps selecting topics that would target the young practitioner who has been in practice fewer than ten years
- Having Fellows become mentors for new colleagues
- Sponsoring an ethics retreat
- Furthering the state-by-state endorsement of mandatory continuing education courses in ethics for licensure renewal
- Growing the diversity of our membership that moves us toward reflecting the demographic profile of those practicing dentistry today

These initiatives would compliment nicely what we currently have in place in dental schools by following through with programs after graduation, thereby promoting and reinforcing what we believe our profession should be. I would like to propose a continuum of American College activities that begins in dental school and continues throughout a dentist's professional life as the goal for Sections and ACD.

In addition I feel very strongly that the Regents and Executive Staff need to be present at Section Meetings. Oftentimes, the financial support for this has come, at least in the part, from the individual Regent. However, it is my belief that you in the Sections need and want to have a "face" on the organization and have personal contact with your College leadership. In this way information can be brought to the Section, support and networking of individuals and activities can occur, concerns or issues can be conveyed through the Regent back to the Board, and the lines of communication will become more frequent and stronger. A four-year tenure as Regent is not a long time, and two visits in the four

years is just not enough. On the other hand, we do have to appreciate that with the extent of the geographical area involved in some Regencies, this may create logistical difficulties or conflicts in scheduling. But I do believe the leadership should be committed to being at the "grass roots" level as much as possible. It is the Sections and their dedication to personifying the mission of the American College that are the life blood of our organization. The wealth of brainpower, innovation, experience, and dedication is vested in the Sections and therein lays the tremendous potential to do good and to advance our profession.

We need to continue to further our partnerships with other organizations to produce "win-win" situations for dentistry. The Ethics Summits have been an excellent example of the sum being greater than the total of the parts. This year we will again engage with a host of organizations and players when we gather to discuss the topic of commercialism. Again the ACD has been the catalyst for this important activity.

ACTIVE Fellows

My mantra is that "there is life after Fellowship." We all respect the honor of being nominated by our colleagues for Fellowship but we need to pledge here, today, that we will do just ONE THING over the next year that supports our College and pays tribute to those individuals who knew we were worthy and took the time to nominate us. There are three hundred and sixty-five days ahead—just one thing is all I ask. If we all did that, our College would be even stronger and we would all benefit from these contributions. And it really isn't difficult. There are so many things that you could do:

• Bring a Fellow to the next Section meeting—perhaps someone you nominated or someone who has not attended for some time.

- Volunteer to be a member of the Executive or Section Committee.
- Contribute a piece of the Section newsletter—or become the editor if your Section does not have a newsletter.
- Be the "official photographer" for your Section.
- Nominate a worthy colleague for Fellowship (it is even easier now with electronic forms).
- Be philanthropic—donate to the ACD Foundation. Your gift is tax deductible and is also tax exempt for the Foundation making this a win all the way around that will help our financial base grow and allow us to support projects and opportunities for Fellows.
- Along that same line, become a Gies Fellow—that is easy, too, and can be pledged over a number of years.
- Be a tutor in the ethics program at your dental or dental hygiene school.
- Participate in the summer conferences or cruises sponsored by the College.
- Attend the annual meeting next year in Las Vegas.

As you can tell, I could go on. Suffice it to say, there are many ways and opportunities to enjoy being a Fellow and contributing to "life after Fellowship." None of us should leave here today without making that personal commitment and then go back to your Section and share the message with others.

We all know that any organization is only as strong as the involvement of its members, and members only get from the organization what they put into it. It's a promise and a partnership shared.

In summary, there are three things I believe we should devote our energy to this year:

First, I want there to be a "face" to the organization. Your national leaders at the "grass roots" should be there to facilitate and increase communication and Section support. Invite your Regent or other members of the Board to be at your Section meeting.

Second, the ACD should begin an initiative that focuses on the practicing profession, thereby providing a continuum in ethics and professionalism education that starts in dental school and continues through one's professional career. This should always be the ACD's contribution to our profession.

And third, we each should promise to do "just one thing," or perhaps at least one thing, for our College this year.

So I pose the question. Why did you do those things you did that provided the basis for your nomination for Fellowship? I ask you to consider what part you play in the responsibility you share to maintain and promote the dental profession. I challenge you to continue to do so—to do even more. I'd like to suggest that you go home and go "MAD." That is go, Make A Difference!

I look forward to being your President and leading such an exceptional group of individual leaders in our great profession. Please join in and help me to go "MAD" as well—to Make A Difference!

The American College of Dentists has a distinguished past and a dynamic future. Commit yourself to be a dedicated part of that future in recognition of the honor of your Fellowship.

Thank you, and I look forward to seeing you in Las Vegas or sooner!

NATIONAL CALL TO ACTION TO PROMOTE ORAL HEALTH

Richard H. Carmona, MD, MPH

Convocation Address October 6, 2005 Philadelphia, Pennsylvania

t is a tremendous honor to serve as the U.S. Surgeon General and to travel the world speaking with people who are shaping the future of health care and education. The American College of Dentists' leadership in the areas of dental education and health services and your extensive efforts in the area of ethics and professional conduct have brought the oral health professional community to a higher level. It is the dedication and accomplishments of your organization that continues to provide the momentum for us to reach all those in need with the highest caliber of health care available worldwide. Although I stand before you today as the U.S. Surgeon General, I remember that just three years ago I was just a guy in Arizona, working as a trauma surgeon, a college professor, and a law enforcement officer.

Being the Nation's Doctor is a tremendous responsibility, one that I could not do without a great support team. Luckily, one of my duties as Surgeon General is to lead the United States Public Health Service Commissioned Corps on behalf of the Secretary of Health and Human Services, and I could not do my job without them.

HURRICANES KATRINA AND RITA

We continue to be stunned and saddened by the devastation brought by Hurricanes Katrina and Rita. I know you have been following the media reports regarding the response by federal, state, and local agencies and thousands of volunteers. Their efforts have been heroic and commendable. Included among these responders are the men and women whom I lead in the U.S. Public Health Service Commissioned Corps. They are fully engaged, carrying out our mission, demonstrating each day an enthusiastic public health competence tempered with empathy and compassion for the people of the Gulf region.

We have dentists in Louisiana, Mississippi, and Texas caring for evacuees, as well as forensic dentists who are working to identify those who lost their lives during the hurricanes. Our dentists have performed admirably no matter where assigned across the Gulf States Region. We are most proud of their accomplishments.

Priorities

When President Bush nominated me to be Surgeon General, he asked me to focus on three priorities.

First is prevention. This is the beginning of what each of us can do in our own lives and communities to make our families and ourselves healthier. Right now, we are a treatment-oriented society. We wait for people to get sick, and then



Vice Admiral Carmona is the United States Surgeon General, U.S. Department of Health and Human Services. we spend top dollar to make them healthy again instead of working to prevent disease from occurring in the first place. Today, tooth decay is the single most common chronic childhood disease, and more than one in five adults have reported some form of oral-facial pain in the past six months. Poor oral health can adversely affect all aspects of life. Yet in many cases the pain caused by poor oral health could have been prevented through brushing, flossing, the use of fluoride rinse or toothpaste, and regular visits to the dentist.

My second priority, and new to the Office of the Surgeon General, is public health preparedness. We are investing resources at the federal, state, and local levels to prevent, mitigate, and respond to all-hazards emergencies. For decades our nation's public health infrastructure deteriorated through neglect. Now, with the nearly \$5 billion investment over the past three years to our nation's hospitals and state public health systems, we are finally catching up to where we should be. Not only have we increased the national pharmaceutical stockpile and increased our response mechanisms, we have improved communications, healthcare education, laboratory capabilities, and hospital capacity.

The third priority I am focusing on relentlessly is eliminating healthcare disparities, an issue that is very near to my heart and the president's. I am so happy and proud that President Bush America suffers from racial and ethnic disparities in oral health. Oral diseases are found primarily among the poor, people of color, and homeless and migrant populations.

and Secretary Leavitt charged me with working with them and all of you to eliminate health disparities. Notice that they did not just charge me with reducing health disparities. They said we will eliminate health disparities.

America suffers from racial and ethnic disparities in oral health. Oral diseases are found primarily among the poor, people of color, and the homeless and migrant populations. I was one of those kids who never saw a dentist. Poor children are more than three times less likely to access dental care than their classmates. Unfortunately, children with poor oral health grow into adults with poor oral health. This has very little to do with genetics, but it has a lot to do with certain aspects of culture and a lot to do with access to health care.

We obviously have a lot of work to do. To close the gap, we must:

- Increase the racial and ethic diversity of the oral health workforce to reflect the nation's diversity
- Improve health literacy outreach to communities of color
- Expand and strengthen the capacity of the safety net system to provide oral health services

The Bush Administration recognizes these needs. This year, the Department of Health and Human Services, under the leadership of the President and HHS Secretary Leavitt, increased funding to community health centers to increase their capacity to provide oral health care to those in need. I want to thank all of you whose efforts have helped to address the disparity in access to oral health care.

Health Literacy

Woven through these three priorities is health literacy. Health literacy is the ability of an individual to access, understand, and use health-related information and services to make appropriate health decisions. Even the seemingly simple things that we can all do to stay healthy and safe, such as getting regular dental checkups and eating healthy foods, can be struggles for people who do not have access to information that is presented in a way that they can understand.

Right now low health literacy is a threat to the health and well-being of Americans and to the health and wellbeing of the American healthcare system. Low health literacy has gone largely unrecognized and untreated for too long.

Dentistry was making strides and, let's face it, making waves in improving health literacy before other professions ever heard of it. You did not always call it health literacy because it was part of your overall effort to help patients and their families. But you are some of the original health literacy advocates. As dentists, you are on the front lines of improving health literacy. I am asking you to find ways to ensure that your You are in a perfect position to act as a role model to your students and your patients and to teach healthy behaviors. People will listen to you because you have the information they need and because you are a respected member of the community and the dental profession. patients understand what they can do to stay healthy. You should offer the information even if your patients do not ask the questions.

Surgeon General's Report: Oral Health in America

Two years ago, I joined with partners to release a National Call to Action to Promote Oral Health. It builds on the objectives outlined by former Surgeon General Satcher in the *Report on Oral Health.* It was no surprise to any of you, I'm sure, that the report found that oral health means far more than healthy teeth:

- We know that oral diseases and disorders affect health and well-being throughout life.
- We know that safe and effective measures exist to prevent the most common dental diseases: dental caries and periodontal diseases.
- We know that lifestyle behaviors that affect general health and well-being, such as tobacco and alcohol use and poor dietary choices, affect oral health.
- We know that associations between chronic oral infections and other health problems such as diabetes, heart disease, and adverse pregnancy outcomes have been reported.
- We know that there are profound and consequential oral health disparities within the U.S. population.

Coming from that report, we recognized the need to change perceptions regarding oral health so that it became an accepted component of general health. My "Call to Action" seeks to expand current efforts by enlisting the expertise of individuals, healthcare professionals, academia, communities, and policymakers at all levels of society. I want to thank the Fellows of the ACD for their support of the Call to Action to Promote Oral Health, particularly their commitment to improving Americans' oral health literacy.

CHARGE AND CLOSING

At the Department of Health and Human Services, we are committed to improving health promotion and disease prevention, but the government cannot do it alone. You are in a perfect position to act as a role model to your students and your patients and to teach healthy behaviors. People will listen to you because you have the information they need and because you are a respected member of the community and the dental profession.

In the spirit of the National Call to Action to Promote Oral Health, and in the great tradition of the American College of Dentists, I ask you to continue providing services to the underserved, to continue reaching out to the people who need you the most, and to find ways to contribute your time and expertise to your communities.

The American College was one of the earliest dental organizations charged with the promotion and expansion of the dental profession while maintaining the highest standards for ethical conduct and professional standing for Fellowship. Looking around this room; I know that through your individual efforts, your work with the ACD nationally and in your communities we can make all this a reality.

I want to thank you very much for your vision and dedication. I stand ready to work with you on any effort that is important to you and to dentistry.

2005 ACD Awards

William John Gies Award

The highest honor the College can bestow upon a Fellow is the William John Gies Award. This award recognizes Fellows who have made exceptional contributions to advancing the profession and society. This year there are two recipients of the William John Gies Award.



The first recipient of the Gies Award for 2005 is **Dr**. **Gordon J. Christensen**. Dr. Christensen is a distinguished dentist who has

demonstrated broad, significant contributions to the dental profession, continually exhibiting outstanding leadership and uncompromising professionalism. He has been a preeminent force in education, research, quality of care delivery systems, advancement of dental issues, and humanitarian causes.

After completing his undergraduate studies at Utah State University, Dr. Christensen received his DDS degree from the University of Southern California, where he was student body president. He later received an MSD degree from the University of Washington and a PhD from Denver University. He has a private practice in Provo, Utah, and he specialized in fixed, removable, and maxillofacial prosthodontics. He is a diplomate of the American Board of Prosthodontics.

Over the years, Dr. Christensen has held many teaching positions. He is currently Visiting Professor at the Eastman Dental Center in Rochester, New York; Professor of Pathology at the University of Utah; and Adjunct Professor of Biological and Agricultural Sciences at Brigham Young University. In addition, he has served as Professor and Chair of the Rehabilitative Dentistry Department, University of Colorado.

Dr. Christensen has presented over forty thousand hours of continuing education throughout the world on a large number of subjects. His prowess as a speaker has been acclaimed in numerous circles. Dr. Christensen has authored over three hundred seventy articles for periodicals and journals; over eighty abstracts; numerous interviews; authored or co-authored twenty-six books or chapters; and produced nearly two hundred continuing education audio and video resources. He has served on a vast number of editorial boards and editorships, and numerous high-level positions of leadership with universities and organizations alike. Dr. Christensen has had a longstanding interest in research, specifically preventive dentistry, dental caries, dental materials, clinical investigations, health administration, tooth development and morphology, education, psychology, and prosthodontics. He and his wife Rella are co-founders of the nonprofit Clinical Research Associates, which has conducted research in many areas and publishes the findings to the profession. Dr. Christensen is also the founder and director of Practical Clinical Courses, an international continuing education organization for dental professionals established in 1981.

Dr. Christensen has been the recipient of numerous awards, including the Charles Pincus Award for Esthetic Dentistry, the Thomas P. Hinman Distinguished Service Medal, the Callahan Memorial Award, the USC School of Dentistry Hall of Fame, and the Fauchard Gold Medal, among many others. He was awarded an honorary Doctor of Science degree from Utah State University.

In his personal life, Dr. Christensen is kept busy with nine grandchildren and his love for the outdoors, whether riding an ATV or horse or fly-fishing in Alaska. If that was not enough, he rides his Harley-Davidson on CE courses with his lovely wife Rella.

Dr. Christensen's leadership, achievements, and exceptional contributions have had a significant and positive impact on dentistry, ethical dental practice, his community, and his country. He has been an extremely valued resource in dentistry.



The second recipient of the Gies Award for 2005 is **Dr. Richard V. Tucker**. Dr. Tucker is a 1946 graduate of Washington University

School of Dentistry in St. Louis, where he was named Distinguished Alumnus in 1996. Following graduation he served in the U.S. Navy for two years before opening a private practice in Ferndale, Washington, in 1948.

Early in his practice career, Dr. Tucker became involved in the activities of organized dentistry, serving as President of the Mt. Baker District Dental Society and eventually President of the Washington State Dental Association in 1963. In 1964 he become a member of the Vancouver Ferrier Gold Foil Study Club, unleashing his interest and talent in the area of cast and direct gold restorative dentistry.

Dr. Tucker made it his mission to develop a cast gold technique that would enable the finished margins to gold castings to equal those of gold foil restorations - and he succeeded. As this effort progressed, he was called upon to teach these techniques to other dentists. In 1972 Dr. Tucker became mentor of a study club for the first time. In 1976 the first Richard V. Tucker Cast Gold Study Club was formed in Vancouver, British Columbia. The number of these clubs steadily increased throughout the 1970s. 1980s, and 1990s to where there are now forty-nine Tucker Cast Gold Study Clubs all over the United States and Canada, as well as in Germany and Italy. These clubs comprise the Academy of the R. V. Tucker Study Club, with a membership of six hundred members. A meeting is held annually at one of the forty-nine clubs. Dr. Tucker has presented more than two hundred fifty lectures and graduate courses on cast gold restorations in dental schools, institutes, and other dental organizations around the world.

Besides his contributions to restorative techniques, Dr. Tucker has impressed on his members a philosophy of excellence and the highest ethical standards in both the practice of dentistry and in everyday relationships.

Dr. Tucker is the recipient of many awards related to his activities in teaching his cast gold techniques, including the Biagi Gold Medal from the XXIII Italian Congress, Remini, Italy, as well as Awards of Service and Excellence from the Academy of Operative Dentistry and the College of Dental Surgeons of British Columbia, among others. Dr. Tucker is a member of the American Academy of Restorative Dentistry.

Dr. Tucker has four children and ten grandchildren, two of whom are dentists. He loves sailing Puget Sound on his sailboat, the Line Angle, which is named for a sailing term, not a dental term. When not sailing, he enjoys spending time at this cabin. Dr. Tucker has tried to retire three times, but is still working, to the chagrin of his lovely wife of sixty years, Elaine.

Dr. Tucker has contributed greatly to elevating the standards of dentistry and greatly contributed to improving oral health care. The impact of his leadership, professionalism, and distinguished contributions is felt worldwide—far beyond his loyal following. His achievements and remarkable career have upheld the highest traditions of dentistry and public service.

HONORARY Fellowship

Honorary Fellowship is awarded to individuals who do not hold a dental degree, but have significantly advanced the profession of dentistry, and have shown exceptional leadership in areas such as education, research, public health administration, or related fields of health care. This year there are two recipients of Honorary Fellowship.



The first recipient of Honorary Fellowship is **Ms. Gerry J. Barker**. Ms. Barker received a Bachelor of Science in

dental hygiene in 1965 form the University of Michigan. In 1981 Ms. Barker became associated with the University of Missouri–Kansas City as Manager of Special Projects, Department of Oral Diagnosis. She soon became immersed in oral oncology, nicotine addiction, tobacco use prevention and cessation, dental management of the medically compromised patient, and geriatric oral health. She found time to earn her Master of Arts in Education from the university in 1989. Ms. Barker is a Professor Emerita of the University of Missouri–Kansas City. She has recently finished serving as Professor in the Department of Dental Public Health and Behavioral Sciences, and she was Coordinator of the Oncology Education and Oncology Dental Support Clinic.

Ms. Barker has earned a national and international reputation as a leader in the field of tobacco cessation and treatment or oral cancer. She has presented numerous, significant invited lectures around the world. Ms. Barker has also authored or co-authored more than eighty publications, including journal articles, textbook chapters, and brochures.

Ms. Barker also serves in positions of leadership on a large number of local, state, and national organizations. She has served as Vice President and Executive Committee member of the International Society for Oral Oncology for nine years. She also helped initiative and coordinate two other projects, "Students Take Action" and "Pouring from the Heart."

"Students Take Action" is a program for undergraduate dental students to provide services to the poor, disabled, homeless, and disadvantaged. Throughout the academic year, students perform screenings at schools; conduct clothing drives and food collections; and provide free dental services to indigent dental patients, at retirement homes and other locations. Students and faculty members also participate in "Sheer Madness" where participants agree to have their heads shaved for particular monetary donations. Certain faculty members and the dean are prime targets. This year \$13,000 was raised to send children with cancer to a summer camp designed especially for them. "Pouring from the

Heart" is an annual black-tie dinner with a silent auction that raises funds to support the Special Patient Clinic of the dental school. This has grown to where more then three hundred people attend. For the past several years, proceeds have surpassed \$100,000.

Ms. Barker is the recipient of numerous honors and awards, including the National American Cancer Society Professional Education Award; American Dental Hygienists' Association/Warner Lambert Award for Innovations in Dental Hygiene Service Delivery; Outstanding Dental Hygienist of the Year, University of Michigan; Susan Brockman-Bell Humanitarian Award; and numerous Distinguished Teacher Awards from the University of Missouri–Kansas City.

Ms. Barker is an avid gardener, especially of flowers, and she loves being a grandmother. She is very active in her church and looks forward to vacation time in Colorado. Ms. Barker is an active member of the FAT COWS, meaning the Fun and Travel Club of Outrageous Women—a group primarily for hygienists.

Ms. Barker has demonstrated a heart and passion for highly important public health issues. Her leadership and record of accomplishments are exceptional, and she is motivated by a sense of service and selfless devotion to duty.



The second recipient of Honorary Fellowship is **Dr. Lawrence P. Garetto**. Dr. Garetto received his bachelor's degree from

the University of California, followed by a Master of Science and PhD in physiology from Boston University. He began his career at Indiana University School of Dentistry in 1988 as an Associate Professor of Orthodontics and Director of the Bone Research Laboratory. As the curriculum at Indiana shifted to a more problem-based format, he became very involved in the university's problembased learning program. He was soon recognized internationally as a leader in student-centered learning. Dr. Garetto has been instrumental in incorporating ethical and professional components into all of the problem-based learning cases that the dental students address in their first two years. His interest in the overall dental curriculum, especially the ethical and professionalism aspects, led him in 2004 to be appointed Associate Dean for Dental Education.

Besides strong affiliations with physiology and research organizations, he has been a member of the American Society for Dental Ethics (formerly PED-NET) since 1999 and is currently that organization's President-elect. He was elected an honorary member of Omicron Kappa Upsilon in 2002, and he received an Indiana University School of Dentistry Teaching Award in 1998. Dr. Garetto has been instrumental in developing a Professional Conduct Code for students at Indiana University School of Dentistry. This is a code that all students sign and swear to uphold as they enter the profession as first-year students. He also chairs the Professional Conduct Committee, which is composed of representatives from all classes and which hears cases of student conduct that may be unethical or unprofessional. The committee spends many hours investigating cases, and with Dr. Garetto's guidance, provides appropriate judgments.

Dr. Garetto has earned a reputation as an outstanding teacher. He is director of courses and modules for several key components of the curriculum. He has made countless contributions to the cases for the problem-based learning program. Further, Dr. Garetto continues to be active in masters and doctoral programs as a thesis or dissertation committee member. He consistently receives excellent reviews from both students and faculty members for these efforts.

Dr. Garetto's research record is outstanding. He has served as a reviewer on five national journals and has served as a grant reviewer for six agencies, including NIH and NASA. He has authored or co-authored more than fifty articles and more than fifty abstracts. He has presented a wide variety of venues, including at a workshop on ethics at this year's American Dental Education Association meeting.

An avid woodworker, Dr. Garetto enjoys making fine furniture and turning bowls, and he participates in masters' workshops. He also fully supports his daughter's love for volleyball, attending all the breakfasts and games. Dr. Garetto also finds time for bird hunting and he has even restored an old Mercedes he found on a farm with chickens living in it, driving it to school when the weather cooperates. Dr. Garetto is also an active member of the Knights of Columbus.

Dr. Garetto has an exemplary record in teaching, service, and research, all highlighting his passion for ethics and professionalism.

Ethics and Professionalism Award

The Ethics and Professionalism Award recognizes exceptional contributions by individuals or organizations in the promotion of ethics and professionalism in dentistry. The award is given for effectively promoting ethics and professionalism in dentistry through leadership, education, training, journalism, or research.



It is an honor and privilege for the American College of Dentists to recognize the American Dental

Association as the first recipient of the Ethics and Professionalism Award, and this is the highest such honor afforded by the College.

Since 1866 the ADA has been the architect, the steward, and the champion of dentistry's code of ethics. The ADA Code has been historically, and is now premised on the benefit of the patient as the primary goal of the profession. Its Principles of Ethics and Code of Professional Conduct is recognized as one of the hallmarks that distinguishes dentistry as a true profession. The ADA's membership, over 152,000 strong, voluntarily agrees to abide by the ADA Code as a condition of that membership. ADA members recognize that continued public trust in the dental profession is based on the commitment of individual dentist to high ethical standards of conduct.

The direct responsibility for ensuring that the ADA Code remains strong and relevant and is enforced through a uniform and fair disciplinary process entrusted to the ADA Council on Ethics, Bylaws and Judicial Affairs (CEBJA). The ADA established CEBJA in 1913 to advise on matters of interpretation on the application of the principles of ethics. CEBJA is composed of volunteer member-dentists from across the United States who are appointed by the ADA House of Delegates and serve four-year terms.

CEBJA maintains significant professional functions, including:

- Promulgating advisory opinions that apply the ADA Code to specific situation as guidance to the membership. The current ADA Code contains twenty-eight advisory opinions.
- Serving as the appellate tribunal in the tripartite member disciplinary system for the ADA, its fifty-three constituent (state) and five hundred and forty-six component (local) dental societies.
- Supervising the annual publication of the ADA Code, in print and electronically, which is disseminated to dental societies, dental students, new members, and others.
- Providing, since 1995, a national ethics program for junior and senior dental students titled "SUCCESS: An Ethical Perspective to Starting Your Dental Practice."
- Serving, since 1995, as the sole judge of the ADA Golden Apple Award for Dental Ethics, recognizing the outstanding activities of a dental society.

- Developing, since 2004 and in cooperation with the Journal of the American Dental Association, a regular feature titled "Ethical Moments" to promote awareness and educate members about the ADA Code.
- Providing education, information, and assistance on ethics and professional matters for state and local dental societies.

Ethics and professionalism are the cornerstones of the ADA's major policies and programs impacting the public and the profession, such as peer review, reporting suspected cases of patient abuse and neglect, impaired dentists and well-being issues, treatment of patients with HIV and other bloodborne pathogens, and evidence-based dentistry.

In 2002, in order to highlight the needs of underserved children and what dental professionals are dong to improve the well-being of these children, the ADA created the Give Kids A Smile program. Held each February, this program provides free oral health education, screening, and treatment services to children from low-income families across the country. This event has been recognized by numerous organizations, including the U. S. House of Representatives.

The ADA has a long-standing, comprehensive, and consistent record of improving the ethical climate of dentistry. Its leadership and benefit to the profession are immense.

This award is made possible by the generosity of The Jerome B. Miller Family Foundation. Dr. Richard Haught, President of the American Dental Association, will accept the award.

Section Achievement Award

The Section Achievement Award recognizes ACD Sections for effective projects and activities in areas such as professional education, public education, or community service.

The **Hudson-Mohawk Section** is the recipient of the 2005 Section Achievement Award.

The Hudson-Mohawk Section is honored for developing "Finding Our Way: Dental Ethics in 2004" as part of the Saratoga Dental Congress. This program was considered under the professional education category. The purpose of this half-day program was to present a comprehensive program in ethics to dentists and their staffs on the specific issues involving the dentist-patient relationship. The program also covered broader ethical concepts inherent in the delivery of oral health care. The program was extremely well received and future full-day programs are planned.

Section Newsletter Award

The Section Newsletter Award is presented to an ACD Section in recognition of outstanding achievement in the publication of a Section newsletter. The award is based on overall quality, design, content, and technical excellence of the newsletter. This year's recipient is the **Indiana Section**.

Lifetime Achievement Award

The Lifetime Achievement Award is presented to Fellows who have been members of the College for fifty years. This recognition is supported by the Dr. Samuel D. Harris Fund of the ACD Foundation. This year's recipients are:

Dr. Henry M. Barnhart Dr. Horace A. Brayshaw Dr. A. Ian Hamilton Dr. William B. Irby Dr. Jean-Paul Lussier Dr. Ralph E. McDonald Dr. Harold R. Ortman Dr. John E. Rhoads Dr. Erwin M. Schaffer Dr. Charles T. Smith, Sr. Dr. Vincent A. Tagliarino Dr. William Themann Dr. Walter S. Warpha

2005 Fellowship CLass

The Fellows of the American College of Dentists represent the creative force of today and the promise of tomorrow. They are leaders in both their profession and their communities. Welcome the 2005 Class of Fellows. Randy Adams *Richmond, VA*

Jay C. Adkins *Lubbock, TX*

Mary E. Aichelmann-Reidy *Baltimore*, *MD*

George E. Anastassov New York, NY

Craig S. Armstrong *Houston, TX*

James K. Bahcall *Milwaukee, WI*

Lance E. Banwell *Woodbury, CT*

Bradley W. Barnes Normal, IL

Bruce R. Barnhard West Orange, NJ

Steven M. Baum Newark, NJ

David A. Behrman New York, NY

Richard A. Berryman Concord, NH

David S. Binder New York, NY

Dan L. Blackwell *Lee's Summit, MO*

Bruce Blasberg Vancouver, BC Michael M. Blicher, *Washington, DC*

Meredith C. Bogert *Philadelphia, PA*

Catherine A. Boos Blackwood, NJ

William H. Bragdon Greenville, SC

Robert M. Brandjord Burnsville, MN

Warren A. Brill *Baltimore, MD*

Donna M. Brode *Windsor, ON*

James C. Broome *Birmingham, AL*

Thad L. Brown III *Jonesboro, AR*

William C. Brown Greenville, SC

Lysette L. Brueggeman *West Bend*, *WI*

Cavan M. Brunsden *Old Bridge, NJ*

John A. Buist Englewood, CO

Roy N. Burk *Littlefield, TX*

Jill M. Burns *Richmond, IN*

Gary D. Carlsen *Huntington Beach, CA*

Brian R. Carpenter *Cumming, GA* William Catalano Vancouver, BC

Noel K. Childers *Birmingham, AL*

Bryan Chrz *Perry, OK*

Patrick T. Cleary *Dublin, Ireland*

Dean G. Cloutier New Haven, CT

Thomas E. Condron *Clarksburg, WV*

Manuel A. Cordero Sewell, NJ

Santos Cortez Long Beach, CA

Bernard J. Costello *Pittsburgh, PA*

Lawrence K. Cox II *Adrian, MI*

Delbert A. Crowe Nanaimo, BC

Mary E. Cuccaro *Pittsburgh, PA*

Richard H. Cutler Fort Washington, PA

Peter C. Damiano *Iowa City, IA*

Joseph P. Davis, Jr. *Temple, TX*

Paul G. Davis, Jr. *Bedford, TX*

Salvatore P. De Ricco *White Plains, NY*

Matthew G. Delbridge *Goldsboro*, *NC*

Matthew J. Dennis *Gainesville, FL*

Louis F. DeSantis Staten Island, NY

Bruce A. Doll *Pittsburgh, PA*

John M. Douglass, Jr. *Nashville, TN*

Benson C. Duff Grand Blanc, MI

James D. Duncan Jackson, MS

Gerald L. Dushkin Montreal, QU

Michael A. Dzitzer Somers Point, NJ

David G. Edwards *Wellsburg, WV*

Robert J. Eisenberg Boca Raton, FL

Roger L. Eldridge Baltimore, MD

Arthur C. Elias New York, NY

Orin W. Ellwein Sioux Falls, SD

Shahrbanoo Fadavi *Skokie, IL*

Egidio A. Farone New York, NY

Scott J. Farrell Binghamton, NY Barry A. Feder *Issaquah, WA*

Ralph B. Feriani Anchorage, AK

Bonnie C. Ferrell *Denver, CO*

Laurence J. Fields *Gaithersburg, MD*

Steven R. Fink *Hamburg, NJ*

Barry P. Fleming *Red Deer, AB*

Steven C. Fong Fremont, CA

Charles L. Ford III *St. Petersburg, FL*

Stanley B. Foxman *Rockville*, *MD*

Lily T. Garcia San Antonio, TX

Gregory J. Gardner Indianapolis, IN

Gary D. Gardner *Lawton, OK*

Steven G. Garrett *Winchester, VA*

David L. George Baltimore, MD

C. Richard Gerber *St. Marys, WV*

Daniel J. Gesek, Jr. Jacksonville, FL

Nicolaas C. Geurs *Birmingham, AL*

Graziano D. Giglio New York, NY

Burton H. Goldstein *Vancouver, BC*

Douglas J. Gordon *Pinole, CA* C. Bruce Gordy *Orlando*, *FL*

Michael J. Goulding *Fort Worth, TX*

Michael R. Gradeless Fishers, IN

Edward J. Green *Albany, GA*

Richard V. Grubb *Havre de Grace, MD*

Betty A. Haberkamp *Chicago, IL*

John M. Hagopian *Niles, IL*

Martin J. Halbur *Carroll, IA*

Robert B. Hall, Jr. *Winchester, VA*

Robert S. Hall *Farmington, CT*

Jerry L. Halpern *New York, NY*

John J. Hanck Fort Collins, CO

Hayley L. Harvey Des Moines, IA

Joseph A. Herbst Silver Spring, MD

Gary E. Heyamoto *Bothell, WA*

Kenji W. Higuchi Spokane, WA

Kenneth L. Hilsen *Ridgewood, NJ*

Brent L. Holman *Fargo, ND*

Kenneth E. Hornowski Ashville, NC

Arlen R. Horsewood *Hoagland, IN*

Berta I. Howard *Hamilton, OH* Ralph L. Howell, Jr. *Suffolk, VA*

Richard F. Hunter *Toronto*, *ON*

Peter R. Hupfau Vancouver, BC

Michael A. Ignelzi, Jr. Ann Arbor, MI

Ronald S. Jacobson *Chicago, IL*

Robert A. Jaffin *Hackensack, NJ*

Daniel L. Jones Dallas, TX

James R. Jorgensen *Phoenix, AZ*

Richard B. Kahn New Brunswick, NJ

Mark I. Kampfe *Sioux City, IA*

Liza Karamardian *Sunnyvale, CA*

Jerry P. Katz *Austin, TX*

Stanley M. Kaufman Oakland Park, FL

Kevin M. Keating *Sacramento, CA*

Richard M. Kelley Frederick, MD

John W. Killip *Kansas City, MO*

Betty D. Klement Orange Park, FL

Kirk B. Kollmann *Chicago, IL* Michael S. Kopecky West Bend, WI

David Kusovitsky New Haven, CT

Robert M. Lamb *Edmond, OK*

Timothy R. Langguth *Duluth, MN*

Marilyn S. Lantz Ann Arbor, MI

David M. Lebsack *St. Joseph, MO*

David A. Lederman *Lakewood, NJ*

Gabriela N. Lee *New York, NY*

James E. Lee *Conway, SC*

Thomas B. Lefler *Hot Springs Village, AR*

Steven M. Lepowsky *Farmington, CT*

Claudio M. Levato, Bloomingdale, IL

Rudolph T. Liddell Brandon, FL

Alexander A. Lieblich *St. Vancouver, BC*

Barry E. Lipton *Largo, FL*

Perng-Ru Liu Birmingham, AL

Patrick M. Lloyd *Minneapolis, MN* William A. Lobel Saugus, MA

John B. Loeffelholz Fort Worth, TX

Richard M. Lofthouse, Sr. *Fennimore*, *WI*

Melanie R. Love Falls Church, VA

Amy L. Ludwig New York, NY

John L. Lytle *La Canada, CA*

Stanley M. Mahan, Jr. *Brierfield*, *AL*

Hans S. Malmstrom *Rochester, NY*

Edward A. Marcus *Yardley, PA*

Stanley Markman *Fort Lee, NJ*

Rodney M. Marshall *Tuscaloosa, AL*

James P. McLemore III Jackson, TN

Alston J. McCaslin VI Savannah, GA

Richard E. McClung *Lewisburg*, *WV*

Dorothy McComb Toronto, ON

Neville J. McDonald Ann Arbor, MI

Joseph M. McManus, Jr. New York, NY

Stanley J. McNeme Fort McPherson, GA

M. Gary McRae *Courtenay, BC*

Phyllis G. Merlino Staten Island, NY Jon S. Michael *West Lafayette, IN*

Dennis M. Mills *Deadwood, SD*

Daniel T. Miyasaki Sacramento, CA

David R. Mlnarik *West Point, NE*

Robert N. Modlin *Lafayette*, *IN*

Joseph F. Morales *New York, NY*

Carol S. Morales New York, NY

Laura J. Murcko *Littleton, CO*

Stephen C. Myers Panama City Beach, FL

Ronnie Myers New York, NY

Patrick M. Nearing *La Grande, OR*

Thomas E. O'Brien *Vancouver, BC*

Donald R. Oliver *St. Louis, MO*

John H. Paul *Lakeland, FL*

James L. Pavelka Denton, TX

William L. Pearce Des Moines, IA

Ivy D. Peltz New York, NY

Gregory E. Phillips Columbus, IN

Randy J. Phillips Los Angeles, CA Mervyn F. Pinerman *Columbia, MD*

Thomas R. Pixley *Fort Collins, CO*

LeeAnn G. Podruch *Shelburne*, *VT*

Stephen J. Puerini *Cramston, RI*

William L. Purifoy Fort Worth, TX

Fred C. Quarnstrom *Seattle, WA*

Donald L. Rastede *Rock Falls, IL*

J. Steven Ratcliff *Key Biscayne, FL*

Craig S. Ratner Staten Island, NY

Edward T. Reidy Santee, CA

Jeffrey H. Rempell *Clifton, NJ*

Colin R. Rendell *Brisbane, Australia*

Elizabeth C. Reynolds *Richmond, VA*

James L. Ribary *Gig Harbor, WA*

Neal B. Richter *Merrillville, IN*

Enrique A. Riggs New York, NY

O. H. Rigsbee *Carmel, IN*

Donald L. Roberts *Billings, MT*

Leslie B. Roeder *Houston, TX*

Kenneth B. Rowan Jefferson City, MO David L. Russell, Sr. Fort Walton Beach, FL

William A. Russell *Little Rock, AR*

Alex C. Salinas San Antonio, TX

Jeffrey B. Sameroff *Pottstown, PA*

David A. Schimmel *State College, PA*

Willis L. Schlenker *Loma Linda, CA*

Eugene J. Schmidt Fountain Valley, CA

Adam T. Schneider Gaithersburg, MD

Murray Schwartz New York, NY

Steven S. Schwartz Staten Island, NY

Adriana Segura San Antonio, TX

Ronald R. Sepic Uniontown, PA

Timothy J. Shambaugh Fort Wayne, IN

Jay H. Sher *Livingston, NJ*

Bhavna Shroff *Richmond, VA*

James Randall Smith *Tullahoma, TN*

Lee E. Snelson *Warren, OH*

James M. Soberman New York, NY

Robert S. Sorochan Nanaimo, BC

Meropi N. Spyropoulos Athens, Greece J. Michael Steffen *Edmond, OK*

Jeffrey I. Stein *White Plains, NY*

James D. Stephens Palo Alto, CA

Mark D. Stevenson Concord, CA

Christian S. Stohler *Baltimore, MD*

Howard E. Strassler Baltimore, MD

Judith M. Strutz San Bernardino, CA

Steven B. Syrop New York, NY

Russell S. Tabata *Honolulu, HI*

Donald N. Taylor, Jr. *Alliance, NE*

Leslie Z. Taynor *New York*, *NY*

Bruce R. Terry *Wayne, PA*

John H. Thee *South Pasadena, FL*

James M. Tinnin *Fayetteville, AR*

Steven H. Tinsworth *Bradenton, FL*

Bruce R. Trefz *Gastonia, NC*

Robert M. Trombly *Denver, CO*

Timothy S. Trulove *Montgomery, AL*

Steven J. Tunick *New York, NY*

David A. Varner South Bend, IN

Nancy L. Villa *Old Bridge, NJ*

Joel M. Wagoner *Chapel Hill, NC*

Marshall Lynn Wallace Sumter, SC

Douglas P. Walsh Seattle, WA

James A. Weddell Indianapolis, IN

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The Legal Standard of Care

Arthur W. Curley, JD

Abstract

Standard of care is a legal concept of establishing, on a case by case basis, the minimal quality of care that must be met to defend against a claim of negligence in a lawsuit. Unlike other "standards," it is not prescriptive, but it does encompass diagnosis and overall management of patients, not just treatment. The standard is determined by assessment of the credibility of expert witnesses, the appropriateness of written evidence, and pertinent laws and regulations. Although the burden of proof rests with the plaintiff, only a preponderance of the evidence, not certainty beyond doubt, is required. Practice, especially diagnosis and informed consent, must be updated continuously.

t has been estimated by the American Dental Association that every year one out of every ten dentists is involved in a legal dispute concerning his or her practice. This author has been defending dentists for over thirty years and has observed that many legal claims arise as the result of a practitioner's failure to appreciate the required legal standard of care, rather than careless treatment. Nationwide, professional liability carriers routinely offer dental risk management courses that include discussions of the legal standard of care, with the view in mind of stemming the tide of malpractice claims.

During the education and training of prospective dental professionals, students are taught criteria for the diagnosis and treatment of a dental condition. However, the legal standard of care is broader and more dynamic. The prudent practitioner, hoping to avoid being drawn into the legal system, needs to have an appreciation of the legal standard of care, and to implement that knowledge in practice protocols.

Standard of Care Defined

Legal standards of care are generally determined by the laws of the state in which the dental professional practices and is licensed. However those laws are seldom specific as to any method of diagnosis, plan, or required treatment. Rather, the laws are very general as to the definition of the legal standards of care. In addition, there are Federal Laws that can affect practice, such as HIPAA and OSHA. Although state statutes vary to some degree, there is a basic universal definition of the legal standard of care:

A dentist is negligent if he or she fails to use the level of skill, knowledge, and care in diagnosis and treatment that other reasonably careful dentist would use in the same or similar circumstances. This level of skill, knowledge, and care is sometimes referred to as "the standard of care." (Calif. Civ. Jury Instructions '501. Standard of Care for Healthcare Professionals)

The legal standard of care in not just the very best care, or treatment by only the best healthcare provider. It is also not the average care in the community. Rather it is that minimum level of care to which a patient is entitled that is safe and reasonable.

Failure to provide the legal standard of care is considered professional negligence or what is commonly referred to as malpractice. For a patient to prevail in a malpractice claim, they must prove three elements: that injury occurred, that the dental practitioner failed to meet the legal standard of care, and that the failure was the legal cause of the injury. Only upon proving those three elements



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Source of the Standard of Care

Generally the law provides that there can be multiple sources for the legal standard of care, and they are not limited to or solely defined by the specific training of the defendant in a legal dispute. Those sources include: 1) the opinion of expert witnesses; 2) recognized or authoritative texts, journals, or treatises; and 3) statutes and/or regulations. In a malpractice suit, a jury of mostly lay persons will generally determine whether or not a dental practitioner violated the standard of care by comparing and contrasting the evidence provided by each side (plaintiff vs. defendant) in a trial. In the case of an accusation before a licensing board, an administrative law judge sitting without a jury will make the determination as to any violation of the legal standard of care.

Expert Witnesses

The primary source for the determination of the legal standard of care is the opinions and testimony by expert witnesses. The legal qualifications for such expert witnesses include being licensed to perform the treatment in question or having expertise in the area of one of the issues in dispute. Therefore an expert may be a general practitioner or a specialist in the area of the treatment in question, or an expert in heart values and postdental infections, such as a cardiologist or infectious disease physician in cases of postoperative septicemia. Experts have to be able to describe and justify their opinion as to the standard of care in the community of the defendant's practice. The jury's role is to determine the relative credibility and/or believability of each expert's opinions. In order to justify their opinions on the standard of care, experts generally will review the records, x-rays, and depositions.

Expert witnesses typically come from two sources: treating dentists and retained experts. Most often they are subsequent treating dental care providers who have expressed some criticisms of the care of another dentist. The other source of experts, those who are retained on behalf of the plaintiff or defendant. are those who have not seen the patient for treatment and instead evaluate the standard of care by reviewing records and testimony. Therefore understanding and maintaining the general standard of care in one's community is critical for a dentist striving to avoid claims of substandard care.

Experts can also render opinions as to the management of dental auxiliaries, such as hygienists, assistants, etc. and their impact on the dentist's performance within the standard of care. Examples would include transmission of referral information, scheduling follow-up appointments or recalls, and maintaining OSHA standards. Many legal claims arise as the result of a practitioner's failure to appreciate the required legal standard of care, rather than careless treatment.

...The legal standard of care [is the] minimum level of care to which a patient is entitled that is safe and reasonable.

Authoritative/Recognized Texts

The legal standard of care can also be defined by way of authoritative or well recognized texts, peer review journals, or treatises. However, whether or not a writing is considered authoritative or well recognized is determined by a judge who considers expert witness testimony as to the qualifications of the text or journal at issue.

In addition, if the defendant has referred to or relied upon a particular document in order to perform a diagnosis or treatment, then that writing may be admitted as evidence of a standard of care. Or, if the defendant is a member of a dental society that promulgates standards or follows well accepted guidelines, such as the American Heart Association, these documents may also be considered evidence of the standard of care.

STATUTES AND CODES

Most states have laws providing that any violation of a statute is presumptive evidence of a violation of the standard of care or professional negligence, and in such cases expert testimony is not required. A typical case might be the failure to adhere to OSHA regulations for the management of potential bloodborne pathogens. For example, should a patient develop a post-treatment infection. an OSHA violation would be considered evidence of substandard care and the defendant's only defense would be to prove the lack of a causation of the infection by the OSHA violation. But in any case, expert testimony would not be required on the issue of a breach of the standard of care when there is evidence of a violation of a code or statute.

Informed Consent and Refusal

Most states also have statutes that require dental care providers to obtain

informed consent before providing treatment. However the laws are not specific as that the details that must be part of the informed consent discussion, only that the patient must be told the significant risks, benefits and alternatives to recommended treatments, therapies or medications. With a few exceptions (IV sedation: California Code of Regulations, (1685) the law does not require that the informed consent be in writing. However, risk managers urge their use as a deterrent to claims of lack of informed consent because studies have shown that patients do not recall pre-treatment discussions and insist, with credibility, that they were not warned. Therefore written documentation, by way of a signed consent form, can be powerful evidence in the defense of a malpractice claim.

As dentistry has become more complex and involves more treatment options, a new standard of care has arisen, namely the obligation to provide informed refusal, including the risks of the patient's declining a recommended treatment, therapy, or medication. An example would be the offering to a patient the option of dental implants versus a partial denture. These new standards for consent have been codified in some states (Calif. Jury Inst. '535). Therefore, it is recommended that inform consent forms be used routinely and updated regularly.

Burden of Proof

The patient in a typical malpractice suit, or the attorney general in a board hearing, has the burden of proving (convincing a jury or administrative law judge) that a violation of the standard of care has occurred. Unlike criminal cases where the evidentiary level is "beyond a reasonable doubt," the plaintiff need only provide evidence of a probability (not a certainty) of a breach of the standard of care. A probability in the law means greater than 50%, meaning a jury can have 49% doubt and still find that the defendant failed the standard of care.

The Dynamic Legal Standard of Care

Because of the speed of communication and information distribution via the Internet, the legal standard of care has become dynamic, subject to rapid and significant changes in a short period of time. For example, just a few years ago, health histories had to be modified to add a question regarding a patient's use of the medications known as Fen-Phen. Today histories need to updated to include questions about patient's use of bisphosphinates prior to performing any dental surgery. Therefore the prudent practitioner must stay current with continuing education and communications from dental societies such as the ADA and AGD, as well as governmental agencies such as the CDC and OSHA.

Health history forms should be revised annually, staff protocols and management regularly reviewed, consent forms used and frequently updated, and record-keeping methods periodically evaluated for content, detail, accuracy, and thoroughness.

With the increasing availability of digital systems for the dental office (records, x-rays, and communications) the standard of care requires more detailed record keeping because of the ease of recording and compiling information. Combined with an understanding that the standard of care is a community standard, as well as an appreciation of some of the codes controlling the practice of dentistry, the prudent practitioner can avoid claims of substandard care that have more to do with the practice of dentistry rather than actual provision of treatment.

The ADA's Practice Parameters

Donalda M. Ellek, PhD

Abstract

The ADA parameters of care have served the needs of practicing dentists for fifteen years. Their purpose is to describe a range of treatment options that dentists will want to consider, in combination with particular clinical conditions and patient preferences. These options have been developed based on available evidence and a consensus of professional judgment. The ADA has exercised concern that parameters not be used, out of the context of individual professional judgment, for policy purposes. n the early 1990s, the healthcare system's development of parameters, guidelines, and standards stirred much debate and controversy, which focused largely on terminology, definitions of those terms, and ohow they were different from each other. Underlying this debate, however, was the contentious issue of how parameters, guidelines, and standards were intended to be used and how appropriate use of them could be managed. Definitions and terminology were formulated by the developers of the parameters approach primarily to clarify and support the developers' intended use.

Today, there is still no authoritative definition of parameters and, in fact, the need to draw tight divisions between guidelines, standards, and parameters has virtually disappeared in the eyes of some. The terms are often used interchangeably. Some organizations use the term "parameters" as an umbrella under which to include practice options, practice guidelines, practice policies, and practice standards. And the debate over their use continues unabated. This paper will describe how parameters have evolved over the last fifteen years, the issues surrounding terminology, their basis in scientific evidence and professional consensus, and the concerns about how they are used. The experience of the American Dental Association (ADA), when it began the development of dental practice parameters in 1994-1997, can illustrate some of the concerns and considerations that underlie the development of parameters in general.

Terminology

When the ADA formulated the plan for parameters development, there was lengthy discussion of the terminology that would most accurately capture the ADA's intent in developing them. The ADA discussed the meaning and interpretation of the terms "standards," "guidelines," and "parameters." The term "parameters" was finally chosen and was defined as describing the full range of appropriate treatment for a given condition. In comparison to standards or guidelines, parameters would describe all appropriate options for treatment and offered the greatest latitude for exercising professional judgment in choosing among appropriate options. The ADA interpreted standards as intending to be applied rigidly with little justification for deviation from them. Standards, in essence, prescribed what the practitioner must do. Although guidelines were considered more flexible than standards and allowed for deviation based on individual patient needs, they were thought to be more prescriptive than parameters, and thus the ADA opted to develop parameters.



Dr. Ellek is manager of the Office of Quality Assessment and Improvement in the American Dental Association's Council on Dental Benefit Programs. She may be reached at ellekd@ada.org. The American Dental Association, in 1993, defined parameters as follows, and this definition remains current:

Parameters describe the range of appropriate treatment for a given condition. In comparison to standards or guidelines, parameters broaden the range of professional judgment for the practitioner. They strengthen the ability of the provider to evaluate options and arrive at appropriate treatment.

The ADA parameters are intended as an aid to clinical decision making and thus describe the clinical considerations in the diagnosis and treatment of oral health conditions. As the ADA parameters were developed to aid clinical decision making, there was at the same time an effort to avoid prescriptive, "cookbook" instructions to practitioners. Like most other health professional associations, its perspective is that dentistry, like so much of direct healthcare delivery, includes an art and clinical experience that is invaluable to delivering care and is indispensable for tailoring care to the individual needs of patients. Parameters. as opposed to guidelines and standards, seemed to explicitly highlight professional judgment and allow for the possibility of considering not only the clinical circumstances of the individual patient, but the patient's social, cognitive, and demographic characteristics. Equally important, it permitted the patient be able to express his or her own preferences when weighing the costs and benefits of one treatment option over another. Explicit statements regarding the importance and need for professional

judgment appear in parameters, and the terminology used in parameters statements (or recommendations) supports professional judgment as well.

When reading the dental practice parameters, it is apparent that the statements vary in the degree to which they are prescriptive. Some statements in the parameters say the dentist "may," while other statements say the dentist "should." In the ADA's parameters, on the topic of dental caries, one parameter statement says "Pulpal tissue should be protected when indicated." Another statement says "Chemotherapeutic agents may be used for caries prevention and the treatment of incipient caries." The word "should" suggests stronger direction than the word "may." The ADA comments on this point in its preamble to the parameters, saying that considerable thought was given to the use of the verbs "may," "should," and "must." The verb "may" clearly allows the practitioner to decide whether to act. The verb "should" indicates a degree of preference and differs in meaning from "must" or "shall" (which require the practitioner to act). Similar use of the verbs "may" and "should" are also used in both parameters and guidelines developed by some of the other dental professional organizations. Thus, the language within parameters can differ in the degree to which it is prescriptive.

The measured degree of prescriptive terminology not only supports professional judgment, but varies with the developers' perceived reliability of the parameters statement, whether the statement is based on the consensus of professional opinion or the scientific evidence supporting the parameters. A lesser degree of variation in the norm regarding a certain parameter statement may prompt the developers to use the word "should," but a greater degree of variation might prompt the word "may."

Scientific Evidence

Another distinction sometimes made between standards, guidelines, and parameters is the degree to which each is based on sound evidence of the outcomes of care. This distinction was made even in 1990, when David Eddy specified three types of "practice policies" each based on a different level of clarity of the evidence about the outcomes of care and the importance of the outcomes to patients (Designing a Practice Policy-Standards, Guidelines, and Options. *Journal of the American Medical* Association, 263:3077-3084, 1990). Eddy's concept was as follows: Standards were based on very strong evidence and exceptions to following the standard would be rarely justified. Guidelines were based on less strong evidence and exceptions were more likely than for standards. The term "options" was applied when several treatment options existed, but the evidence was weak or nonexistent and so the evidence did not warrant a specific recommendation. Thus, the degree of scientific strength behind recommendations is another dimension by which a distinction could theoretically be made between parameters and other types of recommendations.

Parameters, then and now, are developed on the basis of scientific evidence to the extent that it is available. But, the methodology used to develop parameters in the early and mid-1990s relied heavily on developing a consensus of professional opinion. The ADA states in the preamble to its parameters that "Balancing individual patient needs with scientific soundness is a necessary step in providing care." The ADA was not unique in focusing on consensus building. Other provider groups and public agencies stressed the importance of professional consensus as well. In part, it may have reflected a relative dearth of strong evidence on clinical topics at the time, especially if an organization's objective was to develop a comprehensive set of recommendations for practitioners. And, it may have reflected a genuine regard for the consensus of professional opinion, especially for its importance to individual patient-centered care and for prudently examining the limits of appropriate care. Equally importantly, it may have reflected the health professions' need to carefully adapt to a new level of transparency or accountability in healthcare delivery.

Health professionals have always disseminated new technology and scientific information among themselves; it had always been a part of the professions' responsibility for the quality of care. The unsettling change for practitioners that came about in the late 1980s and the 1990s was that those outside the profession-policymakers and payers-became interested in quality of care. Policymakers and payers began to view quality of care as a factor by which to stimulate competition within the healthcare market and to so control the costs of care. As a result, policymakers and payers were interested in measuring or evaluating the quality of care; parameters would likely provide the very information from which such evaluations could be created. Practitioners, in general, were uneasy with information being available to payers, patients, and other non-clinicians who might not understand how recommendations should be applied in individual cases, could incorrectly apply parameters in developing quality evaluation criteria, and would ignore the importance of professional judgment in providing care.

If practitioners are going to be held publicly accountable for adhering to parameters, it is essential for them to have a hands-on role in their development. In addition, public accessibility of

parameters and other recommendations places pressure on developers to be sure that the recommendations are valid and reliable. Professional consensus became a methodology in itself for developing parameters. Well-conducted consensus building provided the profession with a politically sound mechanism for developing parameters and also provided validity and reliability that the parameters represented practice norms, especially where scientific evidence was lacking. It also served to increase the acceptance of parameters by practitioners. The drawback to using professional consensus was that third-party payers and others outside the health profession could perceive a very narrow line between professional consensus and professional interest and gain and so might feel free to draw those boundaries to suit their purposes. Similarly, practitioners perceived a very narrow line between appropriate use of parameters by those outside the health professions and distortion of parameters for the sake of cost containment or expedient policy decisions. This problem has vet to be resolved, but the advent of evidencebased methods of developing professional recommendations may bring some objectivity to the issue.

Methods for evaluating evidence have become more refined, yielding more valid and reliable results, and so the reliance on scientific evidence has gained much credibility. The National Guideline Clearinghouse (NGC) exemplifies the current effort to establish parameters and other types of recommendations on scientific evidence. The NGC is a public database of (what is termed) "guidelines." The term "guidelines," as used by the NGC, serves as an umbrella term to include parameters, Health professionals have always disseminated new technology and scientific information among themselves; it has always been a part of the professions' responsibility for the quality of care. The degree of scientific strength behind recommendations is another dimension by which a distinction could theoretically be made between parameters and other types of recommendations. guidelines, and standards. For example, the American Academy of Periodontology publishes its parameters and the American Academy of Pediatric Dentistry publishes its guidelines in the NGC. The common denominator is that the parameters, guidelines, and other recommendations submitted to the NCG must be evidence-based and should include an assessment of the level of evidence supporting them. The NGC is maintained by the Agency for Healthcare Research and Quality, but it began as a joint partnership with the American Medical Association and the America's Health Insurance Plans. Such an unexpected confluence of parties (those of a governmental agency, a provider group, and a third-party-paver group) suggests that a diverse group of stakeholders in the health care system has signed on to the idea that the scientific strength of parameters and other types of recommendations is now a key feature upon which all can agree. This is not to say, however, that provider groups have dismissed the importance of professional consensus; provider groups maintain that parameters or any set of recommendations should allow for professional judgment as appropriate.

Use of Parameters

A very serious concern, and one that continues to create controversy, is the intended use of parameters. In an introductory section of the ADA's dental practice parameters, the importance of the intended use of parameters is clear. It is pointed out in the introduction that:

these parameters are distinct from the standards that are developed by payers and regulatory agencies. The standards of payers and regulatory agencies address more narrow concerns such as financial obligations or the contractual agreements of a benefit plan.

This excerpted statement describes concerns about the intended use of parameters and suggests that the term "parameters" connotes a different intended use than does the word "standards."

Parameters developed by professional organizations are intended primarily for practitioners. Not only can practitioners sort through the latest scientific research results efficiently, the use of parameters can support the practitioner in risk management. Anecdotal comments about how practitioners use parameters suggests that practitioners review parameters especially when they are in need of support for treatment that they have provided, such as when a practitioner is involved in a dispute with another practitioner, a payer, or a patient about some aspect of care.

Although parameters are usually not written particularly for patients, patients also seek them out to learn more about their health conditions and diagnostic and treatment options. The fact that parameters allow for professional judgment supports the principle that patient preferences should be considered and so supports patient participation in treatment. This principle is coincidental with the current thinking in the healthcare policy arena that patients should be educated to become savvy consumers of health care, improving the healthcare system's ability to function in the competitive economic market.

However, parameters do not address the many complex questions on the health policy agenda, such as funding and allocation decisions. The ADA, in its preamble to the dental practice parameters states that: The American Dental Association recognizes that other interested parties, such as payers, courts, legislators, and regulators may also opt to use these parameters. The Association encourages users to become familiar with these parameters as the profession's statement of the scope of clinical oral health care. However, these parameters are not designed to address considerations outside of the clinical arena and, therefore, may not be directly applicable to all health policy issues.

The statement suggests that parameters are intended to be separate from the benefits, plan designs, and coverage policies developed by third-party pavers. Insurance plans and other third-party payers have a legitimate business interest in developing the quality of their product-their benefit packages-and parameters can serve as reference for this. But, insurance plans and other third-party payers must also consider risks and allocation issues in designing benefit plans and coverage policies and make decisions that are unrelated to the appropriateness of care. The ADA parameters are not intended to consider these factors of risks and allocation issues. The statements made in parameters are not intended to justify financially based decisions. Parameters describe the full range of appropriate treatment without attaching judgments on the relative financial costs and benefits of each of the options.

Policy questions regarding the distribution and allocation of health care are another area that may require information about clinical care or the quality of care. For example, the payfor-performance programs that are currently emerging in the healthcare system are one example of how the assessment of the quality of care can contribute to answering a larger policy question. Parameters can serve as a reference for developing quality evaluation and measurement tools. However, a policy question may be related to measuring the quality of care in order to support a policy objective that is related to financing or allocation of care. Although a parameters statement might be excerpted from its context and a quality measure developed from it, the parameters cannot necessarily be said to justify the policy objective. The priorities implicit in the policy objective might be unrelated, or even opposite, those implicit in the parameters.

Possible Developments

Aside from serving as a resource for practitioners in clinical decision making, parameters will likely continue to serve as a reference for developing quality assessment tools-such as the criteria that are use in pay-for-performance programs and other reimbursement structures-and to address policy questions. Although a distinction should be made between assessments aimed at evaluating the quality of care and the assessments that are made to make financial or policy decisions, this can be a genuine hurdle, first to make the distinction and then to ask the right questions to address the financial and social issues.

There have been several examples in the recent two or three years that may indicate this hurdle is starting to be approached. The examples involve having the diverse stakeholders in an issue working together to develop quality assessment instruments or in other ways applying parameters. The payfor-performance program, recently implemented as a demonstration by the Centers for Medicare and Medicaid (CMS), is one example where physician organizations, the National Committee for Quality Assurance, and the CMS joined together to develop the measures. The measures were then submitted to the National Quality Forum for comment. There was then further work between the CMS and physician groups to develop consensus agreement on how the data on the measures would be collected and used to assess the quality of care and then implement pay for performance.

Other such joint efforts can be seen in the healthcare system, with accrediting bodies, professional associations, payers, and consumer groups coming together to develop criteria to guide and evaluate financial and social issues. This approach does not guarantee that the final product will be satisfactory or effective, but it may allow all parties to comment on the appropriate use of their documents as the process proceeds. Doing so may spur more deliberate identification where questions on the quality of clinical care are separate from social and financial questions.

Value of the Evidence-Based Consensus Conference

Gary C. Armitage, DDS, MS, FACD

Abstract

The purpose of this paper is to describe how the inherent strengths of an evidencebased (EB) workshop can be combined with the conventional wisdom generated by a group of experts participating in a consensus conference. A traditional consensus conference is an appropriate way to arrive at the best current way to do something if the knowledge base is insufficient to make a scientifically rigorous EB analysis of the clinical problem. The result is the best opinion of experts in the field. The EB approach is the application of a repeatable review process to an existing knowledge base that is relevant to a focused question of clinical importance. It is a powerful tool that can help dentists in clinical decision-making processes. A combination of the EB approach with a consensus conference provides the highest level of evaluation and the strongest level of evidence upon which to make clinical decisions. Application of any of these sources of information can be used in the development of healthcare standards. However, standards are complicated statements that blend current scientific knowledge and clinical judgment with cultural, societal, and economic issues. When healthcare standards are being developed or revised, it is important that all sources of information be considered and the target population and purposes of the standards be identified.

here are several forces that drive the development and application of standards in dentistry. Standards in a healthcare setting should be directed toward the best possible care for patients within the constraints or limits of the current knowledge base. Healthcare standards are complicated statements that blend current scientific knowledge and clinical judgment with cultural, societal, and economic issues.

The purpose of this paper is to describe how the inherent strengths of an evidence-based (EB) workshop can be combined with the conventional wisdom generated by a group of experts or thought leaders participating in a consensus conference. I have had the privilege of participating in a consensus conference on disease classification (American Academy of Periodontology, 1999) and a consensus conference combined with an evidence-based workshop on clinical periodontics (American Academy of Periodontology, 2003). I served as editor of the proceedings for both meetings. It is from this perspective that this paper was written.

Goals of Consensus Conferences & EB Workshops

The overall goals of each type of meeting are very similar. One of the common goals of a consensus conference or an EB workshop is to accurately summarize a body of information and present it to practitioners in a way that will be useful to them in the treatment of patients. Information is sought that will help guide clinicians as they go through the difficult decision-making process in providing healthcare services for their patients.

CONSENSUS CONFERENCE

The genesis of a consensus conference usually begins with a clinical problem that has no clear-cut solution widely accepted by the practicing community. A recognized governmental agency (e.g., the National Institutes of Health) or professional society (e.g., the American Academy of Periodontology, AAP) usually takes on the task of identifying a group of experts in the field and asks them to develop a consensus on what is the best way to solve a specific group of clinical problems. Prior to the conference certain individuals are assigned subtopics related to the overall clinical problem. They are asked to write a comprehensive literature review on their subtopic that will serve as a basis for discussion by the other experts participating in the consensus conference. At the conference all issues associated with the clinical problem are thoroughly discussed against the backdrop of relevant scientific information, clinical experience, and



Dr. Armitage is the R. Earl Robinson Distinguished Professor, Division of Periodontology, Department of Orofacial Sciences, UCSF School of Dentistry, 521 Parnassus Avenue, C-628, San Francisco, CA 94143-0650; armitageg@dentistry.ucsf.edu. clinical judgment. What emerges from a successful consensus conference is a statement such as, "It is the consensus of experts in the field that an 'x' type of problem is best managed by 'y' procedures." The result is simply the best opinion of thought leaders in the field.

An example of such a conference was the AAP 1999 International Workshop for a Classification of Periodontal Diseases and Conditions. Prior to this meeting, twelve participants were asked to prepare comprehensive literature reviews of separate topics related to the classification of periodontal diseases. The papers were peer-reviewed prior to distribution to the over sixty international experts who were invited to the conference. At the conference the problems associated with disease classification were discussed in small working groups and several plenary sessions. The working groups wrote consensus reports dealing with the best classification for the assigned subgroup of periodontal diseases. At open sessions, all participants were asked to comment on and suggest revisions to the consensus reports. After the revisions were made, the entire group was asked to approve of the consensus reports and the revised disease classification. What emerged was a classification that represented the best opinion of the experts who attended that meeting (Armitage, 1999).

A consensus conference is an appropriate way to arrive at the best current way to do something if the knowledge base is insufficient to make a scientifically rigorous and evidence-based analysis of the clinical problem. The problem with clinical decisions based solely on the collective opinion of a group of experts is that they might be wrong. Nevertheless, if there is no scientific evidence to the contrary, one needs to rely on the opinions of experts and one's own experience.

Evidence-Based Workshop

The EB approach is the application of a repeatable review process to an existing knowledge base that is relevant to a focused question of clinical importance. The EB approach is necessary because the sheer volume of information concerning the diagnosis, prevention, and treatment of oral diseases has become overwhelming. Evidence-based dentistry (EBD) is the application of the EB approach to clinical issues related to the practice of dentistry. When properly applied and understood, EBD is a powerful tool that can help the practicing dentist in clinical decision-making processes.

The first step in the EBD approach is to develop a focused question that has clinical relevance. Such questions are often called "PICO" questions since they specify a population (P), an intervention (I), a comparison or control group (C), and an outcome (0). An example of such a question is the one used by Haffajee et al. (2003) at the AAP Workshop on Contemporary Science in Clinical Periodontics: "In patients with periodontitis, what is the effect of systemically administered antibiotics as compared to controls on clinical measures of attachment level?" The next step is to systematically conduct a literature search of all available databases that are relevant to the PICO question. The search process must be clearly described so it can be repeated by others if they so desire. Usually the search process is conducted by two independent reviewers who reach an agreement on what papers need to be included in the final systematic review. Importantly, papers are scored or graded from the strongest to weakest forms of evidence. In most systems, the strongest form of evidence

Standards in a healthcare setting should be directed toward the best possible care for patients within the constraints or limits of the current knowledge base. Healthcare standards are complicated statements that blend current scientific knowledge and clinical judgment with cultural, societal, and economic issues. is a meta-analysis of similarly designed randomized controlled clinical trials (RCTs), whereas the weakest form of evidence is information gained from laboratory studies or expert opinion. The overall result can be a powerful analysis that is useful in helping practitioners identify the best available evidence regarding the benefits of a specific intervention.

Some zealots of the EB approach contend that procedures or interventions not based on well-conducted RCTs should not be performed. The fallacy of such a view has been pointed out in a paper in the British Medical Journal entitled, "Parachute use to prevent death and major trauma related to gravitational challenge: systematic review of randomised controlled trials" (Smith & Pell. 2003). In their search, these authors were unable to identify any RCTs dealing with parachute intervention. They concluded that radical advocates of evidence-based medicine who declare that no interventions should be adopted until supported by RCTs should volunteer as participants in a double-blind RCT dealing with the health benefits of using parachutes when jumping out of airplanes at 33,000 feet.

It has been pointed out that although evidence provided by a properly conducted RCT is quite strong, for some types of clinical questions RCTs have serious limitations. For example, an RCT designed to determine if periodontitis causes coronary heart disease or stroke is not possible since periodontitis cannot be randomly assigned to human subjects (Dietrich & Garcia, 2005).

It is important to point out that although the EB approach is a powerful source of information for clinical decisionmaking, it is not the only source of information upon which clinical decisions are made. It is neither a substitute for clinical experience nor a replacement for clinical judgment. Finally, it does not replace the need to stay current since healthcare professionals should routinely read the literature in an attempt to stay abreast of new developments.

Application of the EB Approach to a Consensus Conference

In 2002 and 2003 there were two notable periodontal consensus conferences that utilized the power of the EB approach. One was held in Switzerland and organized by the European Federation of Periodontology (Lang. et al., 2002). The other was held in the United States and organized by the American Academy of Periodontology (AAP, 2003). Both of these meetings combined the expertise and experience of multiple thought leaders with well-conducted EB systematic reviews. This combination provides the highest level of evaluation and the strongest level of evidence upon which to make clinical decisions. Combining the conventional wisdom of experts with the EB approach is better than other methods of assessment because the method is thorough and comprehensive, objective, scientifically sound, and patient focused. It incorporates clinical experience, stresses good judgment, and uses transparent methodology (Newman, Caton & Gunsolley, 2003).

Holding an EB consensus conference is not a trivial undertaking. It is an immense task to organize, find funding for, recruit reviewers and participants, hold the conference, and publish the proceedings. For the 2003 AAP EB consensus conference an organizing committee spent over two years planning the event since they needed to select topics for systematic review, identify reviewers and participants, develop the workshop format, and find sources of funding. An important step prior to the conference was the training of content experts in the EB process during which PICO questions were written and approved by the group. A critically important component of the entire process was enlisting the aid of a statistician with expertise in the EB process. Well in advance of the meeting designated participants conducted systematic reviews of assigned topics. These papers were peer-reviewed by journal referees and were then sent to all participants in advance of the meeting. For the 2003 AAP conference fifteen systematic reviews were written. At the conference consensus statements were written using the relevant EB systematic reviews as guides. The final step was editing and publishing the proceedings. The entire process took over three years to complete.

Some of the valuable things that can come out of EB consensus conferences are the identification of clinical interventions that have strong evidence compared to those that have hardly been studied. Both findings are important. This is only possible at a conference that follows the EB process, since the strength of the evidence is formally assessed or graded. This is not the situation at a conventional consensus conference, where expert opinions and traditional literature reviews govern the proceedings. Traditional literature reviews are usually a credible source of information. but they have the inherent weakness of an unconscious article selection bias by the authors.

Even though EB consensus conferences provide the strongest available evidence to assist the clinician in decision-making processes, information generated by such conferences rarely provides an unequivocal rationale for making patient-care decisions. For example, one of the systematic reviews at the 2003 AAP EB consensus conference found that based on the data from over

When it comes to standards, one size does not fit all.

twenty RCTs, administration of systemic antibiotics resulted in statistically significant gains in clinical attachment for patients with periodontitis (Haffajee, Socransky, & Gunsolley, 2003). Compared to controls, the adjunctive use of antibiotics resulted in an average mean gain in clinical attachment in aggressive periodontitis of 0.72 mm, and for chronic periodontitis patients the average gain was 0.24 mm (P < 0.0001). These findings do not, however, establish a standard of practice that dictates the use of antibiotics in all patients with periodontitis. Part of the problem is that use of an antibiotic carries with it some risk of developing untoward effects such as an allergic reaction and emergence of resistant strains. In addition the systematic review with its meta-analysis did not establish, "...which agent(s) should be used for which infection, what is the optimum dosage and duration of these agents, which subjects would most benefit from systemic antibiotics, when should subjects receive antibiotics in relation to mechanical debridement ... " and how long should the medications be administered to get the maximum effect (Haffajee, Socransky, & Gunsolley, 2003).

Development of Healthcare Standards

It should be clear from the above discussion that development of healthcare standards cannot be simply derived from a single source of information or evidence. This is true even in situations where the information source is very strong, such as an EB consensus conference. Healthcare standards might be viewed within the context of a simple question, "What type of intervention will result in a clinically meaningful outcome?" However, a clinically important outcome often depends on the opinion or perspective of those deciding what is, and is not, important.

For example, in a study of thrombolytic strategies after acute myocardial infarction (MI) in forty-one thousand patients, conventional treatment (i.e., streptokinase + intravenous heparin) was compared with a more expensive regimen (i.e., "accelerated" administration of tissue plasminogen activator [t-PA] + intravenous heparin). This RCT demonstrated that the t-PA regimen provided a 0.9% higher chance of recovery than the streptokinase treatment (The GUSTO Investigators, 1993). On a population basis, the cost of using the more expensive t-PA on all patients who need thrombolytic therapy after an MI would be \$188,000 for each additional survivor (Chelluri, Sirio, & Angus, 1994). At the patient level, there is little doubt that an individual would prefer to have the t-PA treatment if it increased their chances of survival, even by only 0.9%. However, at a societal level the issue becomes more complex. Who is going to bear the additional cost of the more expensive t-PA treatment? If the overall health of the entire population is the principal concern, is it better to save more lives by making less costly treatments more widely available (Hujoel, Armitage, & Garcia, 2000)?

The message is clear: when healthcare standards are being developed or revised, it is important that all available sources of information and evidence be taken into account. In addition, the target population and purposes of the standards need to be clearly articulated. When it comes to standards, one size does not fit all.

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What Is a Clinical Pathway?

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Abstract

Clinical pathways are patient care algorithms based on best evidence. They are intended to minimize variance in treatment and thus reduce cost, increase efficiency, and ultimately improve patient care outcomes. Clinical paths are more commonly used in the United Kingdom, and there is evidence that they are effective in the medical context. Some limitations that dentists may want to keep in mind regarding critical paths are that they may not be appropriate for all patient especially those with complex conditions); they present the potential for being misunderstood or misapplied; and practitioners often find them time-consuming, restrictive, and intrusive.

s clinicians, we are always (consciously or not) making decisions about the best possible care for each of our patients. It would be nice if we had a "cookbook" with step-by-step "recipes" for each possible clinical situation. In a manner of speaking, we do. Standards of care, parameters of care, clinical practice guidelines, clinical care pathways, and integrated care pathways-the literature abounds with recipes, but differentiation among them is not entirely clear. This paper will outline some of those differences, focusing on the role of clinical pathways (CPs).

Standards of care are generally mandated by government legislation or licensing bodies, as interpreted through the legal system. They tend to be rigid prescriptions for care or observance of previous precedence and are usually minimally accepted standards. Parameters of care, as used by the American Academy of Periodontology, have been based on both narrative (the traditional literature review) and systematic reviews of the literature, and may or may not involve consensus of clinical or content experts. Clinical practice guidelines are based on the best available evidence (generally a systematic review) and use rigorous and explicit methods to search for and critically apprise the entire body of clinical research evidence related to the question. This evidence is then integrated with clinical expertise from practitioners and patients to develop workable clinical recommendations. Each guideline is

intended for use in specific conditions or circumstances. The individual clinician is expected to take into account each patient's history and preferences, together with his or her clinical experience and judgment, when applying a guideline. Unfortunately, research on the organizational, behavioral, and cost implications of applying a particular guideline is rare. As a result, the uptake of guidelines has been less than ideal (Grol & Grimshaw, 1999; Stephens, 1998).

Clinical pathways (CPs) or critical paths, or treatment protocols, have been likened to manufacturing guides used in industry. There may be many ways of assembling a Volvo station wagon, for instance, but each one is put together the same way on the assembly line because it is the most efficient and cheapest way to do so. CPs are multidisciplinary healthcare algorithms, intended to reduce variability and cost, increase efficiency, and ultimately improve patient care. Clinical pathways also provide a means of ongoing audit into clinical practice. As with standards of care and clinical practice guidelines, their aim is to improve patient care, as well as continuity and coordination of care across different disciplines and sectors. Regardless of whether or not these efforts are effective in achieving such goals, many institutions and managed-care programs have developed such pathways.



Dr. Matthews is Chair of Periodontics at Dalhousie University School of Dentistry in Nova Scotia. She may be reached at debora.matthers@ dal.ca CPs should have four main components (Hill, 1995; 1998): 1) a timeline; 2) the categories of care or activities and their interventions; 3) outcome criteria; and 4) a record of variances between the care that is planned and the actual care provided. The latter allows for audit and analysis at an organizational level. The treatment algorithms included in pathways are built on "best practices" and the best available evidence (ranging from a systematic review to expert opinion) and offer clinicians reproducible methodology for managing difficult problems.

Limitations of Care Pathways

Woolf et al. (1999) present an in-depth look at the limitations of care pathways and practice guidelines. If not carefully and thoughtfully developed they can harm the very groups they are intended to benefit-namely, patients, clinicians and organizations. The most important limitation of CPs (and clinical practice guidelines) from a patient perspective is that the recommendations may be wrong, or at least wrong for individual patients. Because of their structured format, CPs make it easy to apply the cookbook approach to patient care. It is much easier to rely on an algorithm than it is to think about each patient and their unique situation. And, more often than not, good quality evidence on which CPs are based is lacking, misleading, or misinterpreted. Even when the data are certain, recommendations for or against

interventions involve subjective value judgments, made by members of the guideline group, when the benefits are weighed against the risks.

Because of their nature, CPs do not respond well to unexpected changes in a patient's condition. CPs are better suited to standard conditions than rare or unpredictable ones. There inflexibility does not always allow clinicians to tailor health care to each patients' personal circumstances and medical history. Blanket recommendations, such as are found in CPs, ignore patients' preferences (Woolf, 1997). Thus, the frequently touted benefit of pathways-more consistent practice patterns and reduced variation -may come at the expense of reducing individualized care. Lay versions of guidelines, if improperly constructed and worded, may mislead or confuse patients and disrupt the doctor-patient relationship. In short, practices that are suboptimal from the patient's perspective may be recommended to help control costs, serve societal needs, or protect special interests (those of dentists, dental hygienists, program administrators, or policymakers).

Even when CPs are appropriate, clinicians often find them inconvenient and time consuming to use. Outdated recommendations may perpetuate outmoded practices and technologies. As an audit is a major component of CPs, clinicians may feel the quality of their care is being unfairly judged. CPs are designed to be explicit; they may include injudicious words ("should" vs. "may"), arbitrary numbers (such as months of Algorithms that reduce patient care into a sequence of yes/no decisions do not take into account the complexity of clinical decisions.

treatment, intervals between recall examinations), and simplistic algorithms when supporting evidence is lacking. Algorithms that reduce patient care into a sequence of yes/no decisions do not take into account the complexity of clinical decisions. Words, numbers, and simplistic algorithms can be used by those who judge clinicians to repudiate unfairly those who, for legitimate reasons, follow different practice policies. This may prompt providers to withdraw availability or coverage. A theoretical concern is that clinicians may be sued for not adhering to guidelines. Fortunately, this has not yet become an important reality. However, the use of flawed or inappropriate care pathways by dental professionals, third-party payers, or organizations can do more harm than good, entrenching the delivery of ineffective, harmful, or wasteful interventions.

Clinical Pathways in Dentistry

CPs are most useful in large organizational settings, where a multidisciplinary team is responsible for various aspects of the care of a patient. In the management of a patient with a fractured hip, for example, lab technicians, radiologists, nurses, orthopedic surgeons, and physiotherapists may be involved. This is rarely the case with dentistry, where the majority of general dentists are, in effect, small business owners, and are present throughout, or directly oversee, the management of each patient.

Unlike North America, dentistry in the United Kingdom is often practiced within a hospital. As well, rather than an entrepreneurial system, reimbursement for services is provided through the National Health Service (NHS). Not surprisingly, all care pathways appear to come from the NHS either directly or through individual hospitals. A protocol exists for the management of head and neck malignancies in which the dental team is one of many (University of York Centre for Reviews and Dissemination, 2004). Many hospitals have developed care pathways for minor (and major) oral surgery. These usually include checklists of everything from health history to clinical assessment to swab and instrument counts and length of stay. They are rarely in the form of algorithms for the management of a patient with a particular disease or condition.

In 2004, under the auspices of the NHS, the Dental Health Services Research Unit at the University of Dundee published a CP to determine intervals between oral health recalls (National Collaborating Centre for Acute Care, 2004). This is a comprehensive, well-designed CP. It is based on the best available evidence and the process of development is clearly documented. The recommendations take into account the impact of dental checks on patients' well-being, general health and preventive habits, caries incidence, periodontal health, and avoidance of pain and anxiety. In addition to providing an algorithm for care (Figure 1), the CP document contains a quick reference guide with clear step-by-step clinical guidelines, procedures for implementation, a checklist for risk assessment, and a patient guide.

Do CPs Result in Better Patient Care?

In spite of the sound principles underlying CPs, few evaluations have been done examining the cost of developing and implementing them and their effectiveness in changing practice and improving

Figure 1. National Health Service England Algorithm for Oral Health Assessment and Recall.


patient outcomes. An article on Bandolier, an evidence-based medicine site, examined fifteen randomized controlled clinical trials that measured the impact of care pathways on patient outcomes. All but one led to improvements in disease management. These improvements included shorter hospital stays, fewer complications, and lower mortality. Three of the papers did not include costs or resource allocation as an outcome measure. One study found no difference in the quality of care, thus an increased cost of implementing the CP; another found no difference in the cost, but an improvement in patient outcomes. The remaining ten showed that costs were reduced, while improving quality of care. In fact, three of the studies reexamined outcomes up to two years later, finding even more cost savings over time.

A clinical guideline or care pathway may be shown to be effective, but that is only true insomuch as they are actually used. A major hurdle in the use of care pathways is changing clinicians' behavior (Eccles et al. 2005; Grimshaw et al. 2001: Grol. 1997). Several qualitative reviews have described the effects of interventions such as educational programs, feedback to healthcare providers, provider reminders and financial incentives. Oxman et al. (1995) reviewed one hundred two trials and concluded that a wide range of interventions may improve practice but that there are no "magic bullets." Davis et al. (1997) showed that educational interventions improved physician performance and possibly patient outcomes. Mugford (1991) found provider feedback effective when part of an overall implementation strategy. In a systematic review by Weingarten et al. (2002), one hundred two studies evaluating one hundred eighteen discrete care pathways for patients with chronic illnesses were examined. The majority of disease management programs used two or more

Overview of how the interval between oral health reviews is set Children/young people Adults If the patient is If the patient is younger than 18 years 18 years or older Step 1 Consider the patient's age; this sets 3 -► 12 3 -> 24 months months months months the range of recall intervals. Step 2 Consider modifying factors in light of the patient's medical, social, and 3 -- 12 24 3 dental histories and findings of the months months months months clinical examination. Step 3 Integrate all diagnostic and prognostic information, considering advice from 3 -3 -12 - 24 other members of the dental team months months months months where appropriate. Use clinical judgement to recommend the interval before the next oral health review. Step 4 Discuss recommended interval with Discussion the patient. Record agreed interval or any reason for disagreement. Step 5 At next oral health review, consider whether the interval was appropriate. Adjust the interval depending on the

Reassessment

Reassessment

interventions, possibly because multiple interventions are thought to be more likely to be successful than single interventions. Overall, 30-40% of the programs made small but significant improvement in patient outcomes.

patient's ability to maintain oral

health between reviews.

Because of the promise that disease management holds for improving patient care, about \$1 billion is invested in clinical care pathways in the United States each year. The National Committee on Quality Assurance (NCQA) in the United States requires health plans to submit data on two disease management programs each year for consideration of accreditation. However, this investment in CPs should be guided by information Because of their structured format, CPs make it easy to apply the cookbook approach to patient care. It is much easier to rely on an algorithm than it is to think about each patient and their unique situation. on how to optimize the benefits of these programs for the patient and the system. In medicine CP developers have had limited qualitative or quantitative information about which interventions achieve the greatest benefits; in dentistry, no such studies have been done.

Evidence-based health care, quality assurance, clinical guidelines, care pathways—whatever we call it—we must remember that as health care professionals our goal is to treat the right patient right in the right way and at the right time.

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Evidence-Based Dentistry: Concepts and Implementation

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Abstract

Evidence-based dentistry is the use by dentists of best research evidence, clinical judgment and patient values to guide practice. This article focuses on methods dentists can use to collect the best relevant evidence. Using the examples of systemic fluoridation and fluoridated dentifrices, the authors illustrate a fivestep process of: 1) asking answerable questions; 2) conducting a systematic search; 3) critically appraising the literature; 4) applying results to practice; and 5) evaluating outcomes.

vidence-based health care, and - evidence-based dentistry (EBD) as a subset, is the "...integration of the best research evidence, with clinical judgment, and patient values" to improve health care (Sackett et al. 2000). Essentially, EBD is a set of methods for rapidly aggregating, distilling, and implementing the best clinical information in clinical practice. While most clinicians will not engage in developing evidence, they can relatively easily become effective evidence users. This manuscript introduces the concepts of EBD and provides a mechanism for their implementation in practice.

Water fluoridation is a good example of the conundrum that surrounds evidence-based health care and EBD. The current best evidence is the systematic review published by the Centre for Reviews and Dissemination, York University in 2000 (www.york.ac.uk/ inst/crd/fluorid.htm). After a two-year, open -access process evaluating the world's literature, the editorial group concluded that water fluoridation was effective in preventing dental caries. Further, it had only one demonstrated downside, fluorosis in a small percentage of people. Clinical judgment is represented by the more than one hundred international healthcare organizations that support water fluoridation. Former U.S. President Kennedy best articulates values when he said: "...our most basic common link...is that...we all cherish

our children's future. And we are all mortal." Supporters of water fluoridation do so to protect their children's future.

Conversely, opponents of water fluoridation, based on their value system, argue that water fluoridation is a violation of freedom of choice, that it is mass medication, that it is toxic, and most potently that the data are biased. The claim of data bias is based on the observation that most of the studies resulting in high quality data were funded by government agencies that support water fluoridation.

The EBD Method

The EBD approach has five steps:

- 1. Ask answerable questions
- 2. Systematically search for the best evidence
- 3. Critically appraise the evidence
- 4. Apply the evidence in practice
- 5. Evaluate the outcome





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Table 1. Levels of Evidence Demonstrating Causality in Humans

Evidence Level

	Systematic review & Randomized controlled trials	Review of random Experimental + co
	Cohort trial	Experimental + co
	Case-Control trial	Experimental + co
	Case series	Experimental only
	Narrative review, Editorial	
/ •	0	

N/A Case report, Epidemiology, Animal studies, In vitro studies

Adapted from: Centre for Evidence-Based Medicine www.cebm.net/levels_of_evidence.asp

Table 2. Comparison of Clinical Trials and Systematic Reviews

Clinical Trial	Systematic Review
Stated hypothesis	Stated hypothesis
Protocol specifying:	Protocol specifying:
Patient recruitment	Search strategy
Patient inclusion/exclusion	Study inclusion/exclusion
Intervention comparison	Intervention comparison
Data analysis	Data analysis

Adapted from: Needleman (2002)

Table 3. Comparison of Systematic and Traditional Narrative Reviews

Systematic Review	Narrative Review
Methods stated	Method not stated
Focused question	Broad issue
All studies located	Biased study selection
Critical appraisal	No critical appraisal
Data-based conclusion	Opinion-based conclusions
Continuous results	Dichotomous results

Adapted from: Needleman (2002)

Study Type

Review of randomized controlled trials Experimental + control, randomization
Experimental + control, no randomization
Experimental + control, retrospective
Experimental only, prospective

A clinical scenario might best exemplify the method, and Internet references to each of the steps are available (Niederman et al. 2004).

Scenario: A new ten-year-old patient, who lives in a fluoridated community, comes to see you with his mother. He has interproximal carious lesions on both mandibular first molars. The mother, who has been using non-fluoridated toothpaste asks: "Should we use fluoridated toothpaste?"

Ask Answerable Questions:

Using an EBD approach, the mother's question would be reframed in a question with four parts: Problem (P), Intervention (I), Comparison (C), Outcome (O). An example of this "PICO" question format follows:

Problem: "In children from fluoridated communities with caries..."

Intervention: "...would using a fluoridated toothpaste..."

Comparison: "...when compared to non-fluoridated toothpaste..."

Outcome: "...reduce the incidence of caries?"

SEARCH for the Best Evidence:

Finding the answer to a key question and keeping up with the current literature can be a profound task. A recent study found that for each of the dental specialties (Niederman et al. 2002): 1) more than five hundred clinical trials were published per year; 2) clinical trial publication is increasing by 10% per year; and 3) trials are published in more that thirty different journals. Thus, to stay current, one would need to identify, obtain, read, appraise, implement, and evaluate more than one article per day, seven days a week, three hundred and sixty-five days per year. This is an impossible task, if one also expects to have an active practice.

One can use EBD search methods, however, to reduce this time. The method described below takes about five minutes to identify from some fifty-five thousand articles, the twenty evidence-based systematic reviews.

Returning to the fluoride toothpaste scenario, one can search the National Library of Medicine's free access database, www.PubMed.gov, for "toothpaste" and "caries" and "fluorides." Individually, each topic identifies approximately five thousand, twenty-six thousand, and twenty-five thousand articles, respectively. Using PubMed's utilities, the searches, when they are grouped together, identify approximately one thousand articles that simultaneously include all three topics. Applying more of PubMed's utilities the number of articles is reduced to one hundred and thirty narrative reviews, of which twenty are evidencebased systematic reviews.

Examining the twenty identified systematic reviews; the second review on the list distills seventy studies that include forty-two thousand children (Marinho et al. 2004). The results indicate that fluoride toothpaste reduces caries by 25% in children when children have one carious lesion per year, and is twice as effective in children with a greater incidence of caries. Furthermore, the benefit was not influenced by water fluoridation.

CRITICALLY APPRAISE THE EVIDENCE: Clinical evidence comes in multiple, and often conflicting forms, or evidence levels (Table 1). From an EBD perspective the central element is the ability to demonstrate cause-effect relationships in humans in as unbiased a way as possible. To accomplish this, the search results are first stratified by evidence level, and then evaluated from three perspectives: is the study valid; are the results clinically important; and can they be applied to my patient? (Centre for Evidence-Based Medicine, www.cebm.net/ critical_appraisal.asp). Interestingly, this is the same evidence pyramid independently identified by the U.S. Supreme Court in *Daubert v. Merrill-Dow* (1993).

The best example of this rules-based approach to critical appraisal is the contrast between a systematic review and a narrative review (evidence level 1 and level 5, respectively). A narrative review is a traditional literature review where a content expert articulates his or her version of the historical evidence. based on his or her reading of the literature. In marked contrast, a systematic review is based on rules, much like a clinical trial, using the five-step method articulated in this manuscript (Table 2). In using this rules-based approach, a systematic review is less biased than a traditional narrative review (Table 3).

Apply the Evidence in Practice:

Evidence application is a two-step "process". The first step is a determination of values, and the second step is actual implementation. In the U.S. health system there are at least four competing value systems for a patient, with dental insurance, sitting in a dental chair (Table 4). These value systems or value equations for clinical care highlight contrasting economic perspectives of four stakeholder groups. The value equations all incorporate the same four elements: clinical effectiveness, need, time, and fees. Further, the clinical effectiveness is identical for all stakeholder groups. This highlights the consistency of "clinical evidence" use among the stakeholder groups.

However, the groups whose needs are addressed change, and the fee and time are variable. For example, at the extremes, from a patient's perspective, EBD is a set of methods for rapidly aggregating, distilling, and implementing the best clinical information in clinical practice.

Table 4. Competing Value Systems

Stakeholder	Value	Numerator		Denominator
Patient	V =	Clinical Effectiveness x Needs (Patient)	/	Fee <i>(Dentist)</i> x Time
Employer	V =	Clinical Effectiveness x Needs (Employees)	/	Fee (Insurer) x Time
Dentist	V =	Clinical Effectiveness x Needs (Patient) x Fee (Dentist)	/	Time
Insurer	V =	Clinical Effectiveness x Needs (Employer + Dentist) x Time	/	Fee <i>(Clinician)</i>

The value systems for each of the stakeholder groups all incorporate four elements: treatment effectiveness, needs, fees, and time. However, the stakeholder whose needs are addressed varies. As well, the fee and time move between the numerator and denominator, depending on the stakeholder. Finally, depending on the stakeholder, the value may be determined on an individual (e.g., for the patient and dentist) or a population (e.g., for an employer and insurer) basis.

> dental care is most valuable when it is effective, meets their needs, takes very little time, and fees are modest. Conversely, from a dentist's perspective dental care is most valuable when it is effective, meets the patient's needs, takes very little time, and fees are high. The clinician's challenge, then, is to integrate these sometimes-conflicting value systems. In short, integrating clinical evidence with clinical judgment and the patient's values.

The second step is actual implementation. Knowing what works in clinical trials and knowing how to implement this information in clinical practice: "know what" and "know how," respectively (Niederman & Leitch, in press). Connecting them requires knowledge creation, and effective knowledge creation in practice is experimentally based (Table 5) (adapted from Langley et al. 1996).

Developing clinical know how typically takes multiple iterations with before-after comparisons. The number of comparisons, time frame for comparisons, and the number of iterations will depend on the complexity of the new intervention. As a trivial example, consider the first successful amalgam placed on an ivorine tooth in dental school. The comparisons to ideal, time frame, and number of iterations depended on individual talent. Similarly, translating this "know what" to clinical "know how" in a patient took additional work.

Evaluate the Outcome:

Methods for evaluating outcomes depend on the complexity of the intervention. At the extremes one can consider a new prophylaxis paste and a new implant system. The first might require sixty minutes to evaluate with several patients. The latter might require multiple intensive training sessions, followed by treatment of multiple patients over multiple years.

At baseline, however, the four evaluative elements are similar: is there experimental evidence of efficacy; is there a clinical advantage for the new product or procedure; is it simple to use; and most importantly, can it be evaluated in practice? Practice evaluation requires a systematic determination of a pre-implementation measure on multiple patients, followed by a systematic determination of the same measure post-implementation.

The marketing of a new prophylaxis paste provides a simple example. A new paste is marketed to obviate the adverse attributes of current pastes: splattering, sandy texture, and patient's dislike. On a 3x5 card one could evaluate the current paste in the three categories on a scale of 1 to 5 for one-half dozen patients in the morning. Then in the afternoon, on another 3x5 card, one could similarly evaluate the new paste. At the end of the day, one could total the categories on both cards and systematically identify the better paste for use in clinical practice.

Resources

Of the five-step approach to EBD, the first three are core skills that are now taught in some dental schools and postgraduate courses. There are also multiple resources that clinicians can rapidly access for high quality validated evidence-based information. These range from clinical guidelines, to systematic reviews, to search engines, to journals, to courses. Table 6 provides a sampling of several resources available. In particular, the Centre for Evidence-Based Dentistry, Oxford, has a comprehensive list of resources.

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Table 5. Clinical Knowledge Creation

Clinical Knowledge	Clinical Trial	Clinical Practice
Goal	Know what	Know-how
Hypothesis	Fixed	Flexible
Sample	Large	Small, iterative
Trial type	Controlled	Case series
Measure	Blind	Observable
Bias	Eliminate	Accept

Clinical knowledge creation takes two forms, clinical trials and clinical practice. Because of the knowledge goals of each, the method for obtaining the highest level of evidence varies slightly for hypothesis framing, sample size, trial type, blinding, and bias.

Adapted from: Niederman and Leitch, in press.

TAble 6. Selected Clinical Resources

Resource	Publisher, URL
Clinical Guidelines	Agency for Healthcare Research and Quality, U.S. Department of Health and Human Services <i>www.guidelines.gov</i>
	Scottish Intercollegiate Guideline Network www.sign.ac.uk/
Systematic Reviews	The Cochrane Collaboration www.cochrane.org
	Center for Reviews and Dissemination, University of York, UK http://144.32.150.197/scripts/WEBC.EXE/NHSCRD/start
Search Engines	National Library of Medicine, U.S. National Institutes of Health <i>www.pubmed.gov</i>
	The Forsyth Institute www.evidents.org
Web site	Centre for Evidence-Based Dentistry, Oxford University www.cebd.org
EBD Journal	Nature Publishing www.nature.com/ebd/index.html
Training	Oxford University www.conted.ox.ac.uk/cpd/healthsciences/courses/ short_courses/Dentistry/

ARE STANDARDS AND EVIDENCE SUFFICIENT?

Kathleen T. O'Loughlin, DMD, MPH, FACD Robert Compton, DDS

Abstract

The origins of standards and guidelines in medicine are traced from work in the 1970s showing that treatment variations could not be accounted for by objective differences in the disease or other conditions of patients. Guidelines based on evidence can be effective in reducing such variation and in reducing costs. However, population disparities in disease and access, as well as dramatically rising insurance costs, pose challenges. Standards based entirely on efficacy of procedures will leave unanswered important questions about diagnosis and effective allocation of resources throughout population groups.

tandards of care for dentistry have been discussed for decades as a way to improve quality of care in the oral healthcare delivery system. The American Dental Association, in the Preamble to Dental Practice Parameters. distinguishes among "standards of care," "parameters of care," and "guidelines." Specifically, they state that standards of dental care "are rigid and inflexible and represent what must be done"; parameters are intended as "an aid to clinical decision making and thus they describe clinical considerations in the diagnosis and treatment of oral health conditions"; and guidelines are "less rigid, but represent what should be done." Although all three have important places in the profession and for the public, attention is increasing focused on guidelines.

Standards of care seem to apply more in the legal realm. J. P. Graskemper (2004), a dentist and an attorney, provides an excellent review of standards of care in dentistry. He notes that the standard of care actually is found in the definition of negligence, which is said to have four elements, all of which must be met to allow negligence to be found in a malpractice lawsuit. Those four elements are as follows:

- 1. That a duty of care was owed by the dentist to the patient;
- 2. That the dentist violated the applicable standard of care;
- 3. That the plaintiff suffered a compensable injury; and
- 4. That such injury was caused in fact and proximately caused by the substandard conduct.

Graskemper further states that the best definition can be found in B*lair v. Eblen*: "[A dentist is] under a duty to use that degree of care and skill which is expected of a reasonably competent [dentist] acting in the same or similar circumstances." While standards of care are certainly important to any dentist facing a malpractice lawsuit, from the perspective of improving the quality of care, parameters of care and clinical guidelines are more important.

Improving Quality of Care

One of the driving forces leading to the development of clinical guidelines was the work of the physician John E. Wennberg. In 1969, he became the regional medical director in Vermont and began collecting utilization data. Initially he collected it in Vermont but expanded his data base by adding utilization data from Maine and Iowa. As researchers were analyzing the data it became apparent that similar diseases/ conditions were treated significantly different depending on the area of the country that the patient resided (Wennberg & Gittelsohn, 1973). For example, it was found that in some



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Dr. Compton is Chief Dental Officer at Delta Dental Plan of Massachusetts. communities 70% of women had hysterectomies by age seventy compared to only 20% of similar women in other communities. Similarly, 70% of children had tonsillectomies in some communities compared to only 8% in others. It appears that the strongest determinant of the type of treatment a patient received was where they lived and where the physicians received their training. So Wennberg's team went to the medical libraries to see which treatment modalities were supported by the scientific evidence. What they found was there were no studies (Millenson, 1997). Similarly, students have shown that a great deal of variability exists in dental treatment as well.

In the 1970s the focus shifted to improving the quality of care. Donabedian (1980), in The Definition of Quality and Approaches to Its Assessment, told us that we needed look at structure, process and outcome. Outcome, the end result of the care we provide-did the patient get better?-is what ultimately interests us. But few, if any, outcome studies were being performed. So instead we look at structure and process. Structure is all the "things" we need in order to provide care. We need physical space, medical equipment, trained qualified personnel, medical records, sterilization procedures and other such things. Process, is the work or care that healthcare providers perform or provide.

In the 1980s, organizations such as the National Committee for Quality Improvement and the Joint Committee on Healthcare Quality began measuring structure as part of its credentialing process. They also began to look at process with such measures as those found in HEDIS standards.

Clinical Guidelines

According to the Library of Medicine, clinical guidelines "assist the healthcare practitioner with patient care decisions about appropriate diagnostic, therapeutic, or other clinical procedures for specific clinical circumstances." The first clinical guideline is often attributed to the American Cancer Society, which in 1980 developed its guideline for the cancerrelated health checkup (Eddy, 1980). Their advice is still timely today:

First, there must be good evidence that each test or procedure recommended is medically effective in reducing morbidity or mortality; second, the medical benefits must outweigh the risks; third, the cost of each test or procedure must be reasonable compared to its expected benefits; and finally, the recommended actions must be practical and feasible.

By 1985 the American College of Physicians began publishing guidelines. The National Guideline Clearinghouse was created in 1997 by the Agency for Healthcare Research and Quality in partnership with the American Medical Association and the American Association of Health Plans (now America's Health Insurance Plans [AHIP]). There are over one thousand clinical guidelines, including many for dentistry, at their website (www.guideline.gov). The clearinghouse has processes in place As the government and employers struggle to absorb continued increases, pressure is mounting to control costs while increasing quality of care.

to ensure that guidelines are submitted by credible organizations and go through a rigorous process to verify that they represent the best available scientific evidence. Systemic reviews, efficacy trials, effectiveness trials, metaanalysis, consensus of expert opinion, and other processes contribute to their development. They are disease/condition specific and aim to ensure that there is consistency in the quality of clinical care –again, to reduce the variability of care between similar populations with similar diseases and conditions.

The focus on quality continued into the 1990s when the Institute of Medicine (2001) published *Crossing the Quality Chasm*, which said that we should have six aims in improving the quality of the healthcare system. That report established six quality improvement goals for the healthcare system. They are:

• Safe: avoiding injuries to patients from the care that is intended to help them.

- Effective: providing services based on scientific knowledge to all who could benefit, and refraining from providing services to those not likely to benefit.
- Patient-centered: providing care that is respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions.
- Timely: reducing waits and sometimes harmful delays for both those who receive and those who give care.
- Efficient: avoiding waste, including waste of equipment, supplies, ideas, and energy.
- Equitable: providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographical location, and socioeconomic status.

It said we should aim to make care safe, effective, efficient, equitable, patient-centered, and timely.

They defined effective care as "providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit from it." We often refer to this as evidence-based care. D. A. Ebby (2005) offers perhaps the best definition of evidence-based care as "a set of principles and methods intended to ensure that to the greatest extent possible, medical decisions, guidelines, and other types of policies (including benefit coverage, disease management, performance measures, quality improvement, medical necessity, regulations and public policy) are based on and consistent with good evidence of effectiveness and benefit." The IOM (2001) also noted that "care should not vary illogically

from clinician to clinician or from place to place."

With this background it is easy to see how the Agency for Healthcare Research and Quality, the American Medical Association, and the American Association of Health Plans came together to begin developing clinical guidelines. According to the Library of Medicine clinical guidelines "assist the health care practitioner with patient care decisions about appropriate, diagnostic, therapeutic, or other clinical procedures for specific clinical circumstances." A process is in place to assure that guidelines are submitted by credible organizations and go through a rigorous process to verify that they represent the best available scientific evidence. Systematic reviews, efficacy trials, effectiveness trials, meta-analysis, consensus of expert opinions and other processes go into their development. They are disease and condition specific and aim to ensure that there is consistency in the quality of clinical careagain to reduce the variability of care.

To ensure consistency, clinical guidelines begin with a diagnosis to identify a specific clinical condition. The clinical guideline then assists the healthcare provider by identifying which treatment options have the strongest scientific evidence to support them leading to evidence-based care. That's the starting point of treatment planning-identifying what the scientific evidence says is the most effective care. To that a dentist may add patient preferences, his or her experience, and other factors, such as insurance coverage, to develop the treatment plan. However, the ultimate treatment plan can be modified to the point where it is not supported by the best available scientific evidence. According to Ebby's definition, this may be appropriate for that patient but it is not evidence-based care. The challenge for payers of health benefits is to determine at what point the actual treatment has insufficient scientific evidence to

support covering it as a benefit, especially if the evidence strongly supports an alternative treatment.

The Disparities Challenge

The 2000 Report of the Surgeon General on Oral Health in America concluded that in spite of significant improvements in the oral health of Americans over the last fifty years, serious disparities exist. The oral health of low-income and disadvantaged populations has actually worsened due to a lack of access to basic oral health care. Major findings of the Surgeon General's report include the facts that oral disease affect health and well-being throughout life, that safe and effective measures exist to prevent the most common oral diseases, that life style behaviors affect oral health, that there are profound oral health disparities within the U.S. population, that more information is needed to improve oral health, and that the mouth reflect the general health. Scientific research is key to further reduction in the burden of diseases. The Surgeon General's report concluded that a "framework for action" must include five basic components if we are to improve oral health for all citizens:

- Change perceptions regarding oral health and disease so that oral health becomes an accepted component of general health.
- Accelerate the building of the science and evidence base and apply science effectively to improve oral health.
- Build an effective health infrastructure that meets the oral health needs of all Americans and integrates oral health effectively into overall health.
- Remove known barriers between people and oral health services.
- Use public-private partnerships to improve the oral health of those who

still suffer disproportionately from oral diseases.

This "call to action" provides a broad template for improving population oral health; however it does not address the growing threat to dental care access that is a direct result of limited financial resources and unsustainable escalation of medical costs. These goals are consistent with improving quality in the oral healthcare delivery system, especially in the areas of effectiveness and efficiency.

ECONOMIC CHALLENGES

The National Health Statistics Group has projected that national health spending will grow at an average rate of 7.2% over the coming decade. This compares to the projected average rate of growth in Gross Domestic Product (GDP) of only 1.5% over the same period. The result will be that healthcare costs will double in ten years, going from \$2 trillion in 2005 to \$4 trillion in 2015. This also means that healthcare costs will grown from 16% of GDP in 2004 to 20% of our nation's Gross Domestic Product by 2015.

However, this rate of growth is actually a decline from 9.8% growth in healthy costs in 2002. The main reason for this decline was not moderation in medical inflation. The main reason was a sharp deceleration in use of services. Utilization management is being reintroduced, rising copayments and deductibles are impacting consumer demand, and more people are becoming uninsured as employers are cutting benefits and employees. According to the Urban Institute's Study released in November 2005, an analysis of the "March Current Population Surveys, 2001 and 2005" reveals that the number of Americans without health insurance is now around forty-six million and the uninsured have increased by 2.7% from the year 2000 to 17% in 2004. But hidden in the data is the fact that there is also

a shift occurring within the insured populations. That rise was mainly from 5.2% more children being covered by Medicaid. The adults were not as fortunate; the 2.7% growth in the uninsured population was totally for adults.

The cost of dental services is projected to grow from \$87.4 billion in 2005 to \$167 billion by 2015. They are expected to grow at a 7.9% rate in 2006, but fall back to 6.0% by 2015. Approximately one half of the population (54%) currently has some form of dental benefit, and the dental benefit market is expected to grow at approximately 2% to 3% annually. Having dental benefits significantly impacts the ability to access care. According to the Agency for Healthcare Research and Quality (2004), 47.8% of insured individuals under the age of sixty-five accessed care in 2000, while only 28.9% of those covered by Medicaid and 19.2% of the uninsured did so. Not only did more insured people visit the dentist, but they also had more visits per person (13.6% more). In 2000 the average person with dental benefits paid 4.1% out-of-pocket, while the uninsured paid 79.8%. This may account for why so few of them accessed care and validated the assertion that out-of-pocket expense is a significant barrier to accessing care. Overall, government contributes only around 5% of the total dental annual costs.

What Is Needed

Why should the oral health profession be interested in the creation of clinical guidelines?

Despite current conventional wisdom to the contrary, establishment and acceptance of dental standards of care will not mitigate the most urgent issues currently the profession today. Oral The challenge for payers of health benefits is to determine at what point the actual treatment has insufficient scientific evidence to support covering it as a benefit, especially if the evidence strongly supports an alternative treatment. The emotional stress brought on by a major illness precludes most individuals from appropriately researching cost and quality in health care, even when the critical data is available. health disparities, continuing financial barriers, ineffectiveness of treatments, commercialization of esthetic treatments, and inefficiency in the delivery of oral health care especially are immediate critical problems to be solved if this country is to achieve optimum oral health for all. A more feasible approach may be the development of "clinical practice guidelines" for common oral conditions such as caries and periodontal disease.

The development of "clinical practice guidelines" for caries and periodontal disease would support quality improvement in the oral healthcare delivery system. Good guidelines are grounded in science and supported by evidence of effective outcomes, clear, flexible, measurable, population-based, and are easy to implement for the private practitioner. Guidelines use best available scientific to support decision making by both the patient and the practitioner, without creating artificial barriers for either in accessing care. Clinical care often suffers because of inefficient transfer of knowledge from research to practice and the natural decline in a practitioner's knowledge over time after training is completed. Consider the poor utilization of beta-blockers for heart attack victims by hospital emergency rooms as an example of when best evidence that is easily obtained is not implemented in the treatment of a patient.

The Agency for Healthcare Research and Quality has taken the lead in the development of clinical practice guidelines in medicine. A similar effort in dentistry would enhance the effort to improve quality in the oral health care delivery system, while not increasing the cost of care. Transparency of cost and quality is essential for oral healthcare purchase decision making. It is important to define quality not as a dentist would in terms of technical excellence. but from the perspective of the purchaser, if oral health is to compete for its share of the health care dollar. A purchaser wants to know that the care they obtain is effective. Satisfaction improves with timely, safe, patient centered care. Cost is controlled through efficient delivery of the necessary care. Effectiveness requires that treatments are based on sound evidence and that the patient's outcome will be a measurable improvement in their oral health status. The dollars that are currently spent on ineffective oral health care could be redistributed to effective treatments, thereby improving quality and access to care with out increasing costs.

Shrinking financial resources create an environment where cost and quality matter to those purchasing medical and dental services. Purchasers actively seek to contain or reduce cost while increasing quality. According to the Institute of Medicine report of March 2001, *Crossing the Quality Chasm: A New Health System for the 21st Century,* the U.S. healthcare system falls short in the delivery of consistent, high-quality care to all people.

In order to improve oral health, and the quality of the oral healthcare delivery system, one does not need dental standards of care. Following a prescribed set of activities given a specific diagnosis may be part of what is needed to improve oral health, but effectiveness cannot be achieved by exclusive focus of efficiency or quality standards. The real issue is whether or not the appropriate set of treatment activities, as determined by the best scientific evidence available, are delivered to the right patient, at the right time, and for the right cost. Currently, wide variations exist in the practice of dentistry. Variation may result in either underutilization or overutilization of effective services. Oral health practitioners currently have no systematic way of determining effective risk-adjusted approaches toward the treatment of even the most common oral diseases. Providing care that meets of exceeds standards for some patients does not guarantee the optimal delivery of resources to populations as a whole.

The complexity of the dental care delivery system challenges all of us in converting current available information into beliefs and actions in the treatment room. Good evidence that a treatment is effective requires more than research data; patient outcomes must also be evaluated regularly and continuously evaluated in each specific location where care is delivered. Data collection, synthesis, and dissemination of patient outcomes is essential in the development of evidence required to support treatment decision making. Outcome information is lacking in the oral healthcare delivery system for the simple reason of a lack of diagnostic codes necessary to perform the analytics.

The resultant gaps between what we know and do, and what actually works creates an array of treatments that are at best ineffective, and at worst, harmful to the patient or the practitioner or both. Common procedures done every day, with good intentions, may have questionable benefit and use up valuable, limited financial resources. For example, the routine of having dental prophylaxis every six months, regardless of the patient's actual risk for developing oral disease, is a potential waste of resources. Standards of care, guidelines, or EBD, although they may be important for other reasons, fail to address these concerns. At the same time, an individual at high risk of disease is being deprived of a customized targeted prevention plan, critical in the management of his or her disease. Population-based rather than procedure-based guidelines would help move oral health care from the traditional paradigm of anecdotal, personal observation, clinical intuition, and possible benefit, to a paradigm of decision making based on optimizing outcomes, with some ability to quantify the risk and benefit, while including patient and doctor values, preferences, and knowledge.

Currently, there is no way for individual or group purchasers of dental services to assess quality of care. Group purchasers often look to third-party payors for quality assurance. Utilization data from dental benefit claims operations use treatment code patterns to identify questionable care, which is a very poor surrogate measure at best. The patterns are relative to other practitioners in particular regions and no assumptions are made about the appropriateness of the care delivered, simply whether or not the pattern of care is similar to other local practitioners. Patient complaints regarding care are another source of surrogate quality measures. The level of compliance with accepted clinical practice guidelines would provide a rational, measurable quality measure that could be used by a wide array of participants in the oral healthcare delivery system.

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RESTORATION AND ENHANCEMENT: Is Cosmetic Dentistry Ethical?

Larry Jenson, DDS, MA

Abstract

The ethical ground for restoration (returning a patient to healthy form and function) differs from enhancement (using medical means to improve appearance). Physicians and dentists who argue that enhancements improve self-esteem must reconcile this claim with the fact that they are not licensed to practice psychology. The extreme views are that doctors either should provide cosmetic services as requested by patients or they should not. The middle position is that doctors must retain their fiduciary position of trust based on professional judgment and advocating for patients' health interests. Patient health always outweighs patients' cosmetic desires.

he rapid rise in demand for cosmetic procedures in both medicine and dentistry has had a dramatic effect on the practice of both professions. Both physicians and dentists educated in a tradition that emphasizes the use of surgical skills to help people with health needs are now routinely asked for procedures that have little or nothing to do with illness. The unmitigated proliferation of "extreme makeover" programs on television and in the print media would give the impression that the medical and dental communities are in full support of this new deployment of surgical skills. Yet, it is quite possible that the intense public demand has outpaced any thorough examination of the ethics that are relevant to this change. Perhaps it is time to take a collective breath and try to find a way to reconcile this change in popular opinion about what physicians and dentists should be expected to provide and the ethical traditions of these professions.

This paper will examine the ethical aspects of cosmetic procedures and try to provide an ethical basis from which dentists can make sound treatment decisions with their patients. I will argue that there are indeed times when the ethical dentist (and physician) ought to say no to requests for cosmetic procedures and I will attempt to provide some practical guidelines for determining such times.

There are several terms and concepts that if clearly defined would help this investigation greatly. Unfortunately, terms such as "health," "disease," "normal," "medically necessary," "treatment," "risk," "need," and "esthetics" all involve significant ambiguity and are often at risk of being defined however the user wishes. What counts as a "risk" for one person may not be the same for another, and what is considered a "need" may also vary greatly within a given population. Nonetheless, I think it is possible to work through the general outlines of the



Dr. Jenson is in private practice in San Francisco and is also Associate Professor in the Division of Clinical General Dentistry at UCSF Dental School. He may be reached at jensonl@dentistry.ucsf.edu. ethics of cosmetic procedures without a definitive consensus on these terms. I will ultimately reject the thesis that since subjectivity plays a role in doctor-patient treatment considerations, it is always the deciding factor in those cases.

Restoration and Enhancement

To begin, I will take "restoration" to mean the act of returning something (in this case a person) to normal form and/or function. Things in need of restoration have a defect of some sort and, with regards to people, these defects go by many names, such as malady, disease, deficit, etc. I will take it as uncontroversial that, whatever the precise definition of health may be, the traditional goal of medical and dental care has been to eliminate or manage defects and restore people to health (normal form and function), however broad the "normal" limits might be. This is commonly known as healing or curing or therapy. With regard to plastic surgery and dentistry, examples of restorative procedures include restoring a broken tooth with a porcelain crown, repairing a cleft lip, reconstructing a breast following a mastectomy, and reconstructing a nose following trauma.

"Enhancement," on the other hand, seeks to take an individual who has no defect and improve that person's form or function (according to some standard other than health) through medical or dental procedure. Examples of enhancement include prescribing steroids or beta-blockers to improve the performance of an athlete, surgically altering a body part to improve performance on a task, prescribing amphetamines to increase job productivity, or any number of cosmetic procedures (both medical and dental) that enhance esthetics.

Some will immediately argue that cosmetic procedures do not belong in the category of enhancement. Cosmetic surgeons and dentists are famous for claiming that patients do indeed have a deficit (unattractiveness, ugliness, etc.) and that cosmetic procedures "heal" the individual by increasing the individual's perception of themselves (Christiansen, 1989: Leibler et al. 2004). However, Jos Welie has convincingly made the case in his excellent 1999 article that "ugliness" is, on the contrary, not a medical condition at all and procedures that seek to "heal" this condition are outside of medicine and dentistry proper (Welie, 1999). Likewise, Eileen Ringel has argued that the effects of aging on skin are not a disease and therefore cosmetic skin enhancement is not a therapy or treatment in the proper sense (Ringel, 1998).

The problem here is that the advocates of cosmetic procedures confuse benefit with therapy. Just because something is of benefit to a patient does not necessarily place it within the proper domain of dentistry or medicine, which is the restoration of people to health (normal function and form), i.e., therapy. There is no doubt that people find great benefit in tattoos and other body art; but just because these involve the body it does not logically follow that physicians and dentists should be offering to do these procedures or that they should be considered examples of therapy. Many patients no doubt desire and are made happy by cosmetic procedures; but this is no argument for the ethical acceptance of these procedures as appropriate components of dental or medical practice.

As Ringel states: "When happiness replaces healing as the goal of medicine, the practice of medicine becomes a commodity and the medical profession just another way to make a living" (Ringel, 1998). Traditionally, the goal of medical and dental therapy has been to provide a benefit that addresses a deficit, restoring a patient as much as possible to normal form and function. The suggestion that physicians and dentists may provide services that are outside of the traditional goals of both professions should at least be ethically suspect. Just because a physician or dentist has the capability to provide a procedure does not make it ethically acceptable to do so. "Therapy" and "treatment" are terms to be used only when discussing procedures that have some dental or medical benefit by restoring the patient to health or maintaining a patient's health in the face of some threat to it.

Have medicine and dentistry evolved to the point that this tradition no longer applies? Perhaps they have. And yet, I doubt if the subject has had sufficient formal discussion to create a consensus among practitioners and ethicists. One thing is clear, the sheer prevalence of cosmetic procedures performed in contemporary medicine and dentistry is Physicians and dentists who perform cosmetic procedures are not trained to evaluate psychological and psychiatric disorders, so if this is their rationale for doing cosmetic procedures, they are offering therapy without a proper diagnosis or, in the case of dentists, practicing outside the scope of practice. not a sufficient argument for the inclusion of cosmetics within the professions. Moreover, opinion surveys showing that providers and patients are "comfortable" with these procedures is a poor argument as well (Christiansen, 1994). Many may feel that in regards to cosmetics "the horse is already out of the barn." But my sense is that there is a sufficient level of uneasiness (at least within the dental community) that a reasoned ethical investigation may still recover what is rapidly being lost everyday.

There is one way in which it may seem that cosmetic surgeons and dentists really do have a good point in saying that they are actually providing therapy to their patients. They claim that the cosmetic procedures they perform are "psychotherapeutic." Poor self-esteem and other psychological maladies are often "cured" or at least the patient's situation is significantly improved by giving someone a better "look."

There are many problems with this thesis and Eileen Ringel has done an excellent job identifying them (Ringel, 1998). Briefly summarized: There is no strong evidence that cosmetic procedures improve self-esteem. In fact, cosmetic procedures, by focusing on superficial attributes of the person, may only deflect and defer real progress toward an authentic acceptance of the person from which a true increase of self-esteem will result. Moreover, physicians and dentists who perform cosmetic procedures are not trained to evaluate psychological and psychiatric disorders, so if this is their rationale for doing cosmetic procedures, they are offering therapy without a proper diagnosis or, in the case of dentists, practicing outside the scope of practice. In fact, as far as outcomes are concerned. the evidence that surgical therapy is an effective treatment for psychiatric disorders (with the exceptions of body dysmorphic

syndrome and sex reassignment surgery) is thin or nonexistent. Lastly, it is reasonably argued that any patient with a serious psychological deficit requiring treatment may not be in a position to give an informed consent, and treating such a patient simply on the basis of his or her request for treatment would be unethical for this reason alone.

THE CONTINUUM

With these arguments in mind, I think it is reasonable to draw a distinction between medical and dental procedures and cosmetic procedures. Now we must ask ourselves whether dentists and physicians ought to be providing cosmetic procedures at all. And if the answer to this question is yes, what are the circumstances under which a physician or dentist is ethically justified in performing such services?

We can look at the possible answers to the first question as lying somewhere along a continuum. At one extreme, we have the position that dentists and physicians should not perform any cosmetic procedures. At the other extreme, we have the position that physicians and dentists should provide any cosmetic procedure that the patient asks for as long as the physician or dentist is competent to provide such services. Somewhere in between these is the position that physicians and dentists may provide cosmetic procedures, but must not be merely an agent of the patient; they will sometimes decline to treat based on their judgment of the situation.

Let's consider the first extreme. Welie has made the case that cosmetic procedures are outside of medicine and dentistry proper and thus outside the ethics of those professions. People (patients) who decide to allow physicians or dentists to perform these procedures ought to know that the ethics of the profession do not apply and they can be no more assured of professional care than they would be at a tattoo parlor. The ethics of the marketplace that any muffler shop or hair salon follows is the only ethical standard constraining the relationship at that point. Now if this were indeed the case, it is reasonable to say that there is nothing special about having a physician or dentist provide these services. Just as with tattoos and hair styling, anyone talented enough and creative enough should be able to obtain a license to provide cosmetic surgery. (In that case, of course, the costs of these procedures would undoubtedly drop and the benefits of cosmetic procedures would be obtainable by a larger segment of the community.) From the standpoint of the principle of justice, this would necessarily be a good thing.

DOCTORS AND COSMETOLOGISTS

However, most members of society want more than justice, low prices, and good training: they demand a certain level of professional judgment and want to know that, when it comes to surgery on their bodies, someone is looking out for them. Society's implicit contract with physicians and dentists expects a security that can only come from something beyond skill and training, namely professional judgment in the best interest of the patient. It is this fiduciary responsibility that distinguishes medicine and dentistry as professions; they are not just businesses. Without this fiduciary responsibility there is no such thing as professional ethics.

The key aspect of the doctor-patient relationship is that the doctor is ethically bound to decline to "treat" a patient requesting treatment if the risks and costs of the procedure outweigh the benefits. It is a generally accepted ethical tenet that patients cannot ask doctors to hurt them (Ozar & Sokol, 2002; Beauchamp & Childress, 1983). Because of this, it is safe to say that people are not ready to turn over cosmetic surgery to tattoo artists and others in the esthetics business, however gifted they may be. So, either we license anyone with the ability to provide cosmetic procedures, or we bring these procedures into the domain of medicine and dentistry along with the professional ethics that apply to them.

Now let's look at the other end of the continuum. If all cosmetic procedures are fully within the domains of medicine and dentistry, then patients clearly may request any cosmetic procedure they wish and physicians and dentists who value the business may ethically provide these services if they are capable of doing so.

Gary Chiodo and Susan Tolle have addressed the issue of cosmetics procedures in some detail (Chiodo & Tolle, 1993). They argue first that there are indeed limits to a patient's right to demand cosmetic dental services. Briefly summarized: Dentists have the ethical duty to weigh the risks, costs, and benefits of a given procedure and decline to treat if the risks and costs outweigh the benefits. The ethical principles of beneficence and non-maleficence both support this conclusion. But Chiodo and Tolle propose that, if the risks and costs do not outweigh the benefits, the patient has the right to expect the treatment because it passes the benefit/harm test that the dentist is professionally obligated to apply. Chiodo and Tolle rightly emphasize the subjective nature of this type of deliberation and point out that the personal values of the patients, and thus the rationale for their treatment requests, are often different from the values of the

dentist. The significance of risks, costs, or benefits varies from patient to patient. Chiodo and Tolle argue that a dentist should not impose his or her values on the patient unless a clear case can be made that the proposed treatment has unacceptable risks or will, in fact, result in harm to the patient. They go on to say, however, that dentists always have the right to refer to another practitioner if they are "uncomfortable" doing a procedure they would not choose for themselves.

There are two points to be made here regarding Chiodo and Tolle's position. First, the word "treatment" is used to describe cosmetic procedures. "Treatment" suggests that there is some dental health benefit received as a result of the procedure. We have already established that there is no health-related dental benefit (no goal of restoration) in enhancement procedures, so this use of the word "treatment" stretches its meaning significantly. When no health-related dental benefit is to be had, normal considerations for balancing risks, costs, and benefits may not apply. More on this point below.

Second, as I have argued previously (Jenson, 2003), if a procedure's risks and costs do not outweigh the benefits, the dentist must ordinarily provide the treatment if he or she is capable. Otherwise there is no real ethical weight to patient autonomy.

Chiodo and Tolle are in alignment with this; and other bioethicists would agree that the normative picture of the doctor-patient relationship as a paternalistic or guild-based cannot be accurate (Ozar & Sokol, 2002; Kirkland & Tong, 1996). But the fact that the doctor-patient relationship should not be paternalistic does not require us to accept the other extreme of our continuum where the doctor is merely an agent of the patient and must do whatever the patient asks.

With just a little reflection and a few examples, the case can be made that this extreme position does not accurately describe the ethics of enhancement procedures. Consider the case of a person who would like to have his front teeth filed down to sharp points for either esthetic or cultural reasons. While we might make the case that the patient values this procedure highly, we would be hardpressed to find a practicing dentist who would agree to this procedure. Similarly, we would be hardpressed to find a physician who thinks it is a wise choice to give an otherwise healthy athlete a prescription for steroids. In both cases, the harm or potential harm to the patient seems to conflict with some deeply held sense of what it means to be a dentist or physician. It simply does not make sense to create an ethical parameter for the doctor-patient relationship that has implications that no doctor could support. We need to seek some sort of reflective equilibrium that is both rational and realistic.

Having looked at the extremes, let's now consider a middle position. This position states that cosmetic procedures may be done by dentists and physicians, yet it also holds that there are times when the physician or dentist must say "no" to an enhancement request. How are we to define this position and locate it along the continuum? While it may be difficult to delineate this point in specific instances, I think we can at least establish some general guidelines.

The first point to stress is open communication between doctor and patient. Weighing risks, costs, and benefits to determine a course of treatment in the proper sense is, by anyone's assessment, not a mathematical process. The process always involves the judgment and values of both doctor and patient. A different outcome from these deliberations is almost to be expected with different doctors and different patients. However, the fact that these deliberations involve some aspect of subjective values does not mean that they are inherently irrational; reasonable people can come to different conclusions and parties who disagree on what is best may still agree precisely on what is unacceptable. A judicious consideration of clinical experience. research studies, and patient preferences is ethically demanded of the doctor and can lead him or her to a reasonably good and ethical treatment plan for a specific patient.

This dynamic process, this interactive style of doctor-patient relationship is crucial to the ethical treatment of patients (Ozar & Sokol, 1994). And it must be part of the relationship between doctor and patient when cosmetic procedures are under consideration. Ultimately, both patient and doctor have rights; neither gets to dictate the treatment at all times and each has the right to decide not to participate in a procedure, the patient at anytime and the doctor under certain circumstances (Jenson, 2003).

Second, having already established that enhancement procedures are not "treatments" per se, it is fair to ask then if the same ethics apply to decisions between doctors and patients about cosmetic procedures as they apply to treatments proper. I propose that in the case of cosmetic procedures, it is simply not important to the dentist's ethical decision that the patient thinks the

procedure would be beneficial. The values at work in patients' cosmetic decisions in the dental office do not differ from the values at work in other areas, far outside of the domain of dentistry and medicine proper, including tattoos and hair styling. People do, of course, place great benefit in some of these things: but what significant difference is there between people's valuing of cosmetic medical and dental procedures and their valuing of tattoos or hairstyles? The proposal here is that we have to say that all cosmetic procedures are simply a benefit to the patient with no hierarchy of value in relation to health, which is the focus of dental and medical decisions in the proper sense. As such, they are irrelevant to the doctor's deliberations as to whether or not he or she should agree to do the procedure. In practice this will mean that the threshold at which the doctor may say "yes" to a procedure rises significantly with a cosmetic procedure because it involves no health benefit to be weighed against the possible risks and harm of the procedure. What is important to the doctor's deliberation, then, is whether or not the procedure presents a significant harm or potential for harm to the patient's oral or general health.

For example, while it may be justifiable to expose a patient to the risk of death by general anesthesia (one in ten thousand cases) to obtain a medical benefit (e.g., removing a brain tumor), it is unjustifiable to expose them to the same risk in order to remove the fat from their thighs. For a dental example, a dentist who places a gold crown on a tooth that has no need for restoration, simply because the patient sees an esthetic benefit, would be practicing unethically given the fact that there is a risk (one in one hundred) that the pulp of the tooth would be damaged in the process. Another common dental example would be the placement of porcelain veneers. If the veneers are intended to overcome some defect, (say, deteriorating restorations) the benefits of the procedure are more restorative in nature and may then be worth the relative risks and costs. Placing veneers to take a patient from a Vita shade B3 to B1 on the other hand, is clearly an enhancement procedure and may be difficult to justify given the attendant risks and costs. As an alternative, bleaching teeth has few if any risks and may therefore be ethically justified for the patient who has stained teeth.

The proposal here is that, if there is no health-related benefit to justify it, the dentist may not ethically perform a procedure with any significant risk of harm to the patient. If an enhancement procedure can be done without significant hazards, a dentist or doctor may agree to a patient's request. (At no time, of course, is the doctor justified in providing a procedure if it is beyond his or her capabilities.) Patient autonomy never outweighs the patient's health (Ozar & Sokol, 2002), and so the range of ethically acceptable procedures available for a patient to choose from will thus be significantly curtailed when it comes to cosmetic procedures.

Is it possible to maintain this distinction between these two ethics (patterns of valuing), one for regular dental procedures and one for cosmetic procedures? Can we really split professional ethics and say that some procedures demand one set of behaviors and another procedure some other? While it may seem counterintuitive initially, I propose that this is the case. Keep in mind that the only reason to include cosmetic procedures in the domain of medicine and dentistry is that the community thinks they ought to

be there for its own protection. But the community cannot have it both ways: it cannot both demand that doctors make all of these procedures available and then not bring their professional judgment and professional duties to bear in specific cases-especially the duty not to harm, and to permit harm only in the interest of even greater health benefit. This would leave dental practitioners (at least the conscientious ones) in an impossible position. Distinguishing esthetic procedures from health related treatments in this way produces a workable compromise that is superior to either of the extreme positions.

In the future, physicians and dentists and the community will have to decide if enhancement procedures will eventually be part of medicine and dentistry proper and that health will mean more than restoring a person to normal function and form. (There are signs that we may be moving in this direction: see Carl Elliott's 2003 book, Better than Well). Until then, many of the cosmetic surgeries currently performed by physicians and dentistry simply cannot be supported ethically. This is not in any way a judgment on the values of the people who seek these procedures. People, ultimately, have the right to decide what they do with their bodies. They cannot, however, expect that a doctor should take part in that choice and contribute to the harm that these choices may bring. People must accept that there are limits to what their doctors can ethically provide; and if they desire more than this, they should seek those who are not bound by professional ethics. Caveat emptor.

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Self-Control

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Abstract

There is a part of our mental functioning that makes decisions and executes them and another part that monitors and regulates the first part. When these operations are in balance, we may be said to exercise self-control. There is evidence that these functions operate in different parts of the brain. Self-control plays a vital role in performing complex tasks, habit formation, and ethics. Self-control also interacts with goal setting and achievement. There are predictable differences among individuals who seek success and those who avoid failure. believe it was Joseph Campbell who popularized the quip, "As you scramble up the ladder of success, it is wise to pause occasionally to make certain it is on the right wall." The concept is that accomplishing one's goals involves two activities: Most of it is time and energy on task; less obvious and less time consuming is managing the target and the effort to get started.

Two-process View

This two-process view of goals-directed accomplishment has become current among psychologists. There is one part of us that does the work and another that exercises (or sometimes fails to exercise) executive oversight. In the literature, this is known as the problem of self-control. America is awash with exhortations about learning to use the latest gadgets, mastering new skills, working hard, performance excellence, and success. Will power, trade-offs (consciously deciding not to do something), monitoring to ensure that circumstances have remained the same, and self-denial are less fashionable topics of conversation and there is frank skepticism that anything can be done to change these aspects of "human nature."

We do know a great deal, however, about breaking habits, scheduling productive work days, exercising vigilance and oversight, and why people cheat. We have even identified some of regions in the brain that are involved in these processes. Self-control, and the responsibility that accompanies it, are not accidents, mysteries, or innate haracteristics. When I was young, I broke a ceramic dish my mother kept on the coffee table. When caught red-handed, I blurted out, "I didn't do it; my hand did." That works for a five-year-old, but not an adult. We are responsible for both our actions and for self-control.

The basic purpose of self-control is simple, but the way it works is not. Behavior is motivated to achieve goals and provide satisfaction. If there were only one feedback loop focused on goal attainment-if work were self-managing -we would converge on mindless, repetitious behavior. As long as we focused on the unrealized gap between what we want and our not having achieved it yet, we would remained fixated. Alternatively, if we persist in repeating those things that lead to satisfaction, we again get stuck in mindless idling. The challenge in understanding where people put their efforts is not in explaining why we keep doing the same things over and over again; what begs for clarity is why we switch from one task to another. There needs to be a second feedback loop that tells us when it is time to switch.

Emotions Control Behavior

One popular theory is that emotions rather than consequences are what cause behavior. When we succeed at a task, the emotion is relief or satisfaction. We are free to consider alternatives, to look for new and attractive investments

for our time and talent. There is even something like a built-in discounting system for rewards. What was once thrilling becomes satisfying and even taken-for-granted over time because of the survival value in varying the goals we put our hands to. The value of rewards does not follow the rules of good arithmetic. More is not always better. It is human nature to "satisfice"; to accept good enough and then ask whether more good enough is better than making up some other existing deficit. Consider, as an example, running twenty minutes over on a difficult crown preparation. When it is finally worked out, does the dentist immediately look for another such case or, more typically. reassess the remaining schedule for the day to see how he or she might get back on schedule?

The other type of result from effort is more complicated. It is not always easy to anticipate what will happen following unsuccessful attempts. There are several sections below that address themselves to the difference between striving to achieve success and striving to avoid failure. There is a different logic in these two cases. At the most general level, when the expected results are undershot by a small amount, the resulting emotions of frustration and even annovance stimulate renewed effort and close off any consideration for alternative activities. This is the fixation of determination. But when efforts are consistently short or dramatically disappointing, the emotion

is sadness, depression, or resignation and a consequent freeing of attention to other activities.

Sometimes our interests are best served by carefully focusing our attention and dedicating our effort to the task at hand; sometimes they are better served by considering alternatives—either different approaches to the task or different tasks. It is the job of self-control to balance task management, and emotion resulting from performance feedback plays a role in this self-control.

Performance (work on the task, not deciding which task to focus on) is a function of capacity to do the work and effort applied to it. Fast dental work is a matter of skill and applying one's self. Self-control operates differently. Knowing when it is appropriate to work fast or whether caution or even discretion are more to the point requires monitoring what one is doing. Vigilance regarding one's efforts is a function of personality type (as discussed below) and of "self-regulatory strength"-will power. A good analogy might be oxygen debt in muscles. Regardless of whether one is running, climbing stairs, or engaged in other activities, when the capacity of the red blood cells to carry oxygen to the muscle tissues is exceeded for any period of time, performance declines and then ceases. Similarly, when attention is diverted to self-control in one area (say

The challenge in understanding where people put their efforts is not in explaining why we keep doing the same things over and over again; what begs for clarity is why we switch from one task to another. Don't start a diet if you are tired... Habits are patterns of circumstances and behaviors that are self-reinforcing and largely unconscious. This makes them especially resistant to management by self-control. managing professional responses to an unreasonable patient) it is not available for other purposes (say managing control of a difficult dental procedure). Fatigue, hunger, generalized emotional stress, and other demands reduce selfcontrol. Don't start a diet if you are tired.

Cortical Location

It has not been established whether capacity for self-control can be increased through exercise. It is well-established, however, that trauma to the frontal region of the brain can result in permanent and severe decrements in self-control. The ability to attend to and shift among several tasks is associated with the prefrontal cortex. Lesions in the dorsolateral prefrontal cortex are associated with difficulty in planning, making choices, processing novel situations, and initiating action. The ventromedial orbitofrontal cortex appears to mediate social judgment, while the anterior cingulated cortex seems to be involved with attention switching, overcoming habitual responses, monitoring actions, and dividing attention (multitasking).

Personality Types

There is also evidence that individuals differ in their level of self-control and that these differences are enduring personal traits. Connections have been demonstrated between low generalized capacity for self-control and various selfdestructive habits such as overeating, drug and alcohol addiction, and compulsive shopping. Research has also demonstrated some connections between deficits in self-control and negative social behavior such as sexual obsessions and a wide range of criminal and antisocial behavior. It is important to emphasize that there are alternative views on these topics, but there is a significant body of evidence that points in the direction of individuals who have an extreme and socially unacceptable inability to refrain from continuing to engage in behaviors that they actually understand to be bad for them. Ask any cigarette smoker. Consider any dentist whose lifestyle has gotten so far out of hand that he or she abuses the practice and his or her patients to support a habit.

On the positive side of the matter of individual differences in will power, there are several well-publicized studies showing a relationship between cookies and Scholastic Aptitude Test (college entrance examination) scores. Walter Mischel and his colleagues have reported the best known studies. Four-year-old children are told that they will be given many cookies if they can wait a number of minutes or have one now. The adult is then called out of the room on a pretext, and the children's will power is quantified in minutes. There is a clear and significant correlation between ability to delay gratification among the youngsters and their SAT scores when adolescents.

There is such a thing as will power. It has a neurological foundation and varies in strength across individuals. It appears to operate through emotions arising from the difference between goals and outcomes, but in a complex fashion. It also seems to be fixed in capacity, works across all activities, and is subject to fatigue and renewal much like muscle tone. The function of self-control is to manage shifts from one activity to another (or approaches to the same task) to maximize overall personal benefit.

Habits

Habits are patterns of circumstances and behaviors that are self-reinforcing and largely unconscious. This makes them especially resistant to management by self-control.

It is necessary, first of all, to realize that the vast majority of habits are beneficial, or at least neutral. They grow and strengthen precisely because they are useful and need no conscious monitoring; they free the limited reservoir of will power for use elsewhere. As long as the chains of synchronized behaviors that form task performance are appropriate to the circumstances, are not dominated by some other more appropriate behavior sequence, and produce the desired effect, they should be left alone. Where we must enlist the good offices of self-control are where conditions have been altered (we failed to notice that our metabolisms were changed by maturity until our pants size brought that to our attention) or where we need to make a new sequence of behaviors self-reinforcing and subconscious.

FOUR-STEP HADIT REPLACEMENT

To understand habit formation, breaking, or modification, it is necessary to realize that the process of converting attentioncontrolled behavior into automatically controlled behavior involves several steps. The dynamics, hence the role, of self-control differs at each stage in this process. One accepted version of this staged process involves: 1) determination; 2) development; 3) maintenance; and 4) habit formation proper. Determining to create a new habit or to break an old one is entirely conscious and under the sway of self-control. It is a work of mental calculus: do the expected benefits and likelihood of success outweigh the inconvenience and the probability of failure? Frequently, this involves study and assembly of equipment and other accoutrements to support the habitchanging journey. The second stage,

development, begins when the individual demonstrates for the first time that the desired behavior can be performed at all and ends when the behavior can be performed consistently. A new kind of self-control is now called for. The development stage is where the collision occurs between the hoped-for benefits and the unpleasant experiences and disappointments associated with lapses. This is the classic test of will power.

Consider a dentist who wants to create a new habit of working with a tight modular scheduling system. Determination comes from reading or attending CE programs, discussions with consultants, and engagement of the staff. It looks attractive on paper. The path through the development stage is strewn with frustration over restricted freedom and responsiveness, fears about decreased quality, misgivings that the staff is controlling the office, running over several times a day, better productivity figures, novelty, and a dozen other factors. All of these shout for attention. Losing weight would be another example. There are very good reasons for framing the process as one of "building the habit of eating and exercise that creates a new, more appropriate weight"-the goal of "weight loss" almost always produces eventual weight gain. The first phase is conscious and calculating, perhaps assisted by the thinly disguised disappointment of someone who cares about you or the stern advice of a physician. Development is a tension between the actual beneficial and discouraging outcomes and is managed, or not, by self-control.

If the development stage is persisted in for a reasonable length of time, the third stage, maintenance, is reached. The major work of the maintenance phase is to balance actual costs and benefits and to build tolerance for the tension that exists between them. Occasionally, there are relapses to development or even determination, but eventually, maintenance becomes habit. This occurs primarily by circumstances and normal patterns stabilizing to replace self-control. Think of driving: if you keep the car pointed in the middle of the road, you will eventually get to your destination, and you may even forget to think very much about the steering process. Once a habit is created, it cannot be changed other than by a process of forming a new habit.

Self-control is conspicuous in all purposeful thinking and choice behavior. It is essential in selecting a habit to attempt. In habit development, traditional will power is needed to manage conflicting experiences of reward and punishment. Self-control plays only a small role in maintenance, primarily as monitoring, and its disappearance in the fourth stage is part of the definition of habit formation or replacement.

Self-control and Practice

Habits are not created by will power; self-control is part of the management process that allows habits that have potential for becoming self-sustaining to take hold. That is a subtle shift of perspective and is entirely Zen. The metaphor about driving the car is entirely apt. Habits must be thought of in terms of responsiveness and perseverance while natural forces work. They are not willed into existence. George Leonard's little book, *Mastery*, describes this beautifully. He conceives of mastery formation as a sequence of reasonably sharp and brief positive changes in behavior followed by very long plateaus.

The key issue is what individuals do during the plateaus when no behavior is changing. Leonard's answer is "practice." That is a good dental term and it suits what happens in growing practices quite well. There are long periods of doing one's best with no apparent changes in outcome. But breakthroughs do occur, and they are more likely than gradual improvements.

The alternatives to practice are variations on things falling apart. One of the pretenders to mastery that Leonard identifies is the "dabbler" (see Figure 1). This is the person who buys gadgets, embraces new systems, makes grand announcements (or threats), and attempts to purchase improvement. The course of change is predictably a brief spurt in performance until the novelty wears off and then rapid decline. The "obsessive" is driven by outcomes and sheer force of character. The actual pattern of performance of the obsessive is much like the dabbler, except that there are brief small spikes of improvement





followed by relapse as the obsessive inserts his or her energy and effort into the project and then withdraws in exhaustion. There is a fourth type that Leonard labels the "hacker," but one I would prefer to describe as a "drifter." Once established on a plateau, the drifter is content to stay there, maintaining his or her position with minimal effort as long as circumstances stay the same. As circumstances and performance begin to diverge, they drift toward weaker performance.

The only way to ensure a reasonable level of habit renewal is to practice. This should lead to alternating short periods of growth and long periods of stability. The irony is that practice is critical precisely at the point (the plateau) where nothing is changing. That requires self control in large doses. It also requires a reframing of what is occurring. As renowned basketball coach Bob Knight says, "The will to win is nothing; the will to get ready to win is everything." Professional growth cannot be predicted or controlled, but it can be prepared for. A key role for self-control is proper interpretation of what is at play. For example, dieters often interpret hunger as a sign that the diet is failing. Exactly the opposite is true; it means the diet is working. Effective dieters reinterpret hunger away from being a signal to eat to being a badge of success to be celebrated, just as a distance runner embraces and fights through fatigue. There is probably no practice innovation worth making that does not cause discomfort. There is probably no attempt to improve practice that succeeds without reinterpreting this discomfort in constructive ways.

Goals

Goals operate through self-control. The foremost psychologist studying the relationship between goals and behavior, Edwin Locke, notes that goals serve the valuable purpose of singling out which feedback matters. A dentist might focus on the speed of curing composites and wonder why case acceptance is falling off while patients are focused on the aggressiveness of informed consent (or vice versa). Goals direct individuals to those aspects of self-control that matter. What is not a goal is difficult to manage.

Self-control is most critical to goal setting. That is the moment when alternatives are considered and a level of performance is chosen that will, in concert with future outcomes, create the emotional results of perceived success or failure that regulate future effort or a shift of attention. It matters little to people who lack self-control what goals are set. They are deprived of useful information that will make future self-control possible.

Some of the surprises from research in goal setting include: higher goals almost always result in higher performance; creating evaluation systems almost always leads to spontaneous goal setting; people who are given realistic goals by their supervisors perform as well as those who set their own goals; and group goal setting is no more effective than individual goal setting. All of these research findings are in opposition to conventional wisdom and a lot of the popular press on the topic.

The first rule-that performance increases as the level of goals increasesis only true within a range. Extremely low goals are laughed off as a joke, as are ridiculously high ones. If goals exceed the ability of the performer or if circumstances place a barrier on performance, the level achieved is limited. Still, it remains generally the case that higher goals lead to greater effort and greater consistency of effort than do lower goals. This is probably the case for two reasons: setting goals, especially when they are recognized as being different from previous ones, requires conscious effort to imagine how success

can be achieved; and, secondly, higher goals are more likely to result in a performance gap that is motivation for stronger effort on subsequent attempts.

When evaluation systems are put in place, it is natural for goals to be considered, whether they are explicitly announced or not. This second surprise calls attention to the importance of the feedback-goal-gap regulation of performance. It is the gap that matters. Most people intuitively understand this and will supply one or the other to make a matched set available. Frustration and weak performance improvements are more likely to result from forcing a system that has mismatched goals and feedback than from leaving either unspecified. Dentists and staff always have reasonably clear goals for how busy the office should be, and they know how to gauge this without the assistance of an outside consultant. Just learning how well others are doing on comparable tasks improves performance if the norm group has a higher goal.

Many people are surprised by the third rule: imposed goals are as effective in raising performance as self-selected goals are—provided that they are realistic. One of the reasons dentists go to conventions and CE courses is to find out what others are setting as goals. ADA and other statistics on practice characteristics and income figures are popular reading. But the source of the goal is not particularly important for activating self-control and the resulting changes in performance.

The final rule relating goal setting and performance flies directly in the face of most advice that dentists will read in their non-subscription journals. We have to be careful here: the research shows that goals set externally are as effective in Some of the surprises from research in goal setting include: higher goals almost always result in higher performance; creating evaluation systems almost always leads to spontaneous goal setting; people who are given realistic goals by their supervisors perform as well as those who set their own goals; and group goal setting is no more effective than individual goal setting. improving performance as are individually set ones. The claim is not that goal setters will like the process better (generally they don't care too much one way or another) or that morale will improve (it won't when autonomy is curtailed). But performance will not be improved by letting a group deliberate on its goals. Besides building team spirit, one of the benefits from group goal setting is likely to be that alternative means for achieving the goals are discussed in groups.

Success and Failure

Individuals strive for success and individuals seek to avoid failure. But these are not two ends of the same continuum. A dentist who does eight units of veneers in hopes of showing them off to his colleagues exercises a different kind of self-control from a colleague who performs eight veneers while hoping to avoid occlusal and retention problems. The logic of seeking success differs from the logic of avoiding failure. It is even true that some people orient predominantly toward one type of self-control while others have the opposite personality.

The Case of Drs. AM and AF Consider the case of Drs. AM (achievement motivation) and AF (avoid failure). They take a practice management course together and, because their practices are very similar, they mutually agree on a goal of \$85,000 gross per month. Over coffee after the first month, they both report \$88,000 (no one knows what either actually produced). Both are happy and explain the various things they did to accomplish the goal, laying heavy emphasis on personal initiative. AM, the success-oriented dentist, even suggests that the target for next month has been raised to \$86,000; but AF will stay pat.

Next month at coffee, AM reports \$84,000 (\$2,000 under the new goal) and the more risk-averse AF also reports \$2,000 under goal, or \$83,000. This outcome is consistent with goal theory higher goals result in better performance and with the laws of nature that require some degree of random variation.

But the table conversation is different this month. Dr. AM mentions that the hygienist just hasn't bought into the new system. Dr. AF follows suit, noting that there were some strange and unanticipated cancellations on some large cases. Both agree that dentistry is just very unpredictable from month to month. Neither even hints at having as much involvement with the disappointing result as they had with the previous month's success. Hence the old saying that success has many parents and failure is an orphan. Hence also the well-established fundamental attribution theory in psychology.

The differences go further. Now it is the success-oriented Dr. AM who says the goals are fine and there is no need for change. Perhaps surprisingly, the dentist oriented toward avoiding failure announces a new goal-\$87,000, a large raise in the stakes. It has been documented repeatedly that following initial disappointing results, those who strive to avoid failure will raise their goals. The reasons are unclear, but they may include a desire to negate the failure ("that was only a random result and there should have been an increase"), a need to selfhandicap to achieve a compensatory success ("it is clear I will have to do much better to make up for the slip"). or simply a lack of realism and wishful thinking. The latter alternative has some weight behind it. It is generally the case that following initial failures, people with avoidance orientations set unrealistically high or unrealistically low goals (or even swing back and forth between the two). The changes they make in

goals following failure are more extreme than the goal changes made by achievement-oriented individuals. It is as though initial failure disorients the self-control mechanism of those trying to avoid failure.

But that is not all. Drs. AM and AF continue to meet for lunch and exchange reports revealing apparently large random swings in gross productivity, with a generally stable performance following some early gains for AM and a clear downward trend for AF. AM still complains about forces that cannot be controlled and the tedium of having to work at the new methods. AF is excited by occasional up months and crushed by the down months and is beginning to question the wisdom of the approach generally. He is finding it difficult to continue to make the effort. Eventually, AF begins to find conflicts that prevent meeting with his colleague. The rule here is simply that those with an orientation to achieve success persist longer in the face of disappointing outcomes than do those who seek to avoid failure.

Orientation Matters

This example is not meant to suggest that people who are oriented toward success always or even generally do better in life than those whose orientation is toward avoiding failure (although I suspect this might be true). Perhaps the system really is wrong, or maybe circumstances in the offices are not the same, or perhaps AM is a better dentist than AF. The example is intended only to illustrate that it is human nature to credit ourselves for success and blame circumstances for failure and that people with an orientation to avoid failure tend to set unrealistic goals and do not persist as long in the face of failure as do those striving for success.

The research establishing these rules was performed more than forty years ago and it is further significant because it has been repeatedly demonstrated that these differences in orientation toward success and failure are personality traits formed early in life and abiding thereafter. Dr. AM is the one who delaved gratification for the cookies as a child, while Dr. AF filched one as soon as the adult left-"just to make sure." There are a number of variations on this dichotomy, including a recent theory by Carol Dweck distinguishing between individuals who learn for the sake of giving correct answers from those who learn to understand the material. The patterns are roughly the same as those reported above. The answer-oriented individuals (seek to avoid failure) get As and Ds and give up on learning quickly. An application in dentistry would be the difference between a practitioner who attends a CE course to get credits and one who attends to learn how to make a specific change in the office.

PROMOTION VS. PREVENTION

A psychologist at Columbia University, E. Troy Higgins, has proposed yet another wrinkle on the dichotomy. He divides the world into folks who are focused on promotion and those focused on prevention. Promotion-oriented people are concerned with ideals, advancement, aspiration, and accomplishment (including removal of unwanted or damaging conditions). They are easy to spot because they are eager and positive. Prevention-oriented people are concerned with security, conformance with rules (even when they bitterly complain about them), safety, responsibility, protection, and the prevention of unwanted outcomes. They are cautious. The distinction Higgins is making is not exactly the same as striving for success versus avoidance of failure. It is preoccupation with positive outcomes (getting the good ones and getting rid of the bad ones) versus preoccupation with

negative outcomes (minimizing them). Ethicists often make a similar distinction between beneficence and maleficence.

Because this is an important, but perhaps slippery, notion, it can benefit from further explanation in graphic terms. Refer to the accompanying Figure 2. The two columns represent outcomes, simplified for our purposes as success and failure: the rows are actions that precede the outcomes that are characterized as high involvement or invasive versus low involvement or passive. The Xs represent actual combinations of outcomes reflecting a combined effect of effort (the rows) and chance factors. Four results are possible: 1) true positivespromotion effort resulting in success; 2) false positives-promotion effort resulting in failure; 3) false negativesprevention effort resulting in failure; and 4) true negatives-prevention effort resulting in success.

This is actually a favorite question now on Part II of the National Board Dental Examinations, wherein students are asked to select the correct name of the ratio of true positives to total positives and the name of the ratio of true negatives to total negatives ("selectivity" and "specificity"). Higgin's point is that promotion-oriented personalities focus on the left-hand side of the table; they strive to maximize the positives without paying too much attention to the negatives, "selectivity." Those with a prevention orientation concentrate on maximizing "specificity," keeping down the false negatives without much regard for the positives.

Promotion pride leads to post mortems of failures where the individual says, "If only I had done x, the result might have been different." The Endo that blows up on a promotion-oriented







dentist might be explained in terms such as needing to take additional radiographs or changed the working length. A dentist with prevention pride would speak in terms like "I shouldn't have been so aggressive (or conservative); I should have referred the case." Promotion analysis of failure stresses that more could have been done or done differently; a prevention analysis stresses what was not done. Promotion orientation is associated with seeing many potential alternatives in a situation; prevention orientation is more narrowly rule driven -there is one best way. Promotion orientation is characterized by stronger emotions-eagerness in the approach and excitement or disappointment in the outcome. By contrast, prevention orientation is subdued. The approach is accompanied by feelings of "dignity and properness" and the outcomes by concern or satisfaction. Speed is preferred by promotion-pride people, accuracy by prevention-pride people. The former are open to changing tasks regularly; the latter prefer to stay put. The "sunk-cost trap" involves continued investments is failing strategies. The vigilance orientation of the prevention personality reduces the likelihood of this trap, while promotion-minded people are orientated to finding the next success and overlooking their failures (thus continuing to feed them). Promotion-minded individuals feel especially bad about errors of omission-missed opportunities. The prevention personality regrets errors of commission.

It would be nice if we could combine the benefits of both personality types. That is not possible, as can be seen by looking at Figure 2 again. Consider the dashed horizontal line across the middle of the graph. The best strategy for the eager, promotion-minded individual is to

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lower the line. Bold steps will increase the number of hits; a more open strategy will increase the ratio of true positives to total positive outcomes. But lowering the line will have exactly the opposite effect for prevention-minded individuals: it increases the likelihood of false failures. Adjusting the world to benefit prevention orientated people will bring disadvantage to their promotion-minded peers. Optimizing standards for individuals oriented toward promotion will create a disadvantage those oriented toward prevention and vice versa. This tension is currently being played out with regard to national security and personal privacy. The National Security Administration would like to lower the horizontal line to catch more terrorists: the American Civil Liberties Union would like to raise it to protect the privacy of more Americans. (Congress is currently playing a strange card-make the line wider and let us, the Congress, decide cases on an individual basis).

There is actually one way in which the differences in personal preferences between promotion and prevention orientation matter less. Consider the right-hand part of the figure. The boundaries that define true positives and true negatives remains the same (the personality preferences of those involved are held constant), but there are fewer "errors." This represents a case where the skill in converting effort into outcome is improved. If the NSA were extremely accurate in collecting intelligence on only actual terrorists, the American public would not care too much about the principles of privacy involved. If dentists were enormously successful with all procedures, the line between high levels of success and patient protection would cease to matter much. Thus, the personality preferences surrounding promotion and prevention grow in significance in areas where chance intrudes on performance.

DENTISTRY IS PREVENTION-ORIENTED

Higgins presents his concept of promotion versus prevention orientation as a matter of the personality types of individuals. I would argue that there are personalities in whole segments of society and especially in whole professions. Dentistry is-by self selection, by training, and by norms of professional conducta prevention-oriented profession. It is conservative, concerned over making mistakes, and cautious. Every year, there are several editorials written with the title, "Primum, non nocere," This is a Latin phrase meaning "first, do no harm." It is believed to come from the Hippocratic Code, but that is a mistake that seriously challenges its own premise of not making mistakes. The sentence that the phrase is thought to appear in the Hippocratic Code is (in Greek, not Latin) "I will use my Art for the betterment of mankind and not for its harm." This is certainly a more balanced blend of the promotional and the preventive orientation, and, if anything, a slight nod in favor of promoting health.

Anyone who has read through to this point has demonstrated substantial self-control. Such a reader understands the importance of balancing attention to the task at hand while scanning the environment to make certain it is the right task. It is known that habits cannot be broken—only replaced by better ones —and that goals drive performance. Such an individual also likely has some insight into whether he or she is motivated to seek success or avoid failure and has grown accustomed to responding accordingly. There is probably no practice innovation worth making that does not cause discomfort. There is probably no attempt to improve practice that succeeds without reinterpreting this discomfort in constructive ways.

Recommended Reading



Summaries are available for the three recommended readings preceded by asterisks. Each is about eight pages long and conveys both the tone and content of the original source 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 Offices in Gaithersburg. A donation of \$15 to the ACD Foundation is suggested for the set of summaries on generations; a donation of \$50 would bring you summaries for all the 2005 leadership topics.

Roy F. Baumeister and Kathleen D. Vohs (Eds).

Handbook of Self-Regulation: Research, Theory, and Applications.*

New York: The Guilford Press, 2004. ISBN 1-57230-991-1; 573 pages; price unknown.

Self-regulation is the appropriate balance of dominant and current activities with potential alternatives for the longterm benefit of individuals and society. This book is designed as a comprehensive summary of current research and theory on self-regulation. There are twenty-eight chapters ranging from brain physiology to control of impulse buying. This is a scholarly publication, with extensive references.

Carol S. Dweck (1986). Motivational processes affecting learning.

American Psychologist, 41 (10), 1040-1048.

Performance goals link success and failure to publicly observable results. For learners who naturally have this orientation or where circumstances are created favoring this approach, individuals shy away from risky activities such as attempting new tasks. Learning goals link success and failure to long-term acquisition of enhanced skills. When this orientation prevails, learners perform better on related but slightly different tasks, persist longer in learning, and gain deeper understanding of the structure of the situation.

Leonard, George (1991). *Mastery*.* New York: Plume. ISBN 9-780452-

267565; 176 pages; about \$13.

Leonard warns against the prevailing bottom-line mentality that puts quick, easy results ahead of long-term dedication to the journey itself. He advocates instead an essentially goalless process of mastery where practice at a plateau becomes enjoyable in its own right until it is a habit. This is a quick and positive read. Leonard appears to have come out of the Esalen movement of the hippies and he draws heavily on Zen teachings.

Edwin A. Locke and Gary P. Latham. *A Theory of Goal Setting Task Performance.**

Englewood Cliffs, NJ: Prentice Hall, 1990. ISBN 0-13-913138-8; 412 pages; price unknown.

"The results with respect to goals and performance are quite clear: given goal commitment, feedback, self-efficacy, suitable strategies, and so on, the higher, harder, or more difficult the goal, the better the performance" (246). Exhaustive, detailed clinical research evidence building up a compact theory of the influence of goals on performance, including the collateral effects of self-esteem, task complexity, commitment, etc. Some of the surprises in Locke's theory are that there is no negative effect in setting too high goals that imposed goals are as effective as self-set goals, and that participation in goal setting probably helps by creating better understanding of the task rather than higher motivation. Straightforward presentation, but lots of references and jargon.

Charles P. Smith (Ed). Achievement-Related Motives in Children.*

New York: Russell Sage Foundation, 1969. NO ISBN; 264 pages; price unknown.

Classic collection of early research papers establishing achievement motivation as a stable personality characteristic including realistic goal setting and persistence toward success. By contrast, fear of failure, or as it was originally called, test anxiety, leads to unrealistically high or low goals and lack of persistent performance. Both are learned early in life.

2005 MANUSCRIPT REVIEW PROCESS

ive unsolicited manuscripts were considered for possible publication in the *Journal of the American College of Dentistry* during 2005. Three manuscripts were returned to their authors as being inappropriate in topic or format for the journal. Of the two sent for full review, one was accepted immediately and the other was accepted following substantial rewriting.

Ten reviews were received for the two reviewed manuscripts, an average of 5.0 per manuscript. Eighty-six percent of the reviews that expressed a clear view were consistent with the final decision regarding publication. Cramer's V statistic, a measure of consistency of ratings, was .714, showing very high consistency among reviewers. There is no way of comparing the consistency of the reviews for this journal with agreement among other publications, because it is not customary for other dental journals to report these statistics. The College feels that authors are entitled to know the consistency of the review process. The Editor also follows the practice of sharing all reviews among the reviewers as a means of improving calibration.

The Editor is aware of nine requests to reprint articles appearing in the journal and four requests to copy articles for educational use received and granted during the year.

In collaboration with the American Association of Dental Editors, the College sponsors a prize for a publication in any format presented in an AADE journal that promotes excellence, ethics, and professionalism in dentistry. Twentyseven manuscripts were nominated for consideration. The winner was an essay by Dr. Charles Bertolami, "Why our ethics curricula don't work," which appeared in the April 2004 issue of the Journal of Dental Education. Fifteen judges participated in the review process. Their names are listed among the Journal reviewers below. The Cronbach alpha for consistency among the judges was an extremely high .947.

The College thanks the following professionals for their contributions, sometimes as multiple efforts, to the dental literature as reviewers for the *Journal of the American College of Dentists* during 2005.

Marcia A. Boyd, DDS, FACD *Vancouver, BC*

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Journal of the American College of Dentists

2005 Statement of Ownership and Circulation

The *Journal of the American College of Dentists* is published quarterly by the American College of Dentists, 839J Quince Orchard Boulevard, Gaithersburg, Maryland 20878-1614. Editor: David W. Chambers, EdM, MBA, PhD.

The American College of Dentists is a nonprofit organization with no capital stock and no known bondholders, mortgages, or other security holders. The average number of readers of each issue produced during the past twelve months was 5,486, none sold through dealers or carriers, street vendors, or counter sales; 5,426 copies distributed through mail subscriptions; 5,277 total paid circulation; 149 distributed as complimentary copies. Statement filed with the U.S. Postal Service, October 18, 2005.



American College of Dentists 839J Quince Orchard Boulevard Gaithersburg, MD 20878-1614 Periodicals Postage PAID at Gaithersburg, MD