# Journal of the American College of Dentists

## Dentistry 2010:
## Visions of the Future

# Journal of the American College of Dentists

## A Publication Presenting Ideas, Advancements and Opinions in Dentistry

# Objectives of the American College of Dentists

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

A. To urge the extension and improvement of measures for the control and prevention of oral disorders;

B. To encourage qualified persons to consider a career in dentistry so that dental health services will be available to all and to urge broad preparation for such a career at all educational levels;

C. To encourage graduate studies and continuing educational efforts by dentists and auxiliaries;

D. To encourage, stimulate and promote research;

E. To improve the public understanding and appreciation of oral health service and its importance to the optimum health of the patient;

F. To encourage the free exchange of ideas and experiences in the interest of better service to the patient;

G. To cooperate with other groups for the advancement of interprofessional relationships in the interest of the public;

H. To make visible to professional persons the extent of their responsibilities to the community as well as to the field of health service and to urge the acceptance of them;

I. To encourage individuals to further these objectives, and to recognize meritorious achievements and the potentials for contributions to dental science, art, education, literature, human relations or other areas which contribute to human welfare — by conferring Fellowship in the College on those persons properly selected for such honor.

# Features

## Dentistry 2010: Visions of the Future

## Manuscripts

# Departments

# FROM THE EDITOR

## Truth-Speaking in Editorials

The common view is that editorials are the opinions of editors. If that were all there is to it, it is surprising that very many editorials are ever read. And more attention should be paid to recruiting editors than to training them. The defining characteristic of an editorial must be something more than sensitivity to readers, absence of references, addressing interesting or even controversial topics, or length. Everything published in journals today must meet some or all of these standards. There is a little bit of truth to the observation that editorials are the only part of a magazine that is written by the editor, although modern practice now encourages guest editorials and reprints of editorials from other journals.

What makes editorials a special kind of writing is their voice. It has to do with the authority from which an editor speaks and the approach he or she takes to writing. The Greek word for this voice is *parrhesia*, which means truth-speaking. The characteristics of an editorial are honesty and courage.

First let's consider several alternatives that do not qualify. The didactic voice is sometimes heard in editorials. This is the position of the teacher or the researcher who speaks from an authority based on fact. Scholarly debates, including peer review, can be brutally frank. But the customs of academic freedom confine the disagreements to the facts themselves while protecting the scholar. Although editorials need to get their facts straight, enumerating them does not add up to an editorial.

Another voice heard in editorials is that of the prophet. The prophetic future tense rings with phrases such as "it doesn't take a rocket scientist to see what will happen if we go down this path" and

> *Truth-speaking is a dangerous business. Socrates was a great editor; look what happened to him.*

"we're all going to be sorry if we let *them*...." Prophets tend to be vague and often alarmist. They also avoid responsibility for their messages; they are the instruments of revealed truth. In contemporary society the appeal to authority runs something like this: "Any reasonable individual can see the point." That pretty much cuts down the audience to the faithful few.

Many editorials are bird calls. These are vocalizations used to recognize birds of a feather. An issue is identified where the profession is strongly aligned in one direction and the editor's craft is largely to demonstrate how strongly he or she can identify with the dominant position. Editorials of this type help when the profession is in need of solidarity, but they often attack mysterious external forces rather than strengthening the profession itself. Bird calls are especially useful for editors with political aspirations.

The final false voice to be considered is the strategic editorial. In communication theory, strategy has a different meaning from its use in business. Strategic speech is manipulative; the speaker's true intent is inconsistent with the words used. There are very few totally dishonest editorials, but bits and pieces are easy to find where an opponent's view is misrepresented, facts are taken out of context, and valid alternatives are ignored.

Stephen Douglass, in their famous debates, accused Lincoln of strategic speech. He said Lincoln was two-faced. Lincoln thoughtfully pulled on his straggly beard and asked, "Do you think, Sir, if I had another face available to me I would use this one?"

Neither the didactic, prophetic, bird call, nor strategic voices speak to the collective best interests of readers from the direct prospective of the speaker. The next time you are in a meeting that is going nowhere, categorize the speeches of your colleagues. You'll find that the meeting seems to take a wrong turn after any of the false voices are used.

The true voice of the editor is *honest* in the sense of telling the truth in the most positive terms possible. We have too many dentists peddling scientifically unfounded procedures for personal gain. Divergent economic conditions of old and young practitioners are pulling the profession apart. Initial licensure examinations are superfluous. Many in the profession are complaining rather than developing positive alternatives to brokered care. The editor does not write about academic facts, utopian solutions, or "them." The editorial is about us; it is about the difference between who we really are and who we could be at our best.

The true voice of the editor is *courageous* because it depends on no authority other than the message itself. There are no pages of references generated by Medline nor allusions to revelation or being "one of the guys." Editorials are one of only two places in a journal readers can expect to see the author's signature. (The other being letters to the editor, which should follow exactly the same principles of honesty and courage.)

Truth-speaking is a dangerous business. Socrates was a great editor; look what happened to him. The moral dangers of editorship include an abusive bully pulpit or, perhaps more commonly, fear of speaking out clearly and fully. There are also practical dangers. The editor is the only one writing in a journal who can be fired for what he or she says.

With the right voice, an editorial will not be the last word on any important topic—it should be the first. Its purpose is to start a conversation. Editors must exhibit faith in the wisdom in the profession, and their role is to activate and sharpen that wisdom. Most journals with editorials also encourage letters to the editor to promote this dialogue.

The editorial philosophy of the *Journal of the American College of Dentists* was set forth in my first editorial in the Spring 1995 issue. It is a two-part mission with the first being the journal's function in identifying and debating matters of policy which affect the profession. The second part of the mission speaks directly to having conversations about such policy matters. "All readers should be challenged by the journal to pursue informed inquiry and actively participate in the formulation of public policy and personal leadership to advance the purposes and objectives of the College."

Turn on your word processors, Colleagues. The profession needs more honest and courageous voices.

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

# Letters to the Editor

Dear David,

Your editorial entitled "Form and Function in Editorials" is much appreciated. Not only do you point out the significance of editorials in dental publications but you also define the responsibility of editors. Although you have focused your attention on the length of editorials, you have issued a challenge to editors to "develop important ideas so readers can understand them..."

The guidelines for the editorial writing competition have been developed as a joint effort of the American Association of Dental Editors and the William J. Gies Foundation for the Advancement of Dentistry, Inc. and, as you have pointed out, the number of words in the editorial is one of the specifications. Periodic reviews of these rules have been made, but, perhaps, it is time for a more comprehensive review. Your editorial will hopefully elicit a healthy response.

Guidelines for editorial writing are not recent developments. A committee of the American College of Dentists published a very interesting set of standards for editorial writing in the October 1934 issue of the *Journal of the American College of Dentists*. It is much too lengthy to quote in its entirety. However, you may appreciate the following brief excerpts:

"The editor does not write for himself but with constant reference to his reader. He must use skill and judgment in establishing living contact with the mind of the reader..." and,

"Editorials are the published expressions of the opinions of an editor. It is the medium through which men have satisfied their instinct to spread ideas. The question is, how can the editorial best meet prevailing conditions—how can it successfully perform both the functions that inevitably belong to it, and its mission of satisfying the inquiring mind?"... and further,

"The reader is the editor's jury. It is not invading the field of psychology, or trespassing upon the domain of metaphysics, to say that the editor, whose heart is in his work, whose thought is concentrated upon his art, is never

for a moment separated from the multitude that he addresses. This does not mean that he must be subservient to his public."

Thank you for addressing the subject of editorial writing. Thank you for opening the door for a discussion of the guidelines for editorial writing. The many new formats of publications and the ease of word processing in this age of desktop publication have provided some new tools for editors. What is the reader's response?

Reference: Graham WC, *et al.* Editorial medal award. J Am Coll Dent 1934;1:126-30.

Sincerely yours,

*[signature]*

Gordon H. Rovelstad, DDS, MSD, PhD, FACD
President, William J. Gies Foundation

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Dear Editor:

The Summer 1996 issue of the *Journal of the American College of Dentists* was humorous (Dr. Brotman's hair borne diseases), innovative (Dr. Ferris's fresh look at initial licensure), and national in scope (Dr. Glover's article on the affect of boards of dental examiners on education and practice).

The licensure process needs to be overhauled. There is no obvious pattern of success or failure that is consistent with the academic records of United States dental school graduates, their schools of origin, or the quality of their graduate work. There appears to be no relationship between rankings in class, cumulative grade point average, dean's honor roll, and whether a dentists can successfully pass a licensure examination.[1] The test frequently fails some of the more qualified candidates.[2-5] A candidate for licensure may be an outstanding clinician and still face the prospect of failing the exam due to unforeseen and uncontrollable incidents.[6] Weak candidates often pass their licensure examinations on the first try, while honors graduates sometimes require two or

three attempts. Sometimes the failure occurs because of patient failure or illness or weather or other circumstances beyond the candidate's control.[7] Most of the candidates pass the examinations eventually, usually without additional training or experience.[8-10]

Clinical examinations as they exist now are unlikely to weed out the unqualified or incompetent practitioner.[7] A final point is that clinical boards revisit, in a superficial and unpredictable way, skills and knowledge that all U.S. dental schools already teach and examine in a far more comprehensive manner.[7,10]

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*[signature]*

Roger P. Rupp, DDS, MS, FACD
Winfield, KS

# Dentistry 2010: Visions of the Future

## Welcome address by Prem S. Sharma, DDS, MS, FACD
## President of the American College of Dentists

On behalf of the Officers and Regents of the American College of Dentists, it is indeed my privilege and pleasure to welcome all of you to Dentistry 2010: Visions of the Future. The College is pleased to have arranged and to be hosting this event which brings together representatives from all of the major constituencies of our profession.

I believe we have a truly excellent program which has been prepared with considerable input from many of you. This conference has been designed to provide a unique opportunity to gaze into the future and to help establish the course the profession should take in the next century.

So much has happened to dentistry in recent years. Declining applicant pools forced six dental schools to close while many others reduced their enrollments dramatically. The cost of dental education rose precipitously, resulting in the average indebtedness for students graduating from the nation's thirteen private schools last year being over $89,000. Federal requirements and issues related to managed care, along with new and complex disease patterns, have made the practice of dentistry most challenging.

On the other hand, dental spending has also increased, rising to over forty-two billion dollars in 1994, an increase of 6% over the previous year. Census Bureau projections state that by the year 2010 the nation's population will increase to two hundred ninety-eight million. This means there will be an additional forty million Americans requiring health care. With the ever increasing life expectancy, it is understandable that the over-sixty-five population will also increase rapidly. We can therefore expect greater demands for oral health care by a more knowledgeable and health-conscious population.

Our keynote speakers have been selected carefully. Their task is to predict where we are headed and what can be expected in the year 2010. Our speakers will give us the profession's perspective about the demographic, societal, and technological changes taking place today and anticipated in the future. But more importantly, a significant amount of time has been allocated to give all of us an opportunity for dialogue and a free exchange of ideas, concerns, and recommendations.

There are many parallels between our present professional climate and that of seventy-six years ago when the American College of Dentists was founded. Our leaders then, concerned with the issues facing the profession, decided to form an organization free of political influences and dedicated to the highest ideals for dentistry. The College was established in Boston in August of 1920 and has since played a major role in helping shape dentistry's future. Initiatives of the College and the imaginative leadership of its Fellows implemented over the years have helped make dentistry a premiere health care profession, deeply committed to the unselfish service of its patients and communities.

The present mission of the College continues to aspire to the highest ideals for dentistry through its promotion of ethics and professionalism, optimal oral health, and the enhancement of education for dentists. Additionally, the College recognizes excellence in professional and community service by conferring fellowship.

We are looking forward to the next two days with a great sense of excitement and anticipation. Thank you for joining us at this historical summit.

# Conference Report on Dentistry 2010: Visions of the Future

## Sherry Keramidas, PhD, CAE

Dentistry 2010 was a summit on the future—the first step in setting a course and embarking on a journey into the 21st century. This conference, held on July 12-14, 1996 was organized and facilitated by the American College of Dentists. However, Dentistry 2010 was a unique experience that combined learning about the trends shaping the future with a participatory visioneering effort. It was a conference for the profession, built upon the issues identified by many dental organizations and involving leaders from many areas of the dental profession and industry.

We are about to close the door on the 20th century and open a window on the future. This is both an exciting and an anxiety-producing time. Reflecting on the past one hundred years, we marvel at the advances in the basic sciences, in technology. We see the vast changes in the fabric of our society and the evolution of freedoms we share and cherish. Even looking at the past twenty years, we are awed by the explosion of knowledge and the new technology that are making science fiction ideas part of our lives.

The change of the last twenty to thirty years is responsible for much of the anxiety we feel about the future. The scope and speed of change during this time is greater than in any other period of recorded history. It's not surprising that we are, at times, overwhelmed.

*W*ith powerful changes swirling around us and demanding ever quicker responses, it often feels as though we are swimming faster and faster against a huge, unstoppable tide. And too often we are. Perhaps, like the surfer, we should use the energy of the wave to carry us forward.

— *Creating a New Civilization*
by Alvin & Heidi Toffler

The future does pose significant challenges. It also offers opportunities that will encourage us to use our knowledge and skills and will feed our curiosity. Future success will depend on a willingness to learn about what is happening around us, a willingness to critically evaluate new information and knowledge, and a desire to grow and adapt. For the dental profession, the dental industry, and the relevant organizations future success will require similar actions. Further, it will necessitate collaboration as the complexities of the 21st century cannot be managed by any group in isolation.

This conference report summarizes the information and suggestions offered during the Dentistry 2010 conference. The perspectives and recommendations are intended to provoke reflective thought about the future and to stimulate dialogue and collaborative action. There are many challenging areas awaiting the dental profession. This report is a mere stepping stone to the future.

Dr. Keramidas was Executive Director of the American College of Dentists from 1993-1996. She coordinated the Dentistry 2010 conference and prepared this conference summary. Dr. Keramidas currently is Executive Director of Regulatory Affairs Professionals Society.

# The Velocity of Change

## Adapted from the presentation by Don C. Reynolds

A simple precept for today: *The velocity of change is getting faster; the volatility of change is becoming greater.* While the specific details of the change we are experiencing are open to great debate, it is difficult to argue with the basic premise that nothing is stagnant. The changes occurring right now are shaping the world, the economy, health care, and even dentistry in ways we can not even imagine.

Among the important questions today: How do we enter the 21st century prepared for success? Can we adjust our form, style, and image and still maintain our substance and values? The answer, of course, is a qualified *yes.* However, we must acknowledge that our perceptions about the present and the future (and perhaps even the past) may not be accurate. We must be willing to adjust our line-of-sight so it matches the world today and tomorrow. Accomplishing this task requires a willingness to take a look at many different factors—to examine what is really going on. Next, we must develop a proactive strategy—you can't sit back and hope that things will return to the way they were or just ignore the advances that are taking place.

### Some Demographic Perspectives

Much has been written about the demographic shifts now taking place in the U.S. and the potential impact on all sectors. When looking at economic factors and bases of financial influence, two scenarios offer useful frames of reference.

*Puppies, Yuppies, Muppies, & Guppies.* Scientific advances have yet to produce a way to stop the aging process. We all grow older and as we do, our needs and attitudes change; there also are shifts in the distribution of wealth, in service needs and opportunities, and in the organization of our society. We are now experiencing the largest generational transfer of wealth and power in our history as the so-called World War II generation passes the baton (and an estimated $12 trillion in wealth) to the baby boomers. We are repeatedly reminded that whoever capitalizes on this flow of funds will be an important player in the financial structure of the early 21st century.

Finally, in looking at today and tomorrow, we must be cognizant of the sheer numbers and attitudes of our generations. The so-called boomers are now middle-aged (muppies) taking care of aged parents (guppies) who are living longer as well as their children (puppies). By 2010 the boomers will be on the brink of their senior years and the numbers of people over age sixty-five will reach new heights.

*The 70-70-70-70....Scenario.* While not a precise mathematical formula, the following are predictions for the next ten years:

- ❖ 70% of the nation's wealth will pass from the WWII generation to the boomers.
- ❖ 70% of new jobs will be in companies with fewer than one hundred employees.
- ❖ 70% of new jobs will come from organizations that already exist.
- ❖ 70% of jobs will be related to international trade.
- ❖ 70% of new entrants to the job market will be women and minorities.
- ❖ 70% of new jobs will not require a college education.
- ❖ 70%+ of the workforce will require retraining over the next decade.
- ❖ 70% of the nation's health care bill will be spent on people in their last year of life.

And some related estimates:

- ❖ 30% of workers will be able to work from home.
- ❖ 5% of the Gross Domestic Product will be consumed by litigation or litigation prevention.

While considering demographic predictions, it is also interesting to factor in some business and economic perspectives. Contrary to some comments, the myth of the demise of American manufacturing appears to be unfounded. Manufacturing accounts for 25% of the Gross National Product (GNP), the same level as forty years ago. However, the current level is being accomplished with only two-thirds as many employees. We also are experiencing the evolution of a two-tiered structure where industries are represented by three or four major companies, which are then serviced by hundreds of small specialized firms.

Collectively, these trends may indicate: shifts in the location of jobs, with many jobs being created in small, specialized firms; the use of "plug-in" employees who can provide skills when needed but may not be maintained for

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### The Velocity Factors

Key variables in the velocity equation and its impact on economic, market, and social changes:

- ❖ Technological advances
- ❖ Decentralization of information (information = power)
- ❖ Strong research engine to create new advances
- ❖ Continuing support of research worldwide (estimated research spending = $billion/day)
- ❖ Human resources for research advancement are strong (half of the world's scientists who ever lived are alive today.)
- ❖ Demographic changes: exchange of wealth and power
- ❖ Global economy perspectives

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the long-term; the need for retraining major segments of the workforce to take advantage of new knowledge and technology and to fit within the emerging business environment; and the strong emphasis on life-long learning by individuals in order to survive and compete in this changing world.

## Beam Me Up Scotty

Many of the science fiction technologies we saw in movies in the 1950s, '60s, '70s, and '80s are now available at your favorite store, or they will be soon. The rapid evolution of technology has produced phenomenal toys that have become mainstays of our lives. The computer/information technology industry has changed our lives; it has brought the world to our classrooms, our offices, and our homes. It has created telecommuting and cyberspace. Its fast pace has outrun regulators; it is changing the way every business and every profession will interface with its customers, the public, and its adjunct industries.

Now, we are witnessing the intermeshing of our favorite technologies—telephone, television, and computer. Add in new technological advances and we have the home/office information resource of tomorrow: a multimedia information system that is personalized, integrates many facets of our lives, and allows us to communicate and access information even more easily than today. From the professional's perspective,

technology will redefine the structure of the office, the interaction with patients and payers, staffing, and knowledge update. From the patient or public vista, technology will alter how we select health providers, what we expect when we visit a provider's facility, and our attitudes about health care and health professions.

Technology will change our lives. The lesson here: health care, like all industries, must monitor and respond to rapidly emerging technologies and consider the wide-ranging impact on clinical care as well as the financial and behavioral and social aspects of care delivery.

## Biotechnology Changing Us?

Advances in biotechnology perhaps have been as monumental as those in the information technology arena. The future implications of biotechnology may be even greater. As the information sector is reshaping all corners of our lives, the biotechnology realm has the potential to change us.

Efforts to map the human genome and to understand the genetic and cellular aspects of health and disease may soon enable us to identify individual disease predispositions and to predict health and disease risks. With this knowledge will come monumental ethical issues. Further, this knowledge will also permit "designer" approaches to prevention and treatment of disease. As we look to the long-term future, e.g., twenty plus years, we will experience large jumps in life expectancy with attendant economic and workforce issues.

## A Futurist's View of Dentistry

Looking ahead requires a careful look around you. Dentistry should reflect on the general business trends, with particular attention to value differentiation—that is, demonstrating value of goods and services for the price level. Dentistry also should carefully review what has happened to medicine. The latter view is important to understanding similarities and differences and for developing effective courses for the future.

Some differences between medicine and dentistry will be important future perspectives:

❖ Dental care is more elective than emergency based.
❖ Dental procedures are less costly than many medical/surgical treatments and may have less margin for cutting costs.
❖ The ratio of generalist to specialist in dentistry currently is about 80%:20%, as compared to about 40%:60% in medicine.
❖ There is no surplus of dentists while there is a surplus of physicians. Managed care works best with an oversupply of care providers.

The current and emerging trends offer tremendous challenge and opportunity for dentistry and clearly indicate the need for the profession to become engaged in shaping the future. Dental professionals must recognize the need to be well trained, skilled clinicians, to become smart business people, to monitor advances beyond dentistry and acquire new knowledge and skills, to integrate new knowledge into their practices and their businesses. Like the rest of our society, dentists must be prepared to be perpetual learners, to be teachable, trainable, malleable, and responsive to a changing world.

Don C. Reynolds is President of 21st Century Forecasting, a consulting firm analyzing long-term economic, demographic, and technology trends. Mr. Reynolds also serves as Chairman of the Advisory and Investment Review Boards of Texas, a $93 billion state pension and trust fund.

# Leadership in Times of Constant Change

## Terry L. Paulson, PhD

*In times of rapid change, experience could be your worst enemy.*
— J. Paul Getty

In this white knuckle decade of turmoil, managed care, and constant change, no industry can rest on past successes. The increased demands for customer service, flexibility, outcomes management, and quality coupled with the push for cost containment, government cutbacks, and increased industry consolidation produces a difficult challenge for even the best dental organizations and associations. With computers and the information highway providing new avenues of access for dentists, sites on the Internet like the Dental X Change are getting 150,000 hits per month. In such a world, industry leaders must push for a strategic, service-driven vision that will produce a compelling focus for dentistry as it moves into the 21st century. Those same leaders must possess the competency to make their vision of the future a dynamic reality. Dental industry leaders must look to create synergistic alliances with groups that will work with them to create a strategic advantage. They must also sustain their organi-zation's morale and productivity through a state of constant change and manage to keep their own sanity in the process. It's tempting to say that soon we will be through this, but instead we must embrace change as a great opportunity for ourselves and our groups. One thing is for sure, on the moving ship of change, anchors left in the water are not helpful.

*Tooth cavities are getting rarer. It's a problem for dentists.... In 1990 Americans got 151 million fillings, half as many as in 1959, while the population of dentists has doubled. What are these poor dentists to do? Like any good business people, they must develop new markets. Root canals have tripled since 1959, to 14 million. Periodontal treatments, which include removing infected parts of the gums, have more than doubled, to 17 million. Cosmetic dentistry—including bleaching and applying porcelain veneers, has suddenly turned into a growth industry.*
— Esther Wach

*Only the paranoid survive.*
— Andy Grove, Intel CEO

In response to changing economic realities, many dentists are becoming salaried employees rather than entrepreneurs. More and more established dentists are gravitating toward larger group practices to better handle the cost containment battles managed care has brought into their world. Specialists are continuing to expand treatment options while experiencing more and more turf wars. All dentists are learning an important message—become marketing-oriented or you may not survive. Dentists want medicine and dentistry to become more separated to avoid the funding problems medical professionals are fac-

ing, but it is becoming more and more difficult to do that. Oral surgeons are already switching horses and aligning themselves increasingly with the medical profession. Like physicians, dentists in the future will need to group their services to control the costs and manage the risk of dental coverage or expect to have others do it for them at a tremendous cost to the profession. Physicians are now successfully taking on insurance companies in an effort to manage their own managed care products. If dentists fail to compete in the managed care arena, they can expect medical groups to hire dentists to offer care and compete on costs.

*Graduate students...are leaving school with such high debts that repayment can eat up 12% to 25% of their incomes. The average cumulative debt now runs $64,000 for medical students, $68,000 for dental students....*
— USA Today, June 27, 1996

Dental associations will not be immune to dramatic changes. It is already evident in the data that new practitioners have less and less interest in being part of organized dentistry. The increasing costs of dental education and entering practice are economic concerns of younger members of the profession and causing them to think twice about paying high dues in order to belong to organized dentistry. Membership in professional associations is no longer a given.

In fact, time and financial constraints may cause individuals to pull out of belonging or committing to time in leadership roles.

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*I am convinced that if the rate of change inside an organization is less than the rate of change outside, the end is in sight.*
— John Welch, CEO of GE

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*I wanted Dental X Change to be a home for all dentists to return to.*
— Xerxez Calilung, http://dentalxchange.com

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*We want to think about...competition as if it's the Super Bowl. We want to play hard for the season, win the big game, and sit around during the off-season and gloat about how great we are. But the competitors we face in business today don't want to wait until next year for a rematch—they want to play again next week and every week until they finally win. It's tough for us to accept that we don't control the rules of the game anymore. We've got to be ready to battle formidable competitors everyday, forever, without a break.*
— Bill Almon

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*The thing we did that was most helpful was to visit seven or eight companies...that had done a lot of mergers and acquisitions. We sat down with their CEOs, COOs, and CFOs and asked them to share with us the things they'd done right and wrong, to see what advice they would give us. We learned a lot of lessons. One is that it's much better to be eighty percent right fast than a hundred percent right slow; make the tough decisions and get them over with. Be very honest, candid, and open, and don't try to sugarcoat the bad news; take the short-*

*term hits to do what's best for the long term.*
— Norman R. Augustine, President of Lockheed Martin

## Driving Lifelong Learning Starting with Yourself

*DenX Co. in Israel has designed a simulator for dental students that allows them to practice their profession in a scientific manner before meeting their first human patient. The DenX system includes a PC, a software package based on virtual reality technology, an extremely sensitive sensor system, a work desk, a practice dummy, and a CD-ROM that serves as a complete dental medicine encyclopedia. The system provides a close follow-up and even critiques the student's work on the dummy, correcting any mistakes in real time.*
— Technotrends Newsletter, May 1995

It won't just be new dentists who will be impacted by industry changes. There will be a constant need to upgrade skills and respond to new technology. No dentist can rest on past skills. The media will demand quality and disseminate information about advanced modalities of care before some of the profession is geared up to cope with the changes. Dentists must then become even more knowledgeable concerning new treatment approaches, patient management, systemic medications, and drug interactions as their patients get older but keep a full complement of teeth. Expect more states to mandate continuing education for licensure, but the future role of universities, academic health centers, dental schools, and associations will still come into question. There will be more use of technology for learning. New dental graduates will be more computer literate; they will not want to pay the fees or take on the debt to return to schools or even attend association events. Use of interactive video and computer-based learning systems will replace traditional textbook approaches. CE participation courses will

be offered through virtual reality simulations. Dental labs and supply houses are already becoming more involved in offering CE courses, as are the online web sites. As a result, all dentists will be less dependent upon organized dentistry to keep up-to-date with the profession. Unless organized dentistry finds ways to provide the services needed in the way professionals want to be served, it will find itself increasingly irrelevant.

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*The illiterate of the future are not those who cannot read or write, but those who cannot learn, unlearn, and relearn.*
— Alvin Toffler

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*If you already are in the "obsolete" category, surprise your manager by developing your own recovery program before he or she is forced to do it under much less favorable conditions.*
— Dave Bowman

Let's get personal. If you are not learning the skills needed to take advantage of the future, you are falling behind. In fact, the best way to survive the future is to be part of the team that invents it, but that takes people with the right skills to match the challenge. We used to be asked, "Where did you get your dental education?" as if one's education was done after completing college. Today, if you think you're finished learning, you may very well be finished working. In today's changing times, lifelong learning has become a badge of adequacy for any dentist or specialist who expects to keep up. No one can afford to put on the business-as-usual mask and whistle their way through the valley of chaotic change and expect to survive. Everyday people are proving that you can teach old dogs new tricks. In fact, they are confronting us with a new reality—you become an old dog when you stop doing new tricks. To keep others learning, top leaders need to keep learning themselves. Invest 5% of your time in training or career de-

velopment starting today. Educate yourself in skills that will help you provide the value-added services that will make a difference. Education is every professional's best investment and insurance policy.

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*One thing worse than training employees and losing them, is not training them and keeping them.*
— Dr. Ed Metcalf

## Getting Beyond the Myth of Perfection to Position, Perform, and Persist

*Take the notion of "zero defects." Yes, it has stimulated major improvements and efficiencies. But it also can create a fearful, risk-averse environment where people take safe avenues and play games to cover up errors. Furthermore, since zero defects cannot routinely apply to new products, services, and processes, the concept can encourage people to stay with what they know.*
— Patricia McLagan

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*Senior managers try to be explicit about our vulnerability and failings. We talk to people about the bad decisions we've made. It demystifies senior management and removes the stigma traditionally associated with taking risks. We also talk about the limitations of our knowledge, mostly by inviting other people's perspectives.*
— Robert D. Haas,
Levi Strauss & Co. CEO

The only place where totally perfect people exist is in educational movies, but the pursuit of perfection in providing quality dental services is a goal everyone must embrace to survive. The only person you really control is yourself, and even that is in question on Mondays. Results are a function of performance plus luck (all the factors outside our control). Even with authority, we do not "control" others; we "influence" them. The only

person we really control is ourselves. We can increase our probability of good luck through process management and by positioning ourselves and our people for opportunity. We need to minimize disasters and keep them away from customers. We need to push for quality in the midst of happy accidents. With effective leadership no team can settle for super results; we must go beyond complacency to push for new positioning and training. With heroic efforts learn to support your team; be frustrated "along with" not "at" others.

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*The only man I know who behaves sensibly is my tailor; he takes my measures anew each time he sees me. The rest go on with their old measurements and expect me to fit them.*
— George Bernard Shaw

## Driving the Targeted Vision, Values, and Mission

*Creative tension comes from seeing clearly where we want to be, our "vision," and telling the truth about where we are, our "current reality." The gap between the two generates a natural tension. Without vision there is no creative tension. Creative tension cannot be generated from current reality alone. All the analysis in the world will never generate a vision. Many who are qualified to lead fail to do so because they try to substitute analysis for vision. What they never grasp is that the natural energy for changing reality comes from holding a picture of what might be that is more important to people than what is.*
— Peter M. Senge,
MIT Sloan School of Management

Paint an honest picture of present reality to move from anxiety to fear. Once you have the attention of your people, build a compelling vision of where we want to be to generate hope in a profitable and purposeful future. Prudence

and the trust that results from mission-centered leadership is a fragile asset. It takes every leader daring to face reality and the obstacles he or she will need to overcome while still building a compelling vision that inspires all involved. Such a vision is not only important to the professionals involved; it is important in sustaining the leader's own motivation for the journey.

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*A change facilitator provides... multiple paths. They keep five or six streams running and make sure new streams come along so that branching continues. A change facilitator is someone who is looking not for closings but for openings. We can't control change. That's not the issue anymore. It is managing the ride, rolling with the flow. That is very different from where we've been and not a place where we are comfortable. It involves a lot of risk.*
— Gloria Regalbuto,
William M. Mercer Inc.

Leave room in your vision for flexible, strategic changes. Capture success where you find it, fan team enthusiasm and motivation by giving them the attention they deserve and then share the impact of the team's success with others who do not yet believe in the importance of strategic change! What are you doing to expose examples about where change is working in the dental profession?

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*The first and last task of a leader is to keep hope alive.*
— John W. Gardner

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*If you're not serving the customer, you'd better be serving someone who is.*
— Jan Carlzon,
President of SAS

Good leaders inspire people! They are consistently, but constructively, corny! They find a hundred unique, en-

ergizing ways to make their vision live in the minds of their people. What do you do to keep the message of strategic change fresh and exciting in your organization?

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*Tell the truth. When people try to inspire employee commitment, they tend to sugar-coat harsh reality. It's better to tell the truth. Yes, it is difficult to tell employees that you'll probably be short-staffed indefinitely, that promotions are unlikely, and that overtime may be the norm for awhile. Doing so creates the possibility for partnership and true commitment.*
— Ken Macher

Trust and integrity are back in! Trust is a fragile commodity that is important to maintain, easy to lose, and hard to win back. Communicate in good faith. We like working for leaders who have a positive vision of the future and an honest assessment of what obstacles we will have to overcome to get there.

## Focusing on Priority—Being Tight and Loose

*I want to make this plant "inefficient." I want to make it profitable. We thought of our factory as an efficiency machine. We had to see it as a profit center—to focus on opportunities for sales, rather than problems of cost. People expected to be judged on their own efficiency, on their process in isolation, apart from whether it made us money. I told them to think like baseball players. You never saw George Brett walk off the field a winner while the rest of the Royals lost. That's the goal in a nutshell.*
— Martha Roberts,
Plant Manager of Premark's
Food Equipment Group

Enthusiasm for quality dental care is important, but enthusiasm without focus can be costly. Such misdirected passion can take time and resources away from making a needed difference to a customer that you must serve. Doing one's

best is only important if it's something a customer wants. What are you doing to keep your organization's efforts focused on customer-driven needs not "right way" reverence?

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*Do what you can, with what you have, where you are.*
— Theodore Roosevelt

Develop a Team Scrounger Mentality. Keep all team members working smart on real priorities and stress early problem solving when there is too much to do. Expect every member of the team to honor the call for "no surprises." Stress the need to take initiative and "buying tickets" to keep team members in their peak productivity zone. Use the four X's Rule: For every unit of time you may be late, give four times the warning to other team members. When inadequate resources exist and significant work is not being done, be a professional pest in communicating your need up the organization. Teams must work together to find the best ways to use limited organizational resources. Be tight where you need to be tight and loose where you need to put resources for significant growth to occur.

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*Lack of planning on your part does not constitute a crisis on my part.*
— Sign used by Peter Ueberroth during the 1984 Olympics

## The Empowerment Advantage: Information and Limits

*I hate bosses who distance themselves from people. We have no secrets here. So what if information gets to the competition? The organization can only be as good as the amount of information shared among people.*
— Karl Krapek,
President of Otis Elevator Co.

Share information freely and as early as possible. Without information there is no empowerment. Treat information and

facts as friends and let others involved get to know your friends. That which will eventually be revealed should be immediately revealed to allow early course-corrections and effective team brainstorming. What information you consistently ask for you will get; be persistent and focused on information that will make a difference in your team efforts. What gets measured and looked at gets done. True facts and financial controls are liberating. They let people focus on the winning activities that make a difference on their mission and their bottom line.

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*Our management system is based on the premise that business is essentially a game—one, moreover, that almost anyone can learn to play. As with most games, however, people won't bother to learn it unless they get it. That means, first, they must understand the rules; second, they must receive enough information to let them follow the action; and third, they must have the opportunity to win or lose. That's exactly how this company is run. From top to bottom, people in this company really do understand what the business is about.*
— Bo Burlingham

Empowerment should be freedom within limits. Give adequate thought to boundaries. Where are the limits to team empowerment? Make a consistent attempt to confront problems constructively and early whether addressing patients, staff, or dentists. You never avoid or eliminate friction; you learn to use it. Use less blame and more problem solving. Don't let controls choke or strangle; let the controls help empower teams by focusing their time and resources within the boundaries where they can win and win big.

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*People in every nook and cranny of the organization are empowered—encouraged in fact—to do things their way. Suggestions are actively sought. But this all takes*

*place within a context of direction. People know what the boundaries are; they know where they should act on their own and where not. The boss knows that his or her job is to establish boundries, and then truly get out of the way.*
— Robert H. Waterman

The dental profession faces a difficult challenge. The push for credible dental outcomes data supported by scientifically valid information will improve the quality of care but will also increase the use of litigation to address poor quality outcomes. As a result, the profession will increasingly be guided by diagnostic codes and parameters of care to avoid legal problems and maximize their effectiveness.

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*It's not cookbook medicine, but it tells you what we've identified as being the best clinical practice by our own hospital physicians with the benefit of local and national data. Physicians were told that they didn't have to follow the pathway, but that it was going to become the standard of care and if they diverted from that standard and their outcome was not good, they'd better be able to justify why they weren't on the same track. No one was coerced. It was all voluntary. But, believe it or not, if you tell doctors the best way to do something, they don't suddenly decide to become bad doctors and not practice the best medicine they can.*
— Robert J. Stub, M.D.,
The Christ Hospital in Cincinnati

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*I can't stand this proliferation of paperwork. It's useless to fight the forms. You've got to kill the people producing them.*
— Vladimir Kabaidze,
General Director of the
Ivanovo Machine Building Works, Moscow

## How to Honor, Surface, Support, and Use Resistance

*In an empowered organization there are bound to be a lot more disagreements. Because we value open and direct communication, we give people permission to disagree.*
— Robert D. Haas,
Levi Strauss & Co. CEO

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*People ask about skeptics, and it's always in a negative way. But I think the skeptics help bring the champions back to reality. I need that. I can get off of a target very quickly.*
— Charles Caldwell

Resistance is the tendency to avoid what is not wanted from the world. In our changing field, resistance goes with the territory. Most decisions that bring about changes are seldom black and white—they are more or less workable. Attempts at threatening, silencing, or otherwise avoiding criticism of change will only force the resistance underground and increase the likelihood of sabotaging even good changes. Don't keep those who resist industry changes vulnerable; honor their input to get resistance into the open. Resistance helps build clarity of vision and purpose. It doesn't have to be just digging in the heels and failing to move on. Resistance can provide a process of thinking critically around the question of "How can we improve...?" What have you learned positively from resistance in your organization? Keep a future focus to your discussion and take time to probe for specifics. This process will often result in adjustments to a planned change that will accommodate the input of others while making the overall change more workable. Not only will you have a better idea, you will have the motivation of the people involved. If criticism is extensive and continues even after facing it, it may not be resistance—they may be right. Every improvement is the result of change, but not every change is an improvement. Don't put good time into unworkable changes. Some rat holes should be abandoned.

Use resistance to test changes early. Be able to let bad ideas die, and be thankful you found out early.

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*We found that 70% of American workers are afraid to speak up with suggestions or to ask for clarification.*
— Joshua Hammond,
President of AQF

Aren't you glad that there are other organizations that need to read this? As usual, the hardest practice to look at is your own. If you do not train people to be able to disagree, ask questions, and push for wild, far out, even wacko ideas, they will play it safe. People do what they are rewarded for, which is usually to follow form. What are you doing to buffer the group's immune system that attacks radical ideas and unsettling questions?

## Bridge Building Strategies to Make Teams Work

*We teach collaborative problem-solving. In school that's called cheating.*
— Edward Bales,
Motorola University

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*I don't like that man. I'm going to have to get to know him better.*
— Abraham Lincoln

Collaboration among the practicing, education, research, and corporate communities will become increasingly important. Empowered leadership requires people who can bridge out of their comfortable relationships to sustain morale with all the people necessary to make change work. It's a leader's job to break down barriers between organizations and teams. They must make a conscious effort to nurture bonds with all the key people they must work with externally and internally. In winning medical groups, leaders are bridge builders who are masters in the motivation and coalition building arena.

Invest time in building attitude, morale, and motivation within your practice and across your emerging alliances. Put your calendar where your mouth is. Do your part to create a culture of pride that recognizes the effectiveness of others who make changes possible. Take the time to recognize and formally acknowledge your staff, other dentists, and key suppliers. Research shows that to be perceived as a supportive manager, leaders need a four-to-one positive-to-negative contact history. Most leaders achieve that only with people they enjoy; effective leaders bridge across lines to make diversity and coalitions work. If it needs to be four-to-one when someone reports to you, imagine what is necessary when you have no authority. There are no clear data, but it appears that the less authority you have in a relationship the more you are in sales. Sales professionals are master bridge builders who earn the right to be heard. Today's leaders must be able to do the same thing to build the alliances necessary to survive.

Effective leaders give credit and take more than their share of the blame. Imagine every team member has on his chest a sign that reads, "Make me feel important!" Give timely, specific recognition, and ask for assistance from others in the areas that you respect and trust their skills. When the awards come, keep your team on the victory stand. Bask in their glow instead of trying to steal the spotlight for yourself. Tomorrow's exceptional leaders are seen in the effectiveness of their people.

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*My first message is: Listen, listen, listen to the people who do the work.*
*— H. Ross Perot*

Listening is one of the most important skills effective leaders possess. Effective leaders use the facilitating verbal and non-verbal skills necessary to generating enthusiasm for needed change. Invest time in maintaining the listening advantage. Don't just wait for people to come to you; take the initiative to seek out time with your teams and associates. If you don't seem to find time to listen or it's not a habit that comes easy to you, build in a schedule of regular one-on-one sessions with each member of your team. Take time to develop your own regular town meetings. Take the time to master questions that will sustain needed changes and keep your organization focused on what they can do to make your organization's vision of the future a reality.

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*Every person I work with knows something better than me. My job is to listen long enough to find it and use it.*
*— Jack Nichols*

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*Our role as leaders is not to catch people doing things wrong but to create an environment in which people can become heroes.*
*— Newt Hardie, VP at Milliken*

## Know How to Make Humor Work for You and Your Team

*If you aren't having fun in your work, fix the problem before it becomes serious; ask for help if you need it. If you can't fix it and won't ask for help, please go away before you spoil the fun for the rest of us.*
*— Russ Walden*

Know how to keep work fun. Don't walk the halls with your face "in park" unless you want to start rumors of cutbacks. Take your job and mission seriously, but yourself lightly! The safest target for your humor is always yourself; making fun of your own mistakes helps make you approachable and open to other ideas. Don't hide your sense of humor; use it for fun and profit! Humorous yet insightful stories allow you to energize your team, make your point, and provide a memory hook to aid retention. In a world of increased competition, tight people are not creative or productive. Challenge for excellence, but keep it light. Never forget that some days you're the bug, and some days you're the windshield. That's a perspective that is worth remembering as we journey into the next century and face the changes that are sure to occur.

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[Editor's note: This book was summarized as part of the Leadership column in the Spring 1995 issue of the *Journal of the American College of Dentists*. It can be obtained by writing the ACD Foundation and making a donation of $15.]

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[Editor's note: Summarized as with Burrus book listed above.]

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# Technology Perspectives for Dentistry

## The following was developed from the presentation by S. Timothy Rose, DDS, FACD

Information technology is a major contributor to the changes being experienced in most sectors of society. Many individuals, professions, and institutions are coming to realize that information is a commodity with tremendous value. Information is power and it will be an important base for development and negotiation in the future. To be successful dentistry must appreciate this view.

Tom Peters is credited with the statement, "Crazy times call for crazy organizations." It may be appropriate for the dental profession and industry to look toward crazy configurations building alliances to address the challenges and opportunities arising from the information technology arena, and to answer vital questions such as what information do we need and what do we do with the data we amass?

> **W**hile computers have been part of the dental office practice management component, the key to the future will be the computer located in the operatory.

### An Information Age Metamorphosis

New technological tools, the potential for standardizing, sharing, and integrating information may produce discomfort for some individuals in dentistry. In fact, technology may spur a transformation in the nature of dental practice, moving from single practices to group practices and even virtual group practices. However, this change will enhance sharing of knowledge and information; it will help to streamline administrative procedures; it will allow dentistry to develop much-needed outcomes data.

The new dental group may not be housed in the same location. They may, in fact, be a virtual group, physically separated, but sharing resources and information. Patient and practice information will be rapidly transmitted to central servers and storage devices. A dentist at one participating site may be able to transmit information on a patient to a colleague for instantaneous input, while the patient is in the chair. Information also will be directly transferred to practice management software. Practice management staff can be shared among the group. The end result will be a reduction in redundant functions and error, an increase in staff efficiency, and improvement in administrative costs.

While computers have been part of the dental office practice management component, the key to the future will be the computer located in the operatory. This resource will be used to record patient history, diagnosis, to generate a treatment plan that may check available databases, and then to link with practice management databases in the office. The computerized oral health record (COHR) is a central part of this new configuration.

### Computerized Oral Health Record

The COHR will become the standard tool for clinical information, encompassing general modules and sections specific to specialty practices. It is designed to integrate with other documents, also computer generated, for notes, referrals, etc. Further, the COHR is being developed to integrate with a general patient health record. (Also see *Journal of the American College of Dentists,* Fall, 1995 for a description of the COHR.)

> **W**hile integrating information technology into dental practice will offer some challenges, these are outweighed by the potential future benefits.

The COHR is structured on object-oriented architecture. This means that one module can easily fit with another module. These, in turn, can be linked, customized, expanded, and updated. This offers the flexibility to grow and adapt to future technology.

An important aspect of establishing the COHR system is developing a glossary of standard terms. This effort, coordinated by the American Dental Association, will eventually include diagnostic

and procedural codes. Thus, the glossary will ultimately include information relevant to patients' characteristics, disease processes, diagnosis, and procedures. In addition to its obvious uses, the COHR will be a vital building block for collecting the data needed to develop appropriate outcomes measures.

## Implications for the Future

While integrating information technology into dental practice will offer some challenges, these are outweighed by the potential future benefits. The development of a standard COHR and associated diagnostic and procedural coding systems, together with the hardware and software to support effective sharing of data, will allow dentistry to undertake high quality outcome and effectiveness studies. Dentistry will have the data to clearly support the consistent delivery of quality, effective care. Clinicians will have information accessible in the operatory to aid in diagnosis and clinical decision-making. Further, the technology will provide tools to better manage administrative costs.

This comprehensive information network also will facilitate peer review. This notion will scare some clinicians and may even drive them away from technology. However, the profession and patients will ultimately benefit.

There are still many challenges and unanswered questions before dentistry really becomes part of the information age. Who owns the data? How can information be used to build a national network? What are the implications of the new technology for continuing education and professional communication? How will the profession effectively use the technology for peer review?

The answers to these and many other questions await the collective thinking and response of the profession.

Timothy Rose, DDS is the Ninth District Trustee of the American Dental Association and Vice President of the American Academy of Periodontology. He is in full-time periodontal practice in Wisconsin. Dr. Rose has been active in ADA and AAP initiatives related to information technology.

# The Changing Nature of Dental Consumers and the Dental Team

### Adapted from the presentation
### by Linda Niessen, DMD, MPH, MPP, FACD

Reflecting over the past twenty to thirty years gives a view of the degree and pace of change affecting dentistry. New knowledge has reinforced the need for the dentist as a continual learner. The composition of the dental professional workforce has changed as more women and minorities entered dentistry. These changes will remain a strong, continuing trend. Further, the nature of "consumers" of dentistry is undergoing transformation.

Changes in the demographics and expectations of society and changing patterns of oral diseases reinforce the notion that dentistry is moving from a product orientation to a service profession. For many years, dentistry's key product was of a restorative nature. The profession must move into a new mindset that offers "products" but focuses on the service delivery. Dentistry can learn much by looking around at other highly successful service firms which emphasize service delivery. These companies are serving the same consumers who seek oral health care; increasingly, these consumers expect the same quality service from health care as they do from other service sectors.

The sections below summarize some key characteristics of consumers and the dental team of tomorrow, as identified during an interactive session with conference participants.

## The Dental Consumer of Today and Tomorrow

The dental consumers of tomorrow will reflect the changing demographic profile in the U.S., with a large number of aging baby boomers and a greater ethnic mix. Key characteristics of dental patients include:

*Aging population—general*

○ Fewer new caries, more root surface caries

○ More teeth retained due to prior care

○ More chronic illness and multiple disease problems

○ Risk for oral disease elevated by medical conditions and medications

○ Disposition to keep teeth

*Baby boomers and their children and grandchildren*

○ Better educated with access to wide range of information through computer networks

○ Greater financial resources (although spending directed toward non-health items)

○ Demanding and questioning; want information; seek second opinions

○ Expect to be part of treatment planning, decision making
○ Expect value and service

○ Will shop around

○ Decisions made on self image and comfort and on insurance coverage

○ Influenced by media

*Diversity of population*

○ Diverse attitudes toward health, health care, and health team members

○ Variation in priorities for using financial resources

○ Many racial, ethnic, and cultural groups seek dental professionals from similar backgrounds

○ Language and communication issues

○ Variations in health and disease patterns

## The New Dental Team

The dental team of tomorrow must be culturally sensitive, service-oriented, and able to respond to the needs and concerns of the population. Some perspec-

tives offered by conference participants on the future dental team are summarized below:

○ Incorporate service orientation when delivering patient care

○ Must understand and respond to consumers' values

○ May be more involved in offering information on other health and related concerns of their patients

○ Must be culturally sensitive and responsive to diversity and diverse values of population

○ Involve consumers in decision-making

○ Must be information savvy and aware of information resources available to consumers

○ More actively involved in educating consumers on link between oral health and general health and range of oral health services

○ Able to effectively interact with media to convey information

○ All members of the team must be continual learners

○ The team should reflect the racial, ethnic, and cultural characteristics of the population

○ All members of the team must become service sensitive and service responsive (training will be needed in this area)

○ There are likely to be shortages of personnel in the future as the impact of decreased dental school enrollment and retirement is felt.

Dr. Linda Niessen is Professor and Chair of the Department of Public Health Sciences at the Baylor College of Dentistry, a member of the Texas A&M University system. She also is on the staff at the VA Medical Center in Dallas. Dr. Niessen is President of the American Board of Dental Public Health and Past-President of the American Association of Public Health Dentists and American Association of Women Dentists. Dr. Niessen hosts a weekly television news report on dental issues for consumers.

# A Clinician's Perspectives on the Future

## Adapted from the presentation by Carlos Interian, DMD, FACD

Dentistry will be affected by the fast-paced, interconnected world around us. However, the profession also has an opportunity to shape its future and to position dentistry as a responsive and progressive profession.

### Economics versus Healing Arts

The economics of dentistry is a dominant theme in many circles today. Costs and financing of health services, including dentistry, the economics of various practice models, debt repayment, and income issues are discussed among economists, business people, the health industry, the professional organizations and individual clinicians. While economic issues are important, the dental profession tends to overlook a very vital view— dentistry, like other clinical fields, is supposed to be a healing art. Does the emphasis on finances distract the profession from a critical focus on quality of care and the needs and concerns of patients?

Some projections indicate that 90% of health care will be delivered through so-called managed care approaches. Although specifics of the managed care model may change in the future, we can predict that the health care arena will be market (financially) driven. Dentistry will not be immune to these trends and perhaps now is the time to actively consider what this will mean to the profession and to oral health. Further, careful assessment of the trends of today and tomorrow will allow dentistry to have better control of its own future.

When dentistry looks at the events shaping medicine there often is a reaction, "This won't happen to us, we are different." The financial incentives underlying health care delivery today may not see dentistry in quite the same way. Thus, there is real value in looking at other segments of health care, even if this may be an unpleasant experience, in determining what is unavoidable and what can be shaped through proactive effort.

### The Impact of Technology and Research Advances

Research will open new horizons in general health and care delivery, oral health and dentistry. New information is rein-

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*. . . there is real value in looking at other segments of health care, even if this may be an unpleasant experience, in determining what is unavoidable and what can be shaped through proactive effort.*

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forcing the need for health professionals to continually update and broaden their knowledge. The dental professional of the future must be able to understand and integrate advances from areas such as genetics and cell biology, infectious diseases, and pharmacology.

Information technology also will open new horizons. Administrative procedures will be streamlined and handled online. Information will be easily accessible. The dental professional will be able to access detailed patient information as well as the latest information on treatment methods.

Research and information technology pose several intriguing challenges for the dental profession:

❑ Can we prepare dental professionals to be critical thinkers and to effectively use and integrate new research information? Dental schools have done an excellent job preparing clinicians with excellent technical skills. However, the profession has not done as well in preparing the dentist to be a critical thinker and a information seeker.

❑ The research and technology arena will reinforce development and use of outcomes data. Is dentistry prepared to develop outcomes measures?

❑ How will the profession use outcome measures? How will dentistry respond to the accountability issues that will arise with outcomes measures?

❑ Is dentistry prepared to "police" itself? Information technology and database development and access will

enhance the ability to identify incompetent and unethical practitioners. Is the profession prepared to address this issue before other agencies develop guidelines?

☐ What will be the impact on continuing education, continued competency assessment, and related licensing issues? Advances in knowledge will place new demands on continuing education and there will be a greater need to determine if information is effectively integrated into clinical practice.

## Changing Demographics

The demographic profile of the U.S. is shifting relative to age distributions and ethnic composition. These changes will affect oral health and the dental profession in many ways, including status and needs of patients, access and financing, health attitudes and behavior, and the composition of the dental workforce.

Presently, there are no accurate and reliable models for examining the need and demand for dental services and for projecting the dental workforce to respond to this need. An important first step for the profession might be to develop models and then to begin a careful examination of future scenarios. A look to the future must factor in advances in technology and knowledge, financial perspectives, and projected workforce composition shifts.

## Challenges of the Future

The future holds both challenge and opportunity. Amid a rapidly changing world, it is important to consider what change is needed and desirable, and what change threatens our core values. The dental profession must carefully examine its values and its limitations. The profession cannot remain frozen in place. Complacency may lead to challenges from other professionals, including physicians, who are willing respond to the opportunities of the day.

The leaders of dentistry have an opportunity to look around and to look ahead. It is a time to assess where we are and where we want to be; to create a vision and shape the future.

Dr. Carlos Interian has practiced general dentistry in Miami, Florida, since graduating from the University of Florida College of Dentistry in 1986. Dr. Interian has been active in dental organizations at the local, state, and national level including several committees addressing issues of the young clinician and women and minority practitioners. He also was a member of National Academy of Sciences Institute of Medicine Committee on the Future of Dental Education.

# Linking Research and Practice

## Adapted from the presentation by Harold Slavkin, DDS, FACD

What will dentistry be in 2010? This question creates a certain angst that perhaps comes with living on the transition between centuries. Dentistry underwent a major evolution in the 20th century due, in large part, to the movement of dental education from free-standing and often proprietary schools to an integral unit within research intensive universities. The profession flourished with the explosion of knowledge in basic and clinical disciplines which gave a strong scientific base for diagnosis, treatment, and prevention.

### Looking Back and Looking Forward

In 1940, the U.S. was not a super power. A dental discussion would have focused on caries; there would be no mention of osteoporosis, oral health in Alzheimer's disease, or other problems of the elderly, partly based on an average life expectancy of about fifty-five years. Today, the U.S. spends more on biomedical research than all other countries combined. We have conquered some diseases and have begun to unravel the mysteries of many others. In other realms, one million people move intercontinentally each day; we can communicate with people worldwide for very little expense and we can access information from libraries nearly anywhere. Today, we can look back and see what was seen before and also see what was never seen before this era.

It is impossible to predict everything that lies ahead. However, we can't be satisfied that our past gains will guarantee future success. We must be able to show "what we have done lately." Research will continue to provide new information to shape health and clinical care. However, as we live longer we will see more complex problems and clinical challenges and the public's expectations about health care will push the envelope of the system. Oral health must be an integral part of the health perspective and the health related system.

### Future Opportunities

Clinical dentistry will continue to evolve in the 21st century; changes will help to further integrate dental practice into comprehensive health care; enable the

> *. . . as we live longer we will see more complex problems and clinical challenges and the public's expectations about health care will push the envelope of the system.*

profession to become even more proactive in overall health promotion; build an increased knowledge base for diagnostics and therapeutics; and encourage the profession to develop and apply novel strategies for oral health care. This, in turn, will reinforce the need for a very knowledgeable profession, that promotes continual learning and then applies this knowledge to effective service delivery with appropriate reimbursement. Further, the future offers opportunities for the American dentist to expand the scope of duties and service to the public. Conversely, failure to look to new opportunities may reduce the status of dentistry as a profession.

### Future Opportunities

- Basic, translational, clinical research involvement
- Health promotion
- Disease prevention
- Diagnostics and therapeutics
- Involvement with related diseases
- Osteoarthritis
- Osteoporosis
- Craniofacial disorders
- Emerging and re-emerging infectious diseases
- Neoplastic disease
- Chronic disabling diseases
- Behavioral change

The professional of 2010 will be challenged to enhance knowledge and to explore ways to apply new information. Knowledge-based decision making and participation in expanding the information database will also be critical functions. This will require appropriate use of time and effective use of the dental team.

Building the future will require an open mind and flexibility among the profession and its current leaders. It will demand a commitment to preparing the professionals of next century for their clinical and intellectual responsibilities and a plan for grooming young professionals for their vital leadership role.

The prospect of the 21st century can be a time to celebrate the possibilities, to become proactive, and to create a future for oral health that continues the proud traditions dentistry has already created.

Dr. Harold Slavkin is the sixth Director of the National Institute of Dental Research at the National Institutes of Health. He previously directed the Center for Craniofacial Biology at the University of Southern California School of Dentistry. Dr. Slavkin is a Past-President of the American Association for Dental Research. Dr. Slavkin also has been instrumental in establishing programs to strengthen pre-college and college science education.

# Dental Visioneering

Visioneering is one of the new terms applied to looking to the future. Although there is no agreed-upon definition, the term takes the definition of vision—unusual competence in perception or discernment; intelligent foresight; a mental image produced by imagination—and adds an element of active participation and understanding in shaping the future. Dentistry 2010 brought together leaders from dentistry to initiate visioneering; Dentistry 2010 was a starting point and not an end point.

Visioneering exercises were undertaken in small, highly participatory groups. Each group focused on an issue area developed from key issues submitted by several national dental organizations. Groups worked individually and collaboratively, on cross-cutting perspectives, to develop a preliminary framework for dialogue on the future of dentistry.

## Basic Perspectives and Assumptions

An important underlying base for visioneering is the need to look to the future from the perspective of dentistry, including the work of dentists, hygienists, dental assistants, manufacturers and distributors, laboratories, insurance companies, and professional organizations. The complexities of the present and the prospects for the future indicate that no single group will shape the future alone. Success, in fact, will be more likely when there are strong partnerships. Other basic assumptions include:

❖ The look to the future should be based on the perspective of the profession and society. Individual and organizational perspectives don't count at this stage.

❖ Future strategies flow from a vision but are not the starting point, i.e., visioneering shouldn't be used to merely justify a favorite program or issue.

❖ Visioneering, and its closely associated strategic planning, is about planned change.

❖ Any type of change produces tension. A certain level of tension is beneficial as it can lead to constructive dialogue.

## Laying A Groundwork

The future of dentistry and oral health will be directly affected by many factors highlighted by the conference speakers and reinforced in the issues submitted by national dental organizations prior to the conference. Among the key issues were:

❖ Technology will continue to advance at a rapid pace and will profoundly affect dentistry and society.

❖ Issues related to access to information, privacy, and confidentiality of patient and provider information will pose dilemmas for the future.

❖ Dentistry will be significantly shaped by its own information tools, e.g., COHR, diagnostic and procedural codes. Issues about who owns and controls the data must be actively and openly discussed.

❖ Technology will redefine dental practice as the model moves to virtual group practices where some members of the group are physically distanced but still share resources.

❖ The profession and the industry must take responsibility for using information tools for effective peer review.

❖ Information technology will reinforce the importance of outcomes and effectiveness measures. Dentistry will be expected to have good information.

❖ The dental team must become continual learners.

❖ Continuing education will take on new forms, in part building on technology.

❖ Oral health care will take on many characteristics seen in other service industries.

❖ Consumers of oral health services will be more demanding and less loyal.

❖ Consumer decisions will be driven by finances, aesthetics, and comfort.

❖ The changing demographics of the U.S. population will have a major impact on dental services and on the human resources of the dental industry.

❖ The dental team will need to be an integral part of the health care team.

❖ It is imperative to reinforce the relationship between oral health and total health with the public and through effective use of the media.

Participants also identified key areas of tension as they looked to the future:

❖ Decision-making in times of rapid change may be based on incomplete information.

❖ Rapid change and differing viewpoints may lead to more fragmentation.

❖ The changing role of the dental team.

❖ How to "position" dentistry relative to medicine.

❖ Licensure and continuing competency.

❖ Managed care and other financing issues, with the prospect of creating levels of care.

Visioneering exercises—looking to the future and identifying key challenges and potential directions—was undertaken by participants working in one of eight working groups: A. finance/economics; B. oral health related research; C. dental education; D. societal and patient trends; E. general health systems; F. human resources in dentistry; G. general issues in dentistry.

Key issues and suggestions offered by the working groups are summarized in the following brief reports.

## A. Financial/Economic Perspectives

Finances will be a driving force in society, health care, and dentistry. The need to understand financial and economic forces and their impact will be vital for the dental industry for the coming decades. This working group identified two strong forces that perhaps will pose the greatest challenges for dentistry: managed care and the cost of dental education.

The working group recognized that so-called managed care programs are likely to continue into the future, although their label and their approach

may change slightly. The group also concluded that little could be done to stop these efforts in general. Employers and consumers will continue to seek ways to lower the proportion of expenses allocated to health care; they will seek value and they will "shop" for perceived bargains. Dentistry, however, can become even more effective in informing consumers and health plan purchasers of unique aspect of oral health care services

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### Types of Change
(*Adapted from the comments of visioneering session facilitator Aldonna Ambler*)

**Developmental** — Can't control the pace, e.g., child learning to walk, technology. Role of leaders is to create supportive environment, to encourage, minimize fear, and act as cheerleaders.

**Transitional** — Characterized by steps with associated deadline and ultimate goal. Steps include problem identification, research, design, implementation, evaluation.

**Transformational** — Life shaping events. Vision driven and directly and often profoundly affects decision-making and future actions.

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and the ultimate benefits of appropriate care. Similarly, the profession must be able to appropriately explain the cost elements within its fee structures and the implications of typical managed care coverage approaches.

While there is a need to educate the public, purchasers, the government, and even the dental industry on the differences between medical and dental economics, there is an equally strong need for the profession to assess its business practices and approaches and to effectively manage this element of clinical practice. Similarly, there is a rapidly

growing need to demonstrate the outcomes of care with solid data. Other important research efforts may explore the effectiveness of various models of oral health care. The latter research areas should be even more feasible in the near future with introduction of new information tools and technology.

The cost of dental education, and its impact on the profession and society, will continue to be an important financial issue. Technological advances and the potential impact on higher education institutions may create new opportunities for dental education to explore approaches such as the virtual dental school, faculty sharing, and effective use of the clinical practice community. This also may be an appropriate time for the profession and the dental industry to build a strong education endowment to ensure the future of dental education and the industry.

## B. Dental Research

Research relevant to oral health and the dental industry will be a vital base for the future. The opportunities for investigative studies will extend across the research spectrum and are likely to blend clinical issues with advances in knowledge and technology.

The biomedical research spectrum includes basic, translational, applied, outcomes, and demonstration studies and clinical practice. The working group conceptualizes these steps as a temporarily or logically ordered sequence, beginning with basic research. The oral health research thrust ultimately should promote health and prevent disease and support diagnosis, therapeutics, or treatment.

Research opportunities relevant to oral health and dentistry will exist in several areas. The working group identified two general areas of research focus, with related research disciplines as holding great promise for the next decade as the following: In biotechnology—molecular biology, genetics, nanotechnology, and bioinformatics; in biomaterials—biomaterials and biomimetrics; and in other areas—nutrition, health services research,

delivery system studies, biometrics, epidemiology, ethics of research, and robotics.

The working group also reinforced the need for developing effective ways to stimulate the transfer of technology and information among the research and clinical communities. Such efforts must be built with the involvement of scientists and clinicians.

Finally, the group recognized barriers that may impede research progress and which must be addressed by other groups. These include availability of research funding, lack of human resources to undertake studies, conflicting research priorities among various scientific and industry-related organizations, time constraints.

## C. Dental Education

Professional education and continued learning are building blocks for the future. However, like most things today the composition of these areas is undergoing change. The working group in dental education examined needs and issues from the level of the dental school through continuing education.

## D. Societal and Patient Trends

The working group addressing societal/consumer trends focused on several perspectives highlighted in key presentations: the aging of the U.S. population, and especially the aging baby boomers; the diversity of the population; and the movement among consumers to seek value in all services.

The demographic changes in the U.S., including the diversity and age shifts, will offer great challenges in patient education and prevention. There will be a growing need to introduce new and appropriate consumer education approaches reinforcing the link between oral health and total health, oral health disease prevention, and preventive oral health care. Educational messages must also reinforce the importance of care through adulthood and aging.

Education must be designed and delivered in a form likely to reach consumers. The profession must effectively use the media as well as working with consumer and community groups, care centers, and other agencies.

Effective consumer education will also require a well informed professional team, sensitive to patient education methods. Education must begin in dental school and include training in geriatrics and on cultural diversity, and it must be reinforced by continuing education. The dental schools and professional organizations must play integral roles in developing materials and updates that can be used by practitioners.

The impact of demographic changes on the health system and the ability of dentistry to respond to demographic shifts were identified by conference participants as potential issues of concern. Although data indicate general trends among consumers to seek care from health providers of similar background, the magnitude of these trends and the impact on access to and use of oral health care could not be adequately addressed. It will be important for independent groups to collect and analyze information on the impact of demographic and closely linked financial issues on clinical care usage.

## E. General Health Systems and the Role of Oral Health and Dentistry

The general health systems working group considered broad directions in health care systems, delivery and consumer attitudes, and how oral health and care delivery might fit within this larger system. Two basic assumptions of this group became:

❖ The profession and industry must be an integral part of the health care team and health system.

❖ The definition of the profession should appropriately reflect the integral link between oral health and general health.

The working group noted the need for the dental profession and industry to consider its future role among the health team and, in doing so, redefine its scope and domain of practice. The group suggested an expanded focus on the oral cavity, head, and neck.

An expanded scope of practice will require expanded knowledge and training, beginning at the dental school and continuing through continued professional education. Education will need stronger focus on basic sciences, medical aspects of health, problem-based learning, and effective integration of technology.

The group also noted the tendency among the public to consider dentistry as part of the general health care system. To consumers, dentistry's relationship to medicine may be viewed in a manner similar to comparing orthopedics, cardiology, and dermatology. This view may be reinforced in the future as medical care's move to outpatient based services continues. This consumer perspective will be important in shaping directions within the dental profession and industry.

The future opportunities, challenges, and trends may indicate the need for dentistry to consider not only its scope, but also its overall image and its name. The general health systems group strongly encouraged the profession and the industry to create a forum for developing an appropriate name to carry the profession and the industry into the 21st century.

## F. Human Resources in Oral Health Care

The working group addressing human resource issues examined several trends and issues:

❖ Reports of inadequate access to care by uninsured and individuals with limited financial resources in some communities.

❖ Potential increased need for oral health care due to aging population, individuals with limited childhood preventive care, medically complex, and compromised patients.

❖ The declining number of dental school graduates and the increasing number of dentists reaching retirement age.

❖ An increasing number of females entering the profession who may chose to practice part-time during child-bearing years.

❖ Knowledge and technology advances will reinforce the need for continual learning by professionals to keep abreast of advances in related disciplines and to effectively manage complex patients. Dentist may need to allocate more time to knowledge update, even with the availability of distance learning and office-based access to information.

❖ Financial aspects of health care will emphasize value and cost-effectiveness of services.

❖ The oversupply of physicians from some subspecialties may create new challenges as these highly trained professionals seek new areas for career involvement and as the importance of oral health is reinforced. Further, integration of head, neck, and oral cavity health and disease with other health parameters may attract physician interest to this area.

Available information appears to indicate a steady and even increasing need for oral health care. This trend may be enhanced by expansion in the scope of professional services. Concurrently, there is a steady decline in the number of clinicians.

This working group recommended the need for careful study by professional organizations and independent groups representing the public, e.g., Rob-ert Wood Johnson Foundation, the Pew Commission, on access to and need for care in the future.

The profession must carefully consider its future directions, expansion of the scope of practice and the impact on the role of the dentist versus other team members. The combination of potentially underserved individuals, increased need for care, enhanced continual learning requirements, and an oversupply of physicians from some specialties may warrant careful study by the profession of effective use of the dental team. However, efforts must first begin with efforts to create effective models for examining human resources needs in the future as current methods are limited.

The working group reinforced the importance for the profession to take an open view of the trends and potential impact of a market-driven health system and to address issues that have been controversial and perhaps were even put aside in the past.

## G. General Issues in Dentistry Working Group

The working group addressing general issues in dentistry discussed a wide range of issues and perspectives that shape the dental care setting, the profession, the dental team, and its relationship with the public. The group then focused on several major areas, the image of dentistry, and the relationship of dentistry with medicine.

*Image of Dentistry.* Growth of dentistry and oral health care in the future will depend on enhancing the image of the profession. This change will be a pivotal, transformational change, reshaping the self-image among members of the team and enhancing the public's view of the profession.

Building the self-image was seen as enhancing career self-satisfaction; reinforcing continual learning in broad areas associated with knowledge update among a learned profession; reinforcing the commitment to quality and service of the consumer in all aspects of practice. Efforts in this area perhaps can be most ef-fectively undertaken as a collaborative campaign among organized dentistry. Building the qualities for a strong future image must also involve the dental school, faculty, and student groups. Image enhancement will require careful analyses and planning, with assistance from behavioral scientists and individuals with marketing and public relations expertise. Success in this area cannot be done by any single group or by the professional alone.

Reshaping the public image of the profession must reflect efforts to understand consumers and respond to their needs and concerns. Many consumers remain fearful of dental procedures. The profession must create an image as pain relievers, able to provide a range of care services and vitally a part of the total health of the individual. As the profession faces a more knowledgeable, demanding consumer, they must be equally knowledgeable about general health issues and responsive to the patient. The profession must take responsibility for guiding the public to value oral health and care services.

A major obstacle to future efforts to build the profession image, as cited by this group, is the profession itself. The profession can, at times, be resistant to new directions and change. There is a lack of clarity about future trends and a hesitancy to commit to directions. Further, many changes are slowly introduced into the educational systems.

*Relationship with Medicine.* Economic, demographic, social, and technological trends indicate the need for an even greater integration and collaboration among the health professions. Although the dental profession has attempted to distinguish its form of care delivery from the medical model, it must also work to establish stronger links with medicine in the future. These links will be vital for enhancing physician knowledge of oral health issues; for sharing information; for knowledge update and education; and perhaps even for future economic perspectives. While this may not be viewed as the highest priority for the future, ne-

glecting efforts to build collaboration may work against the dental profession in the future.

*Technology Potential.* Advances in biotechnology will offer the greatest opportunity for significantly advancing and reshaping oral health and care. Research opportunities are likely to impact prevention, diagnosis, and therapeutics. Although it is not possible to accurately predict the impact on the dental profession and the dental team, these advances are likely to create the need to consider the roles and responsibilities of team members. Further, the increased emphasis on outcomes and effectiveness measures will make the practice setting part of the research environment.

Information technology will directly affect the administrative and business aspects of practice. Shared resources and the virtual group practice appear to offer opportunities for control of overhead cost. Further, information technology will also shape approaches to professional education, as knowledge enhancement comes to the operatory and learning becomes a continual process (not limited only to special courses).

Technology advances also create some potential areas of caution. New technology, particularly technology directly related to clinical practice, tends to be expensive and to drive up care costs. While this should not preclude the profession from embracing new technology, dentistry must become more attuned to reviewing appropriate outcomes and effectiveness data. While there is always a degree of caution in embracing new technology, the working group emphasized that technology will be the means to the vision for oral health and for the profession and industry in the 21st century.

# Cruising to 2010: A Summary

Dentistry 2010 concluded with a sense of energy and a desire to create a solid foundation for future collaboration and progress. It is hoped that the summary of the conference will spur some creative thinking and visioning by others in dentistry. In addition, the conference participants offered their own charges to stimulate the future.

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## Enhanced Dental Decision-making Process

The ADA is challenged to unify, develop, and sustain an ongoing decision-making process for dentistry, without controlling or dominating the process. Creating the process, and the process itself, should include active involvement and solicited input from the ADA, the AGD, the specialty organizations, dental educators, the oral health research community, third party dental professionals, state boards, the American College of Dentists, the International College of Dentists, and the Pierre Fauchard Academy.

The dental organizations also must assume active responsibility for creating a common database with appropriate information to examine quality of care, outcomes and effectiveness research, and to support clinical decision-making.

In the above areas, there must be careful attention to the processes to establish these resources as well as to the effective implementation and use of these tools.

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## Professional Image

Conference participants recognized the need to carefully assess the profession's image and to refine or reshape the image for the future. Inherent in this process must be establishing the role of the profession as a key partner in the health system.

Given the progress, capabilities, and technological opportunities in oral health, conference participants urged the collaborative dental organizational network to consider renaming of the profession to reflect its role and scope in the 21st century. This effort can be effectively implemented through the decision-making structure identified above.

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## Examining Human Resource Perspectives

Dentistry must encourage efforts to establish reliable and valid models for determining needs for oral health services and human resources requirements. It must remain open to studying a range of approaches for providing care to the population in a cost-effective manner and to meet the consumer's expectations of value in care. Efforts in this area can be effectively done in collaboration with groups representing public perspectives, such as Oral Health America, the Robert Wood Johnson Foundation, and the Pew Charitable Trusts.

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## Dental Education

Two key perspectives in dental education will be enhancing the responsiveness of the educational system to the direction and speed of change and establishing financial support to ensure the viability of dental education and the profession in the future. The latter can include establishing a national endowment for dental education supported by the entire profession.

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## Enhanced Self Regulation

The profession must actively progress towards national licensure and continued competency evaluation. Action on the competency issue may become increasingly relevant to avoiding imposed regulations or guidelines from other groups, e.g., regulators, insurance companies.
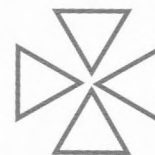
# A Health Plan
# Report Card for Dentistry

James D. Bader, DDS, MPH; Daniel A. Shugars, DDS, PhD, MPH;
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## Abstract

Employers are demanding information about the performance of the health care plans they purchase for their employees. As a result, "report cards" are now beginning to appear that provide standardized, population-based comparison data for managed medical care plans' quality of care, access and member satisfaction, utilization, and financial status. Although report cards for dental care plans have not yet been developed, it is likely that purchasers will soon expect such performance information. A prototype report card for dental managed care plans is proposed in an effort to facilitate the development of a consensus standard for dentistry. The thirty-eight measures proposed for the report card are designed to be obtainable with a realistic level of additional effort in most dental practices. They were selected to provide data on questions of importance to purchasers and to assess processes and outcomes important because there is strong evidence for their effectiveness. The rationale for the measures is discussed, as are the s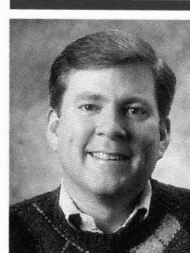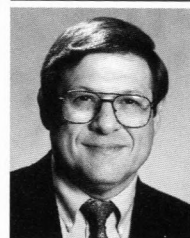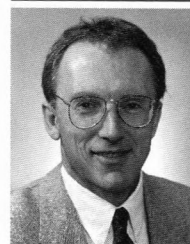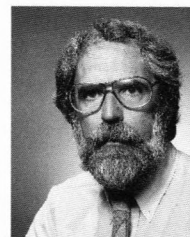teps required to develop more sophisticated measures. While the responsibility for the procurement of the information needed for dental report cards will lie initially with administrators of dental care plans, it is likely in the near future that individual practitioners will be expected to supply this information to both individual patients and potential contractors.

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Rising medical care costs have led to fundamental changes in the basic structure of the medical care system. These changes have occurred in the types of services delivered, the kinds of providers used, the places services are provided, and the organization of the health care system itself. The focal point of the system is shifting from that of the individual provider and patient to groups of providers and populations of patients. Providers are organized financially, informationally, and (in increasing numbers) physically into independent practice associations (IPAs), health maintenance organizations (HMOs), and other provider "networks" and delivery systems. These amalgamations of individual providers are contractually responsible for the health and health care of patient populations. Patient populations are composed principally of multiple clusters of people, with the individuals in a cluster sharing the same employer or the same eligibility status for a federal or state program. This evolution of the structure of the health care system has occurred over the past half century,

## Table 1. Examples of HEDIS 2.0 Measures

### Quality of Care
Rates per at-risk member for...
Childhood immunizations
Cholesterol screening
Mammography screening
Pap smears
First trimester prenatal care
Diabetic eye care
Asthma inpatient admissions
Low birthweight infants
Ambulatory follow-up for mental
  health admission

### Utilization and Membership
Rates per at-risk member for...
Coronary bypass
Angioplasty
Hysterectomy
Caesarean section
Prostatectomy
Hospital days
Obstetrical stays
Non-acute care data
Membership profile
Member disenrollment rate

### Access and Patient Satisfaction
Percent of...
Adult members with a visit in
  the past three years
Providers accepting new
  patients
Members satisfied with plan
  overall
Telephone response time
Appointment wait time
Specific patient satisfaction
  activities

### Financial Information
Summary financial statistics on...
Revenues
Reserves
Short-term liquidity
Capital structure
Premium trend information

but the rate of change is increasing and consolidation of the structure into groups of providers with responsibility for populations of individuals is now seen as inevitable and nearly complete.[1] However, the evaluation of the performance of the health care plans offered by these provider groups is just beginning.

Employers, as purchasers of health care plans, are the principal advocates for evaluating their performance. They pay for most of the direct costs of health care for their employees. As a result they have two goals, to contain rising costs and to ensure that they receive "value" for their premium payments. While costs are easily measured, determining if they are receiving value for their expenditures is more difficult. Traditional measures of structure, process, and outcome are important, but another level of evaluation, of how well the provider group meets the needs of the patient population for which it is responsible is also necessary.[2] The first generation of instruments for this level of evaluation, health plan "report cards," are beginning to appear.

Health plan report cards are sets of standardized measures with which to evaluate the performance of managed medical health care plans. Report cards are being developed for use by employers who purchase health care coverage for a large group of consumers.[3,4] Edited and annotated versions are also being prepared for individual consumers who must select a plan from among several options.[4,5] With enrollment in managed medical health care plans now approaching 25% of the population,[6] the need for standardized, valid information describing aspects of plan performance has become critical for comparisons of plans. The availability of such information is assumed to improve purchasers' and consumers' choices, which in theory should improve plan performance through market forces. To date, developmental activity has focused only on medical care plans, but if predictions for the growth of managed dental care plans prove correct,[7,8] such performance measures will soon be needed for dental care plans as well. Using the structure of a widely

disseminated medical report card as a guide,[3] this paper explores the development of a dental report card. First, the medical report card is briefly reviewed together with the applicability of existing dental measures to this model. Second, an interim set of standardized measures is suggested and discussed. Finally, the developmental work necessary to produce a definitive set of measures is outlined and implications of the developmental process are discussed. Although the report card is envisioned primarily as a performance measure for multi-provider health care plans, the applicability of the measures to individual practices is also discussed.

### Measuring Medical Plan Performance

Under the current rubric, plan performance is a broad concept encompassing a menu of measures of quality of care, access and patient satisfaction, utilization and membership, and financial issues.[3-5] Examples of such measures from the HEDIS 2.0 report card are shown in Table 1. The HEDIS (Health Plan Employer Data and Information Set) measures were developed by the National Committee for Quality Assurance in 1992-3. These measures and a subsequent revision (HEDIS 2.5) are becoming a de facto "standard" for the evaluation of plan performance. All of the approximately sixty measures are population-based, thus holding the health care plan "accountable" for all enrollees, not just utilizers. Quality of care measures are primarily process measures that focus on medical care processes where there is strong evidence for the relationship between the process and a desirable outcome. Childhood immunization is an example.

Further, most of the quality measures focus on important priorities identified in Healthy People 2000.[9] Access and satisfaction data emphasize direct measures of enrollee satisfaction and plan use as well as indirect measures of plan responsiveness to consumer concerns. Utilization data yield information on volume and distribution of specific types of ser-

vices, information that is readily available (for covered services only) within claims-based plans but often less accessible or complete within capitation plans which may not record service procedure information for reimbursement purposes. The intent is to inform purchasers about how resources are being allocated. Financial information emphasizes premium trends and the financial stability of the plan. All of the measures are accompanied by specific standardized protocols for data collection and calculation. An updated set of measures (HEDIS 3.0) is due in early 1996, together with a more consumer-oriented version presenting an annotated comparison of a reduced set of measures for several large provider groups.[10]

A report card is a description of the performance of a health care plan on a set of standard measures. It is distinct from another concept also associated with managed care, accreditation.[11] Accreditation is a process through which aspects of a medical care plan are reviewed by independent examiners to determine if they meet minimum standards for safety, quality of care, and plan administration. Accreditation is voluntary, but as the trend for purchasers to consider bids only from accredited plans grows, it is rapidly becoming a business requirement. Currently five independent organizations accredit medical care plans using similar but not identical standards.[11] One organization is exploring the feasibility of a voluntary dental accreditation service.[12] Several dental plans do "accredit" individual participating providers. Although there is some overlap in terms of what is assessed, accreditation standards tend to be oriented toward review of the structure and process elements of a health care delivery plan, while report cards focus on outcomes of care for populations of patients.

Just as important, accreditation standards usually have minimum performance standards, with plans that do not meet the minimums not receiving accredited status. In contrast, report cards are descriptive. The information is intended to assist purchasers in selecting from

among alternatives. Thus, to many purchasers, accreditation is a minimum requirement, with selection determined by price and performance as reflected by the report card.

## Existing Measures in Dentistry

Dentistry has had less experience with evaluation of care delivery at the level of the population than has medicine. Perforce, it has few population measures in place. Still more problematic, dentistry has not developed methods for collecting population-level data except through resource intensive special examinations of sample populations. This situation is due in part to a long-term emphasis on evaluating the technical quality of care rather than its outcomes.[13] The decentralized nature of dental practice, wherein the bulk of treatment is provided by independent providers in separate facilities without automated, integrated administrative record keeping systems also contributes to the problem. While this latter condition also exists in office-based medical practice, the presence of the hospital as well as the more advanced state of consolidation of medical providers has provided a focus and opportunities for the development of the systems necessary to calculate population-based performance measures for medical practices.

Their paucity notwithstanding, existing measures in dentistry for the four general dimensions of plan performance tapped in the HEDIS 2.0 report card merit consideration for inclusion in a dental report card. With respect to quality of care, dentistry's focus has been almost exclusively on technical quality and on structure and process measures such as the presence of emergency kits, the diagnostic quality of radiographs, or the presence and performance of a recall system. Several sets of quality assessment criteria have been promulgated in the past two decades.[14-16] From a performance perspective, these quality assessment criteria sets share a common weakness in that few of the technical quality, structural, and process elements they comprise are linked to patient outcomes

through strong scientific evidence.[13] Moreover, most of the limited number of patient outcome measures assessed, such as patient knowledge or plaque scores, suffer from the same problem. These quality assessment criteria have a useful role to fulfill in dentistry, but it is one primarily of facility and provider accreditation rather than plan performance evaluation.

Dentistry has devoted some attention to measures of oral status that could be considered quality of care performance measures in the sense that change over time in a patient population could indicate effects of preventive and therapeutic treatment. In general, however, disease and condition-based indices are extremely limited measures of the broad construct of "oral health status."[17] Both those measuring single conditions such as the DMF index for caries and those integrating several conditions into a single oral health status profile or score, such as the Nikias[18] and Marcus[19] indices, incorporate only those measurements deemed important by the profession. Notably, none of the integrated measures include patient self-reported information on discomfort, ability to function, or other aspects of oral health-related quality of life.[20] Further, the integrated scores are based on a set of weights derived empirically by professionals in the absence of good information describing the linkages between the conditions measured and subsequent outcomes. Thus at best, the scores reflect exclusively professional subjective opinion about the relative importance, seriousness, and prognosis of a variety of conditions. The actual measures of disease prevalence may have utility in assessing change over time. For the integrated measures however, their goal of expressing oral health status in a single score or profile seems to be their weakness as well. The exclusion of patient input and the lack of scientific support for the professional weighting they incorporate render them of limited utility as population-based performance measures.

It is worth noting that the concept of an integrated measure of professionally

## Table 2. Summary of Interim Report Care Measures for Dentistry

### Quality of Care
Use of risk assessment
Risk-related dental sealant
  application
Risk-related fluoride
  supplementation
Risk-related periodontal
  maintenance

Annual caries post-enrollment...
  Adults
  Fourteen-year-olds

Changes in periodontal status...
  Improvement
  Worsening

Tooth loss

Dental "quality of life"...
  Mean level
  Three-year stability

### Utilization and Membership
Pre-enrollment rate for...
  Examination
  Prophylaxis
  Cast crown
  Endodontic treatment
  Periodontal scaling

Proportion of resources to...
  Diagnostic services
  Preventive services
  Operative services
  Prosthetic services
  Other services

Membership profile...
  Age
  Gender
  Plan type

Disenrollment...
  Enrollee
  Purchaser

### Access and Satisfaction
Appointment wait time
Providers accepting new patients
Provider turnover
Satisfaction:
  Overall
  Care
  Access
  Responsiveness
  Costs

### Financial Information
Three year summaries of...
  Change in premium
  Total revenue
  Net Revenue
  Distribution of expenses

dentistry has begun,[20] but at present no measures have experienced widespread application. Finally, almost all of these professionally determined dental disease and condition indices require the collection of information not usually recorded formally during the course of a patient examination. For use as performance measures, either a patient sampling strategy using specially trained examiners or a universal recording strategy accompanied by attention to standardization of providers as recorders would be necessary. Neither is inexpensive.

Dentistry does have some experience with population-level measures of access and patient satisfaction. With respect to access, a variety of "utilization data," such as time since most recent dental appointment, have been collected in numerous national, state, and local surveys.[23] Associations between these utilization measures and a large number of sociodemographic and oral characteristics have been reported. Thus, these access measures may be the only population-based performance data that can be "risk adjusted." Another access measure, time to next available appointment, has long been included in the American Dental Association's survey of dental practice.[24] This measure is practitioner-reported, as opposed to similar patient-reported HEDIS measures. Several established patient satisfaction measures also are available,[25-27] although they are used infrequently. More often satisfaction seems to be determined through the use of unvalidated locally written items.

Measures of the number and distribution of dental services by type of service are reported occasionally.[24,28,29] However, no standard set of service types has been developed, and when reported, numbers of services usually cannot be converted to population-based rates because the number of individuals receiving, or eligible to receive the services is not known. Differences in how service data have been obtained (logs, dentist estimates, and claims data) also make comparisons difficult. Individual dental providers without a computer-based treatment data system usually cannot produce

determined health status has no parallel in medicine. No professionally determined measures of overall general health status or measures specific to single organ systems such as "kidney health status" are in widespread use as performance measures, although organ-specific

diagnostic measurements of functional status are common. It is also worth noting that medicine is making increasing use of a variety of patient self-report measures of general and specific health status,[21] such as the MOS short form.[22] The development of such measures for

these data, although carriers have evaluated them for some time.[30] Until and unless providers record all treatment transactions electronically, these data will not be complete or easily obtained. Finally, specific state requirements notwithstanding, standardized financial performance measures have not been developed specifically for large dental care provider groups. Such groups have been rare until recently and there has been no demand for such information. For this dimension however, the lack of specific measures for dental plans is not problematic because medical plan measures can be readily adopted.

## An Interim Set of Dental Measures

Clearly, any set of measures proposed for a dental plan report card must be regarded as preliminary given the immaturity of most of the available measures and information systems. Nevertheless, there is growing need for this information. The concerns that led to the development of the HEDIS project are now being reported anecdotally in dentistry, with provider groups, dental care plans, and third party carriers all reportedly beginning to identify specific performance measures that will be used to document "quality" for current and prospective purchasers. Without standardization, a hodgepodge of measures will emerge that are tailored to specific plans' data systems and delivery strengths. By specifying an interim set of standardized measures, the process of discussion, development, validation, and evaluation is begun that must occur within and among dental providers and plans if an acceptable set of standardized valid measures is to be adopted for use over the longer term.

The same criteria applied to the selection of measures in the HEDIS report card must also guide development of a first-generation dental report card. Measures must reflect outcomes of importance or processes linked to outcomes by strong empirical evidence. Only outcomes where appropriate treatment can have a substantial beneficial effect

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**Table 3. Proposed Measures for the Quality of Care Dimension**

1. Proportion of all enrollees receiving a risk assessment within the past two years

2. Proportion of high-risk eight-year-olds with sealants on four first molar occlusal surfaces

3. Proportion of high caries risk enrollees receiving supplemental fluoride therapy

4. Proportion of adults enrolled for one or more years who receive treatment for caries

5. Proportion of 14-year-olds enrolled for one or more years who receive treatment for caries

6. Proportion of high periodontal disease risk enrollees receiving at least two periodontal treatment sequences within the past year

7. Proportion of enrollees with one or more PSR scores of 4 who have at least one 4 score decrease

8. Proportion of enrollees with any PSR sextant score increasing to 4

9. Proportion of enrollees with tooth loss (excluding 3rd molars and extractions for orthodontics)

10. Mean score of all enrollees completing dental "quality of life" instrument

11. Mean change in dental quality of life score from initial enrollment to third year

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should be considered. Whenever possible, measures should use data from administrative data sets common to most plans. They should be population-based, patient-centered, and permit risk adjustment. Measures should be practical, i.e., most dental plans or practices should be able to begin collecting and reporting data for these measures within two years.

Two additional considerations must also drive the selection of the dental measures. First, the measures should address issues central to purchasers' interests. This consideration is particularly important for dental health care plans because for most purchasers the decision to provide dental benefits is far more discretionary than the decision to provide medical benefits. Second, the total number of measures should be small, especially for the interim report card, to facili-

tate their discussion and adoption and to discourage partial adoption. The interim report card described here comprises thirty-eight measures (Table 2), which are grouped into the same four dimensions reflected in the HEDIS measures.

*Quality of Care Dimension:* Eleven measures address quality of care (See Table 3). Several of these measures are based on the concept of risk assessment, wherein individual patients or groups of patients are designated at higher risk of disease initiation or progression based on specific characteristics well-associated with initiation or progression. For the interim report card, an extremely simple two-level, two disease matrix for risk classification is proposed, i.e., "high" and "not high" levels for caries and periodontal diseases. For the interim report card, arbitrary criteria for classification

## Table 4. Proposed Measures for the Access and Satisfaction Dimension

1. Mean waiting days for a non-urgent exam or hygiene appointment requested by enrollee

2. Proportion of primary care dentists associated with the plan who currently accept new plan patients

3. Proportion of dentists associated with the plan at the beginning of the year who are still plan providers at the end of the year

4. Patient satisfaction with the plan overall

5. Patient satisfaction with the care received through the plan

6. Patient satisfaction with ease of access to care within the plan

7. Patient satisfaction with plan's responsiveness to enrollee's individual requests, e.g., appointment times, provider changes

8. Patient satisfaction with the cost of care received through the plan

are proposed: high risk classification for caries results from currently having a lesion or having received any treatment for caries within the year preceding the assessment; high risk for periodontal diseases is signaled by one sextant with a PSR score of four or three sextants with scores of three. The key risk-related measure proposed for the report card is the proportion of enrollees who have been examined and assigned a risk classification in the preceding two years. Other quality of care measures based on risk assessment include three prevention-related measures, the proportions of (a) high caries risk eight-year-olds with all four first molar occlusal surfaces sealed, (b) high caries risk enrollees of any age who receive supplemental fluoride therapy, and (c) high periodontal risk enrollees with a minimum of two periodontal treatment sequences within the past year.

Clinical outcomes assessed within the quality of care dimension include the proportions of (a) enrollees receiving treatment for caries in any year subsequent to their first year of plan enrollment, (b) enrollees with any PSR sextant score of three or four that declines in the absence of extractions, (c) enrollees with

a PSR sextant score of three that increases, (d) fourteen-year-old enrollees with caries requiring restoration in the preceding year, and (e) proportion of enrollees losing a tooth, exclusive of third molars and teeth extracted for orthodontic reasons. Outcomes from the patient perspective are captured by two measures on a yet-to-be-selected dental health "quality of life" instrument.[20] These measures are the mean score for all enrollees, and the mean change in scores for all enrollees completing their third year of enrollment.

*Access and Satisfaction Dimension:* Eight measures address access and satisfaction (See Table 4). The access measures are (a) mean number of waiting days for an enrollee-initiated request for a non-urgent examination or oral hygiene appointment, (b) the proportion of primary care dentists currently accepting new enrollee assignments, and (c) the system-wide annual provider turnover rate. With respect to satisfaction, proposed measures are the distributions of enrollees' responses (on a four-point format of very dissatisfied, dissatisfied, satisfied, very satisfied) to questions tapping five dimensions of satisfaction; overall satisfaction with the plan, satisfaction with the care received,

satisfaction with access to care, satisfaction with the plan's responsiveness to individual concerns, and satisfaction with the financial and cost aspects of the plan.

*Utilization and Membership Dimension:* Ten measures describe the utilization of services within the plan (See Table 5). Five of these are provision rates (per enrollee) for five procedures; examination, dental prophylaxis, full-coverage crown, endodontic treatment, and periodontal scaling. The other five are the relative proportions of all treatment resources devoted to diagnostic, preventive, operative, prosthetic, and other services. All ten utilization measures should be reported for all enrollees and for enrollees grouped by risk classification. Five membership measures include disenrollment rates for enrollees and purchasers and membership distributions by age, gender, and coverage type. The latter three measures are collected for use as adjustment factors for plan measures.

*Financial Dimension:* The report card information describing plan financing comprises four measures that are parallel to the HEDIS measures. They are three-year summaries of annual (a) change in monthly premium by coverage type, (b) total revenue, (c) net income, and (d) distribution of expenses across the categories of internal providers, external providers, treatment facility operations, capital costs, administration, and other expenses.

## Discussion of the Interim Measures

Several aspects of this proposed set of interim measures require explanation. Perhaps the most radical departure from previous quality assessment instruments is the inclusion of the concepts of risk assessment and risk-related preventive treatment in the quality of care dimension. Emphasizing risk assessment is an attempt to encourage a needed individualization of routine preventive dental care.[31-33] In contrast to the "one size fits all" approach of the six month or yearly recall, risk-assessment permits providers to redistribute plan resources across a population of enrollees for the substan-

tial benefit of those in need of intensified prevention without a concomitant loss in needed services among other enrollees. In combination with the direct annual measures of the incidence of caries and severity of periodontal diseases in the population, a powerful descriptor of the two most central process-outcome linkages in dentistry is forged. This direct attention to outcomes of principal diseases is a luxury not available to the medical report card, which must assess a much broader range of conditions. Risk assessment also offers an initial approach to adjusting performance measures for the presence of disease and disease-related conditions, adjustments that are essential if the measures are to be accepted by the profession. Finally, the admittedly primitive classification criteria proposed for this set of interim measures permit virtually all providers to adopt the assessment system with a minimum of additional clinical data collection. Plans are free to use more refined measures; the essential concept for performance evaluation is that patients' risks are evaluated, treatment is appropriate to risk classification, and plan performance is evaluated on the basis of this classification. Thus, plans are free to designate larger numbers of enrollees as being at risk, but they will be evaluated on the appropriateness of services for this high risk group.

Another departure is the inclusion of a dental quality of life measure in addition to dental satisfaction measures. The satisfaction measures address issues of importance to employers, who presumably expect that the dental coverage they purchased will be a source of satisfaction to their employees, rather than a source of dissatisfaction. Dental health quality of life measures are measures of psychosocial outcomes of dental care that are of interest to patients.[20] These outcomes have received little attention from the profession until recently. A measure, still to be identified, was proposed for this interim report card to begin to address the need for information about how dental care affects patients, rather than just patients' teeth and gingivae. Such information may be important not only for com-

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**Table 5. Proposed Measures for the Utilization and Membership Dimension**

1. Proportion of all enrollees receiving an examination in the past year

2. Proportion of all enrollees receiving a prophylaxis in the past year

3. Proportion of all enrollees receiving a full-coverage crown in the past year

4. Proportion of all enrollees receiving endodontic treatment within the past year

5. Proportion of all enrollees receiving periodontal scaling in the past year

6. Proportion of treatment resources devoted to diagnostic procedures

7. Proportion of treatment resources devoted to preventive procedures

8. Proportion of treatment resources devoted to operative procedures

9. Proportion of treatment resources devoted to prosthetic procedures

10. Proportion of treatment resources devoted to all other procedures

11. Proportion of enrollees who discontinued enrollment in the past year

12. Proportion of purchasers who have not renewed contracts in the past year

13. * Distribution of enrollee ages by five-year categories

14. * Gender distribution of enrollees

15. * Distribution of enrollees by type of coverage, e.g., copayment levels, caps/limitations, etc.

* for use in adjusting measures for differences in enrolled populations

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parison of specific plans, but also for the continued justification of dental coverage as an employee benefit. The specific focus on caries prevention and incidence in children also emphasizes the consumer orientation of the report card. Dental care plans are most frequently offered as family benefits. Thus for informed selection decisions, some measure of performance in child populations is needed. The measures selected represent assessments of both a plan's orientation toward prevention and its success in implementing the concept.

The lack of measures for concepts firmly imbedded in other quality assess-

ment instruments also requires discussion. Although no measure related to examination frequency or content was included, a thorough examination is a prerequisite for risk assessment, which is an included measure. No measure associated with treatment planning was included. While the presence of a plan of treatment and the completion of such a plan are often regarded as quality markers, in fact neither marker offers any information regarding the appropriateness of the associated diagnoses and treatment selection. Similarly, no measure of routine recall appointments is specified in the absence of elevated risk for peri-

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odontal disease because the need for such treatment has not been demonstrated.[13] The concept of periodic assessment of patient status, one of two valid reasons for recall appointments, is subsumed under the risk assessment measure. The provision of needed preventive or treatment therapy, the other valid reason for recall appointments, also is subsumed by the measure addressing risk-related periodontal maintenance.

Apart from the three risk-related preventive measures, no narrowly targeted measures were included that assess how the two principal dental diseases are managed in specific population segments. Thus, potential measures such as "proportion of patients with active caries who receive remineralization therapy," or "proportion of adult patients with at least one PSR score of three who receive periodontal scaling," were rejected. While dentistry's unique position of being responsible for a limited number of diseases offers the opportunity for more detailed evaluation of how those diseases are managed, the report card is not the appropriate instrument for that evaluation. As a population-based summary measure of plan performance, it must focus on broader outcomes of interest to patients and purchasers. Thus, measures of new disease and of change in existing conditions take precedence over those of how such outcomes were accomplished. The measures in the utilization dimension do permit a general assessment of the plan's orientation and approach to the management and prevention of dental diseases. More detailed analyses will inevitably raise issues of appropriateness the profession is currently ill-equipped to settle.[13,34,35]

Finally, with the exception of the three risk-related prevention measures and the change in periodontal status measures, all measures in the quality of care dimension use the enrolled population as the denominator for rate calculations. Using this rate definition satisfies two report-card requirements, but it also introduces an inconsistency in the interpretation of the measures. The report card should be population-based. Because the population for which a plan is

responsible is all enrollees, not just those with visits, enrollees is the appropriate denominator for assessments. Also, this number usually will be more easily determined from administrative data than will the number of patients with visits. However, use of enrollee denominators where possible means the report card must be interpreted carefully when such denominators are not used. Any measures requiring a clinically-de-

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*I*nstallation of new software and incremental adoption of changes in what data are collected are necessary, but entry of historical data is not required.

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termined baseline risk assessment will only include a portion of the population, that proportion with a baseline assessment.

Implementing these measures will pose some problems. All plans will encounter difficulty in changing provider behaviors where necessary to implement universal risk assessment. A previous study of implementation of a prototype PSR measure found that less than 50% of practitioners displayed a pattern of routine use after a reasonably intensive intervention.[36] All plans will also be challenged to collect the necessary reason-for-treatment information because practitioners are not used to providing this information.[37] Perhaps the most challenging change will be the adaptation of existing office computer systems to collect the data needed for the report card. While most practices now have billing software from which the electronic data can be captured, supplemental software will be needed in most practices to capture and store these treatment data in patient-based files, as well as to permit indication of reason for treatment. The patient-based file system also is necessary

for storage of risk assessment data and PSR scores. At least for the interim report card, all other data can be gathered easily by hand. Installation of new software and incremental adoption of changes in what data are collected are necessary, but entry of historical data is not required. In a two year period, all necessary data will be available for a report card. Nevertheless, data system changes are a source of concern to practitioners, and can be difficult to effect.[36] It must be understood that for plans without existing integrated data systems that tie together all plan practitioners, securing the data necessary for preparing the report card will be more difficult. Nevertheless, achieving such change over a two-year period is not an insurmountable obstacle, and the extent of provider compliance achieved by the plan may provide indirect information about compliance with other guidelines. It may well be that in the absence of integrated data systems plans, not only cannot produce report cards, they also cannot appropriately manage the care they provide.

## Needed Developmental Work

It is clear that these proposed interim measures are less than completely satisfactory indicators of plan performance in several respects. In essence, what is lacking is a sense of how to measure the scope and thoroughness of the provision of appropriate care. But this missing "sense" is not simply a set of discrete answers to questions about the effectiveness of specific treatments. Rather, it is a more complete system of measurements with which to generate answers to questions arising from current treatments as well as those yet to be developed.

Dentistry must expand its basic set of measurements if better measures are to be available. The term measurement is used here to distinguish between the indicators (*measures*) included in the interim report card and assessments (*measurements*) of specific biologic, social, and economic events or processes. As noted, dentistry is just beginning the development of quality of life measurements.[20] The need

for valid, sensitive summary measurements of the effects of dental diseases and conditions on patients' lives is crucial if a comparison of dental plans' success in improving the lives of their enrollees is to be included in the report card. Similarly, dentistry has few objective measurements of functional status, especially measurements that can be applied at an epidemiological or population level. Such measurements are needed both to provide quantitative comparators for self-report measurements in quality of life instruments and to assess effects of specific treatments where quality of life instruments are relatively insensitive to treatment induced change. Both diagnostic measurements for the functional status of basic biologic processes, such as salivary enzyme production, and measurements of physical function, such as speaking and chewing, are needed.

Another set of standardized measurements essentially lacking in dentistry is a set of diagnostic codes. While individual dental-related conditions have been thoroughly described in texts and atlases, a standardized classification system for identification of specific disease entities is lacking. Although commonly visualized as a numerical classification system similar to the World Health Organization's International Classification of Diseases,[38] in fact almost any system that assigns unique identifiers to all disease processes and sequelae, as well as non-disease related conditions that affect oral structures, would serve the purpose. Development and broad implementation of this set of measurements represents an essential step in that such measurement permits treatment outcome data to be evaluated in the light of existing conditions.

Measurement of the elusive concept of "oral health status" needs attention. As noted earlier, integrated measures currently available that purport to measure oral health status are unsatisfactory for use in a report card because they rely solely on professional judgment, incorporating neither patient utilities nor objective data on the course of treatment and untreated diseases and conditions. However, a more narrowly defined ex-

pression of the concept of oral health status could be useful for application to report cards. Dental plans need some method for "risk adjusting" report card measures based on the enrolled populations. For example, if new enrollees in one plan have had previous dental disease that has resulted in greater need for treatment than new enrollees in another plan, alternative report card measures may differ between plans in the absence of real differences in the plans. By adjusting report card measures for the in-

fluencing factor of needed treatment upon enrollment, unbiased comparisons between plans are possible. Because of the extensive variation among dentists in determining the need for treatment and the lack of knowledge of outcomes of alternative treatment strategies,[13] any prototype standardized index of needed treatment will have to be based largely on either a representative consensus of professional judgment or empirically derived professional norms. Thus, the approach employed by existing indices of oral health status may be usable, even though their weights are not because these indices were not constructed as treatment needs measures.

Finally, patient utilities for dental conditions and treatment outcomes need to be further delineated. This work is a necessary step in evaluating the appropriateness of the care a plan provides. Patient utilities are measurements of the value patients place on specific oral health states[39,40] that can result given different approaches to treatment of the same condition. Only when patients' values are explicitly known can a plan identify policies

for selection of appropriate treatments from several alternative treatments.

As this expanded set of measurements becomes available, the real work of improving the dental report card can begin in earnest. The work will involve careful examination of relationships between these measurements to determine which are best suited to assess plan performance. Further, and more importantly, the work will involve examination of the relationships between treatments and changes in these measurements. Out-

comes of treatment, long needed in dentistry, will be strengthened through the use of measurements tapping a broader array of important dimensions.

### Implications for Dentistry

The standardized report card proposed here is intended to provide group purchasers and individual consumers with comparable information describing the overall performance of dental plans. This performance information, together with information on costs and benefits permits more informed selection from among competing dental plans. While the responsibility for collecting these data will be placed on dental care plans, ultimately the information must be provided by individual dentists. If the plan provides care through a group practice HMO model, individual dentists will be affected only to the extent that they must collect additional data for risk assessments. Making the arrangements to adapt record-keeping systems to collect this information, as well as reporting responsibilities, will rest with plan administrators. It is possible that the ability to supply the

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*A nother set of standardized measurements essentially lacking in dentistry is a set of diagnostic codes. While individual dental-related conditions have been thoroughly described in texts and atlases, a standardized classification system for identification of specific disease entities is lacking.*

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information needed for report cards will be a participation requirement or a practice accreditation standard for such plans. Alternatively, procedure or capitation reimbursement may be predicated on supplying these data.

More broadly, there is no reason why these performance measures should not be applied to individual dental practices. Perhaps the greatest obstacle is defining the patient population through which a practice will be evaluated. Here, some arbitrary measure, such as the number of patients presenting for treatment within the preceding year or two years, could be substituted for the enrolled population. The implication for dentistry is that just as dental provider groups are being pressured by the marketplace to document their performance in caring for populations of patients, so too will individual providers encounter increased expectations for performance reporting.[41] This expectation should not be viewed as oppressive. The report card measures are a method for continuous quality improvement in dental practice. The same observation about the importance of the type of information included in the report card that was made for dental plans holds true for dental practices: without such information, the ability to provide appropriate care for one's patients may be compromised.

Report cards will be usable only if the data are collected and reported in a uniform manner. Thus, in a process similar to that occurring in medicine, the formation of a coalition of major purchasers and dental care plans pledged to the consensus development and use of a standardized set of report card measures could contribute substantially to their creation and maturation. There is a role as well for organized dentistry in this process. The report card measures proposed here are intended to be a starting point for such joint development activity.

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# Will Modern Caries Management Reduce Restorations in Dental Practice?

Douglas K. Benn, BDS, PhD; Martin I. Meltzer, PhD

## Abstract

Dentists have difficulty diagnosing caries presence and activity. Modern caries management suggests that lesions in low risk patients should not be restored until the radiolucency extends into the outer third of interproximal dentin. Even stained fissures need not be restored in the absence of occlusal dentin radiolucency. If this standard were adopted, what affect would it have on the amount of operative treatment delivered? This report created a model to forecast the change in work volume caused by new caries management strategies. The model considered two identical groups of 1,000 adult teeth with a normal distribution of 1,000 radiographic lesions in each group. Group I would have all lesions restored at baseline, but Group II would have only lesions in the dentin restored. Each year for ten years the model forecasts the number of replacement restorations for both groups, plus initial restorations for Group II. A sensitivity analysis was conducted using slow progression rates (Group IIa) and fast progression rates (Group IIb). After ten years, Group IIa has 49% and Group IIb had 32% fewer restorations than Group I. It is concluded that the model is robust and modern caries management may significantly reduce operative workload.

has a sensitivity of 12% to 31% and a specificity of 70% to 98%, as reported in the literature.[8,9] Explorers have a sensitivity of 14% to 24% and a specificity of 70% to 99%.[9,10] When visual inspection of incipient occlusal caries is combined with bitewing radiography, the diagnostic accuracy improves significantly; sensitivity of 49% to 75% and specificity over 92%.[8] The accuracy of interproximal radiography has a wide range of sensitivity from 50% to 90%, with specificity over 85%.[11,12] Of the three techniques, radiography is the most accurate for diagnosing and monitoring of caries progression.[11,13-15]

It is well documented that the prevalence of caries has significantly declined over the last twenty years, with 50% of school children caries-free in industrialized countries.[1,2] During the period from 1979 through 1990, the total number of restorative procedures (amalgams, composite resins, and crowns) declined by an average rate of 1.3% per year in the United States.[3] However, linking epidemiological trends to practice trends is difficult as it has been reported that dentist treatment rates can be affected by competitive market forces, quality of care, practice equipment, or dental personalities.[4,5] In addition, dentists' decision making is extremely variable[6] even when supplied with objective reference material and guidelines.[7]

Part of the decision making variability can be explained by the low diagnostic accuracy of the three conventional diagnostic methods used to detect caries: visual inspection, explorers, and radiography. Diagnostic performance of a test can be expressed as sensitivity (proportion of disease sites correctly reported) and specificity (proportion of healthy sites correctly reported). Visual inspection of noncavitated, incipient fissures
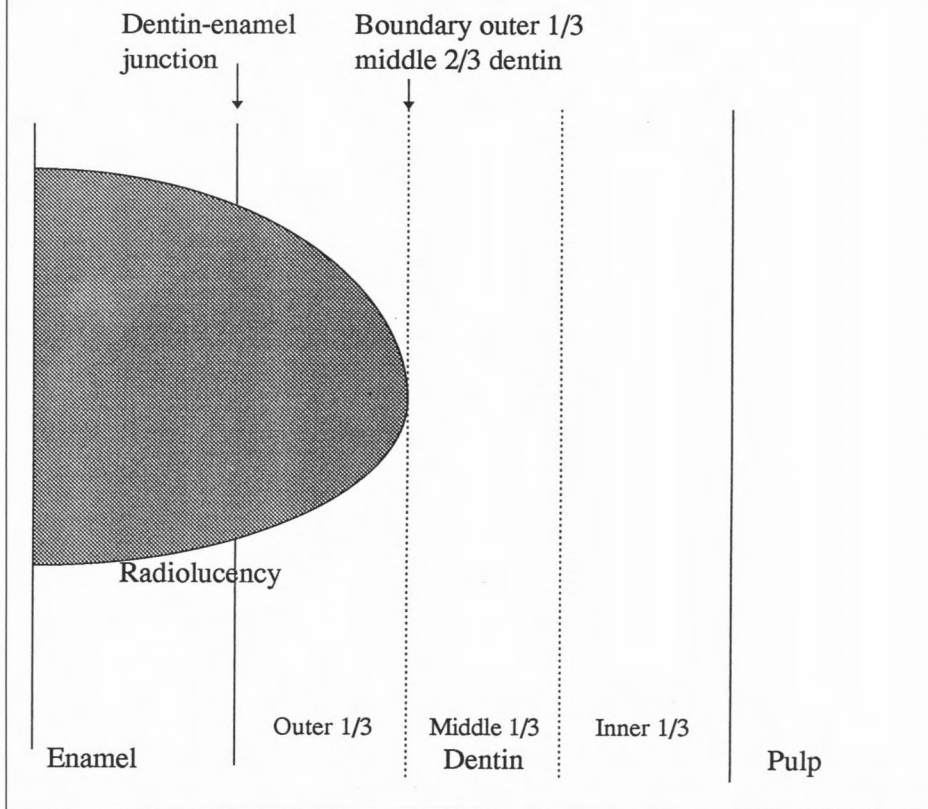
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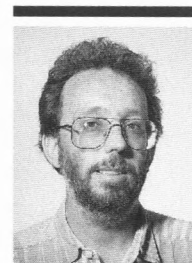
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## Figure 1. Radiographic lesion depth threshold for indicating need for an initial restoration.

Dentin-enamel junction

Boundary outer 1/3 middle 2/3 dentin

Radiolucency

Enamel

Outer 1/3

Middle 1/3
Dentin

Inner 1/3

Pulp

However, monitoring of caries progression rates is not routinely performed in a methodical way in general practice[7] with many dentists restoring enamel radiolucencies.[16] There are now many papers acknowledging that caries is a bacterial infection and that a medical—not surgical—approach is needed to control it.[17]

Although a consensus for changing the management of caries seems to be appearing,[18-23] can we predict the likely impact the change will have on treatment patterns in the dental office? Since 70% of all restorations are replacements of existing restorations,[24] a significant area to examine for the effects of change in caries management would be the decision when to place an initial restoration in a tooth. If the initial restoration could be prevented or delayed, a reduction in the number of replacement restorations could be expected.[23-25]

The aim of this paper is to create a model to predict the difference in numbers of restorations provided by conventional early operative treatment versus using a radiographic disease severity threshold as a guide to restoring adult teeth.

### Methods

A model was developed to consider a ten-year span for a generic population, based on the following information from the literature on caries:

1. Carious lesions are the result of dynamic processes which can become inactive, remineralize, or slowly progress through enamel, taking a median of six to eight years to reach dentin.[26-31]

2. Progression rates are decreasing[32] and surface cavitation occurs much later than previously observed, with only one-third of outer dentin interproximal

radiolucencies associated with surface breakdown or cavitation.[33-35]

3. In a low-risk patient, an interproximal radiolucency reaching the junction between the outer one-third and the middle one-third of dentin would be taken as an indication to initially restore a tooth.[36] (See Figure 1.) This takes into account the uncertainty of the true lesion depth which is often deeper than the radiolucency.[37,38] However, the lesion would likely be at least 1mm away from pulp and at this distance would not cause any significant pathological changes.[39,40]

4. A noncavitated but stained fissure would be sealed and only if a radiolucency was seen extending into occlusal dentin would a restoration be provided.[41]

5. In a group of adult teeth radiographically surveyed over ten years, only 20% of the interproximal lesions at the baseline examination would reach the junction between the outer and middle one-thirds of dentin, requiring restoration.[29,42,43]

6. Each year only 10% of monitored lesions would reach the radiographic threshold depth and be restored.[29-31,43]

7. For year six and above, there is a decrease in progression rates so that only 5% of lesions per year reach the radiographic threshold for restoration.[26-32]

8. Each year a proportion of the existing restorations are predicted to be replaced[24,44-46] and these are added to the number of initial restorations provided (Table 1). For simplicity, no distinction was made between the replacement rates of amalgams or resin restorations in adult patients.

Using the above assumptions, a model was built containing two imaginary groups of 1,000 adults. Each adult was assumed to have either an incipient noncavitated lesion which was radiographically detectable in the interproximal region or a stained occlusal fissure. An interproximal lucency could be present in enamel or dentin whereas an occlusal lucency is normally only seen in dentin. It was further assumed that the sizes of the lesions were normally distributed and identical for both groups.

## Table 1. Proportion of adult amalgam and resin restorations replaced each year according to age of restoration (after Mjör[24]).

| Restoration Age (years) | Proportion Replaced per Year[5] |
|:---:|:---:|
| 1 | 5 |
| 2 | 10 |
| 3 | 15 |
| 4 | 20 |
| 5 | 30 |
| 6 | 40 |
| 7 | 50 |
| 8 | 60 |
| 9 | 70 |
| 10 | 80 |

*Group I — Conventional Management*: In this group, it was assumed that every interproximal radiolucency and every stained occlusal fissure would be restored at the baseline examination (1,000 restorations). This represented the "conventional" treatment approach of early restoration of initial lesions. For this group there were no lesions to monitor as they were all restored. However, during each of the ten years, the number of expected replacement restorations was calculated according to Table 1. In year one, only 5% of the restorations were predicted to be replaced (50 restorations) which left 950 original restorations. In year two, 10% of the original restorations (950/10=95) were expected to fail, leaving 855 original restorations. In addition 5% of the replacement restorations from the previous year (50/20=2, to the nearest integer) were predicted to be replaced, making the total number of replacement restorations for year two of 97 (95+2). Thus, as each year passed, replacements of baseline restorations were predicted, plus the replacements of the replacements as they aged.

*Group II — Using the Radiographic Depth Threshold:* For Group II, the progression of lesions to the threshold depth at which restoration was needed was calculated using the following equation: Total restorations = Initial restorations + Replacements, where Initial restorations =

for t=1: baseline; for t=1...10: number in cohort minus sum of previous years multiplied by rate for that year as given by Table 1 and Replacements = sum of replacement rate for each previous year as given by Table 1. To this number of restorations were added the restorations replaced over time. At baseline it was forecast that 20% of the 1,000 lesions reached either the interproximal lucency threshold of the outer and middle third boundary of dentin or were just visible into occlusal dentin. This indicated the need for 200 restorations while leaving 800 of the teeth with unrestored lesions. At the end of year one, 10% of the lucencies were forecast to have reached the dentin depth threshold (800x.10=80), leaving 720 lesions. From Table 1 it was calculated that 5% of the 200 restorations would have been replaced. Therefore in year one, a total of 90 restorations would have been made. This model of calculating initial restorations and replacement restorations was applied to years one through five. For years six through ten in both Groups I and II, the progression rate was predicted to slow so that each year only 5% of remaining lesions were forecast to be restored. The data from this calculation were labeled Group IIa.

*Sensitivity Analysis:* To test the model for robustness, a sensitivity analysis using Monte Carlo techniques was performed. The first step in the Monte
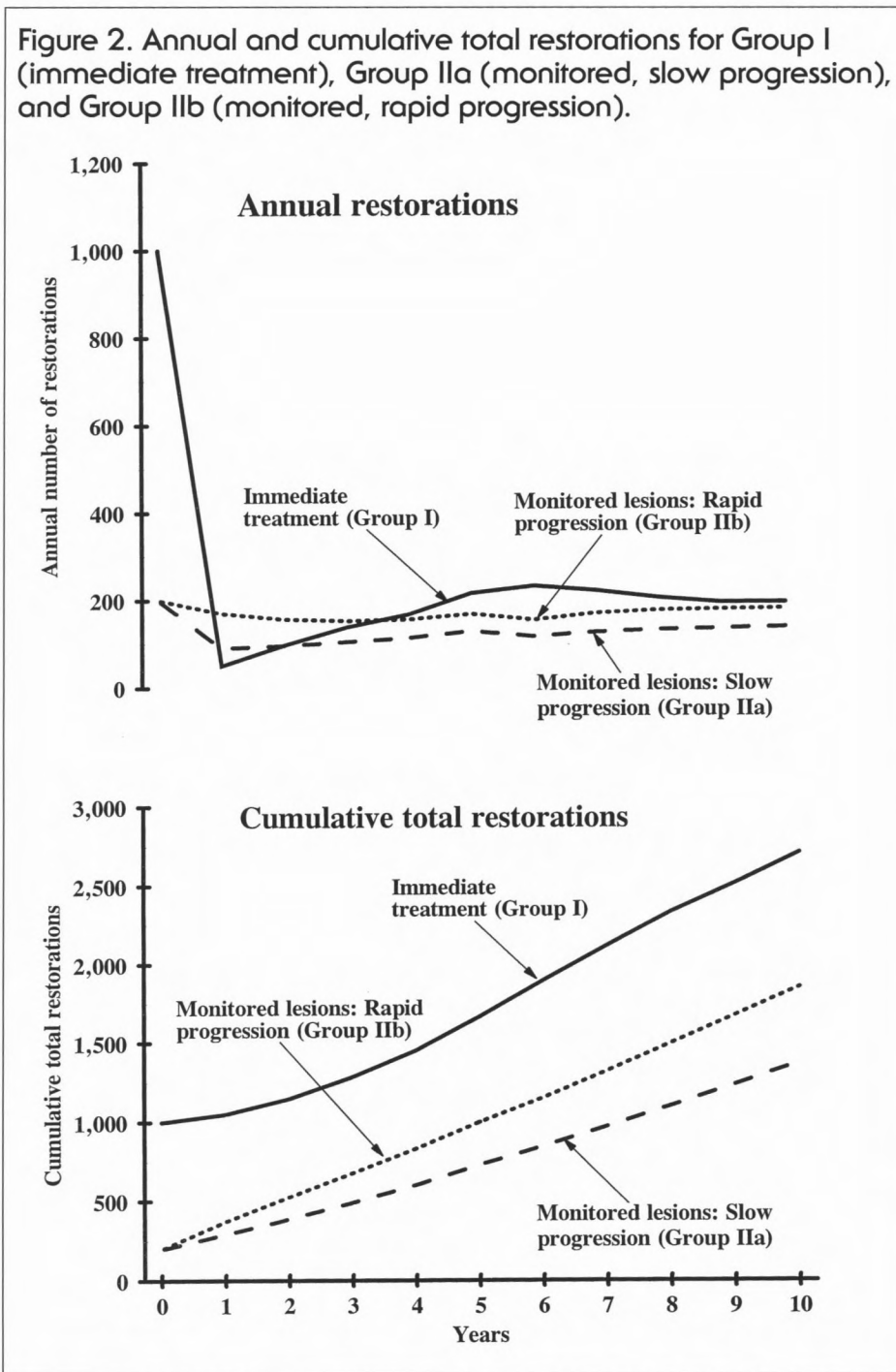
Carlo technique is to specify probability distributions for key input variables whose values may significantly affect the output. In this model, the two key parameters are the number of patients who undergo restorations at baseline and the progression rates at which the remainder of the cohort undergo initial restorations in the following years. Since the number of initial restorations provided at baseline will depend on many factors such as age and socioeconomic status of the cohort of patients and the model is a generic representation, a uniform distribution was specified with minimum and maximum values of 100 and 300, respectively. The progression rates were also specified as uniform distribution with the rate of years one through five specified as varying between 10% and 20% and the rates for years six through ten specified as varying between 5% and 10%. By being equal to or higher than the original threshold scenario (Group IIa), these rates effectively underestimate the potential benefits of using the radiographic based treatment threshold. The faster progression analysis was labeled Group IIb.

Using the specified distributions, a computer software package (@Risk; Palaside Corporation; Newfield, NY) was used to generate 1,000 iterations for the Monte Carlo model. From the results of the 1,000 iterations, the mean and fifth and ninety-fifth percentiles of the number of restorations per year were calculated.

### Results

The number of restorations and replacement restorations provided per year for both groups are shown in Figure 2. At the end of ten years, Group I was forecast to have received 1,000 baseline restorations, plus 1,708 replacement restorations, making a total of 2,708 restorations from the original 1,000 lucencies or stained fissures. In contrast, Group IIa had a total of 1,375 restorations, including replacement restorations which was 49% fewer than Group I. In addition, 367 (37%) of the original lesions were forecast to be still unrestored.

## Figure 2. Annual and cumulative total restorations for Group I (immediate treatment), Group IIa (monitored, slow progression), and Group IIb (monitored, rapid progression).



under these circumstances was 1,855, which is approximately one-third fewer than the baseline group (Group I).

### Discussion

Model forecasts are approximations, and the longer the time period projected, the greater the inaccuracies. Nevertheless, some of the review data used to construct the model were obtained from studies which ran for six to ten years.[29-31] In addition, the sensitivity results show that even using a wide range of values for the initial numbers of restorations and caries progression rates, the overall results are robust.

No attempt was made to separate the longevity of resins from amalgams or the number of surfaces involved. It would have greatly increased the complexity of the calculations to have done this and it is doubtful if the increased complexity would have significantly changed the outcome of the pooled analysis.

The model does not take into account the effects of replacement restorations which increases the size and number of tooth surfaces destroyed.[23,25] In addition, replacement restorations may result in the conversion of large restoration to crowns.[47] Therefore, when comparing the number of Group I and Group II restorations it should be appreciated that the former group will contain a higher proportion of large restorations. This means that the projected 49% reduction of restorations provided to Group IIa compared to Group I leads to an underestimation of the total difference between the groups.

In addition to Group IIa being likely to have smaller restorations than Group I, approximately one-third of the original lesions are forecast to still be unrestored after ten years. This delay in providing restorations could represent a significant financial saving to health care costs, providing that an equal sum is not expended on education, prevention, and monitoring of disease activity.

In the sensitivity analysis, the cumulative total of the means was 1,641 total restorations—1,336 at the fifth percentile and 1,922 at the ninety-fifth percentile. Except at baseline, the mean numbers of restorations per year computed from the sensitivity analysis was always higher than the original reduced-restorations scenario (Group IIa). In Figure 2, a worst-case scenario was plotted for Group IIb using 200 initial restorations at baseline and a progression rate of 20% for the first five years and then 10%. The total number of restorations provided

No attempt has been made to calculate the differences in financial impact between the groups for providing health care. The data provided here can be used as part of a cost-benefit analysis to evaluate the routine use of radiographically-defined treatment thresholds based on disease severity. In general, the total economic benefit can be defined as the reduction in number of restorations weighted by average cost per restoration minus the additional costs of monitoring. Further research is needed to determine the magnitude of costs that might be incurred due to the additional monitoring, such as the cost of extra dentists' and hygienists' time and supplies used for health education, prevention, and radiographic monitoring. However, it is reasonable to suggest that third party payer plans will need to adequately reimburse dentists for their extra time spent in prevention and monitoring caries. There will be costs in the form of continuing education courses for dentists and their support staff to implement new office regimes required to deliver novel prevention-based programs.

In conclusion, a model has been created to forecast the effects on the number of restorations provided by early initial restoration versus delayed intervention using radiographic depth threshold to indicate need for restoration. The model forecasts significant differences in the number of restorations depending on the method used for managing caries. Even when the caries progression rates were increased substantially over values reported in the literature there was still a predicted saving of one-third fewer restorations, showing that a vigilant approach should work with both low and high risk patients. Remuneration systems should be designed to support evidence-based prevention and treatment methods.

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# Raising Ethical Considerations in Treating a Growing Population: The HIV-Infected Patient

## Patrick B. Toms, DMD

One cannot discuss human problems and professional obligations today without reference to AIDS. The American Dental Association has said that a dentist has an obligation to provide care for those in need, but there is a conflict between the dentist's obligation as a health care provider to treat AIDS patients and the dentist's concern about his or her own health as well as the economic viability of the practice.[1] There is an increasing number of patients with HIV infections. Dental personnel must be properly trained to provide treatment for these people. Many articles have evaluated dentists' attitudes toward treating patients infected with HIV. Most studies conclude that a majority of dentists recognize that they have an ethical obligation to treat HIV-infected individuals, yet they are reluctant to do so.[2]

The American Dental Association believes that HIV-positive individuals should be treated with compassion and dignity.[1] Many dentists are concerned about treating patients with HIV and many patients are concerned about receiving care from a dentist in which their HIV status is not revealed. Current scientific and epidemiologic evidence indicate little risk of transmission of infectious diseases through dental treatment if universal precautions are used. According to the ADA, patients with HIV infections can be safely treated in private den-

tal offices, and the use of proper infection control techniques will protect dental personnel and patients.[1]

In order to understand the importance of treating HIV-positive patients, one should fully understand the distinction between those who are HIV-positive and those who have AIDS. Patients who are HIV-positive are usually fit and healthy, apart from the initial symptoms of sero-conversion, and generally do not develop opportunistic infections until CD4 count drops below 200. AIDS is a syndrome caused by immunosuppression, giving rise to various opportunistic infections and is not a disease per se.[3]

Every dentist has an obligation to provide safe treatment for all patients, including those who are HIV-positive. This means that all dentists should receive adequate education about HIV infection and that dental associations must provide a clearly written code of ethics. Consumer groups should be made aware that all dentists are under an ethical obligation not to refuse treatment solely on the grounds of HIV status. Dentists, patients, and consumer groups should all understand, however, that it may be necessary to arrange referral of sick HIV-positive individuals to hospitals for diagnosis of certain oral manifestations or for specialized dental treatment. Even though there are clearly written ethical codes available to all dentists explaining their responsibilities in treating HIV-infected

patients, a recent national survey has found about one-third of responding dentists were unsure of both their legal and their professional obligations to these patients.[4]

The consequences of not providing treatment to patients with HIV infections are not a question of ethics alone, but of legalities as well. Refusal to provide care for an emergency condition could pose serious legal ramifications for the dentist. If the dentist is unwilling to provide emergency care for an HIV-infected patient or has modified his or her standard of care because of the status of the individual and the patient's condition wors-



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ens, the dentist would bear the risk of a liability suit.[5,6]

The World Health Organization, the General Dental Council, and other associations are emphatic in the view that the dentist has an ethical responsibility to provide dental care to HIV-infected patients. It seems that there is a need for a reappraisal by the professions of their responsibilities in health care.[7-9] The most important step is to educate dental personnel and the general population about the minimal chance of contracting an HIV infection from routine dental treatment. Another important step is the use of CDC-approved protocol for safe and effective means of protecting the dentist,

staff, and patients. Universal precautions and education are the only ways to eliminate cross infectivity of HIV and other communicable diseases. Finally, dentists have the responsibility of helping and treating HIV-infected people in order to give them a more comfortable and enjoyable life.

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# The Future of Dentistry:
# Contemporary Issues Regarding Ethics

## Chanel Ko Wiederkehr

The moral tradition of dentistry in the contemporary world can be perceived as a dilemma of equalizing two, often opposing, viewpoints. On one side of this scale of ethics are issues related to professional standards. These standards reflect the practice of dentistry. Ethics places the patient and the best interest of the patient at the heart of providing dental care. The other side of this scale centers on profitability, the maintenance and operation of a successful practice.

Ethical dilemmas cannot be avoided. What is at stake is the balancing of clinical skills, scientific knowledge, and moral judgments related to the practice dentistry. Ethical principles require that respect for autonomy, nonmaleficence, beneficence, and justice prevail in all professional decisions. There is no doubt that the clinical practice of dentistry needs to be first and foremost a profession and only secondarily a business. Any solution aimed at bridging the gap, or equalizing these two sometimes morally divergent forces, must take into account the best interests of the patient, the best interests of the dentists, the adherence to strong ethical and moral levels of professionalism, and the economic freedom that comes from a successful practice. The solution must be found by balancing the best interests of the patient in a manner that maintains the moral and professional integrity of dentists.

During the last decade the practice and use of dental services has changed. Private practitioners are increasingly being driven out of practice or faced with developing creative ways of maintaining their practice given stiff competition from insurance companies. These huge conglomerates are able to provide services that prohibit ballooning or sky-rocketing dental costs. They are able to do this by cutting the costs of the fundamental expenses that contribute to high cost in a private practice. These changes have direct impact on patients, the practice, and the profession of dentistry.

Where does this leave patients? A recent newspaper article discussed the Patient Protection Act.[1] This act seeks to ban bonuses and financial incentives for health care providers who engage in "health care rationing." Consumer advocates of this act reason that it minimizes quality health care by denying care and initiating shortcuts and abuses. The effect of these shortcuts would be to seriously undermine quality health care.

One of the pillars of a dentist's professionalism is the kind of relationship he or she has with the patient. Society awards a special kind of trust and respect to the doctor. This trust and respect are based on the doctor's extensive training and the age-old understanding that these specialists live up to the highest standard of professionalism and ethics. Doctors are expected to act in the absolute best interests of patients. However, managed facilities often force dentists to make compromises in the quality of care provided because of financial constraints. Or, sometimes, dentists are even forced to commit fraud against an insurer to protect the interests of the patient.[2] In each instance, dentists are caught in the middle of an ethical crises! If dentists fail to provide the best possible service because of financial considerations the special trust and respect awarded by society is undermined. Once these ideals of tradition are compromised, the very core and practice of dentistry are shaken.

The dramatic changes in the profession will further increase the surprisingly high percentage of dentists who would choose a different profession if they could do it over again. According to a survey published in *Dental Economics* in February of 1996, dentists were asked the question, "If you were starting over today, would you choose the same profession?" Of the five hundred twenty-nine dentists who responded, surprisingly 54% said, "No."[3] The aspects of their profession that they enjoyed the most were working with the staff, dealing with the patients, and achieving financial autonomy. Over the last decade, many dentists have become practitioners in large insurance companies. These dentists might experience a conflict of ethics on standards of quality care and their ability to attain economic freedom. While they may gain the benefits of interdisciplinary practice and the joy of working with others rather than in isolation, they lose both the control over their earning potential and the ability to set, determine, and achieve real economic freedom.

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Consequently, many practitioners now spend less time with each patient because of the high volume of patients that are contracted with insurance companies. This scenario forces both the patient and provider into compromising positions where either quality of care is compromised or the fee paid to the service provider is compromised.

Where does this leave aspiring young dentists? Confronted with these facts, one is left to wonder whether dentistry can be practiced with the kind of professionalism and highest ethical standards to which dentists aspire. Sensitivity toward the patients' needs and realities of business requirements seem to be more at odds with each other than ever before. There is now an inherent trade-off between profit and professionalism.

One attempted solution has been the hiring of dental practitioners by insurance companies, so that proper business principles are adhered to. However, this left unaddressed the issues of quality care since these hired dentists are placed in the dual roles of loyalty to the insurance companies as well as their loyalty to their dental profession.

A more successful solution would focus on how services are paid for under the models of managed care. Oftentimes, administrators of these institutions make critical decisions about the nature of care the patient is to receive and about policies regarding reimbursement for practicing dentists. Often the administrator making these decisions may have little or no practical or clinical expertise regarding

the specifics and mechanics of providing dental care.

Furthermore, currently practicing or retired dental practitioners should be able to sit on the boards of insurance companies so that the best interests of patients will not be unduly compromised and that dentists are able to uphold the ethical standards of professionalism when treating patients. Perhaps these institutions should also include competent business people whose responsibility it would be to protect the best interests of dentists by allowing them to be adequately reimbursed for their services.

In all, though, both parties need to find a mutually acceptable strategy that allows both sides to live up to their professional standards. However, the key word needs to be *integration* of services. That would mean that both dentistry (with its concerns for high quality care and fair reimbursement) and insurance companies (with their quest to limit health care costs and maximize their profits) might need to reach equitable solutions.

I am very optimistic that these challenges can be met by consistently insisting on the highest quality of care. By giving patients options for different treatment plans and explaining limitations of insurance coverage, patients will opt to choose and pay for the best care possible. This choice will be made even if patients are required to assume the costs themselves. Over time, this would enable dentists to develop a significant number of fee-for-service patients while

simultaneously limiting the number of patients referred by insurance companies. Only in these ways can dentists achieve the highest levels of professionalism and adherence to ethical standards which ultimately allow them to achieve real economic freedom.

In conclusion to this perplexing and contemporary problem, perhaps the solution lies in the future training of dentists. Graduating dentists need to realize that only the highest professional and ethical standards are acceptable and that economic pressures can never be allowed to compromise standards of excellence. Essentially that means young dentists need to be better informed about current political and practice issues dealing with insurance companies and common contemporary problems. Contemporary dentists will require better training in how to handle and deal with the added pressures that will confront them in the 21st century. The next generation of dental practitioners should be as competent in the practical aspects of dentistry as they are currently trained to be in the clinical aspects of the profession.

## References

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# Thirty Two Terrific Teeth

## And Forty Thousand Other Reasons
## to Support the National Museum of Dentistry

### Eric K. Curtis, DDS, FACD

Horace Hayden and Chapin Harris, the Baltimore physicians and dentists who founded the world's first dental school in 1840, wanted their institution to be the most forward thinking in the nation. They would be delighted to know, more than a century and a half later, that it is also the most backward looking. With the opening of the Dr. Samuel D. Harris National Museum of Dentistry, in fact, the University of Maryland's vision from past to future is looking positively panoramic.

The country's only national museum of dentistry, which made its public debut June 22, 1996, plans to showcase the people, things, and events that shaped the dental profession. Located on the campus of the University of Maryland, the $5.8 million museum is associated with the university's Baltimore College of Dental Surgery. Its 21,000 square feet, four-story building, in fact, which is next door to the university's 18th century Davidge Hall—the oldest continuously used medical school building in the western hemisphere—was constructed in 1904 to house the dental school.

The museum is named for retired Detroit pediatric dentist Dr. Samuel Harris, FACD, whose one million dollar gift launched the endeavor. Its executive director, Dr. Ben Z. Swanson, Jr., FACD, is an internationally known historian who earned a rare master's degree in the his-

tory of dentistry from the Wellcome Institute for the History of Medicine in London, England. Dr. Swanson, a past president of the American Academy of the History of Dentistry, spent nearly ten years with his staff amassing and analyzing the physical evidence of dentistry's progress.

The inaugural exhibition, titled "32 Terrific Teeth," represents the culmination of that decade-long labor. No stuffy, aimless accumulation of relics, the museum's presentation is lively, relevant, and tightly focused. The exhibit displays some 750 artifacts and graphics from the museum's 40,000 item collection. It encompasses 7,000 square feet, spans two floors of the building, and is divided into eight conceptual areas.

The entrance is punctuated by a dramatic, life-size mannequin of a circus performer hanging upside down from the ceiling on a trapeze performing an "iron jaw" act: she holds the exhibition title lightbox panel shaped like a weight suspended from her teeth. Just beyond lies the exhibition's first section, which reviews the popular culture of teeth. A movie poster of Jim Carrey grinning his startling big-teeth grin from *The Mask* draws the viewer into an examination of the smile profiles of entertainment celebrities. Andy Warhol's multiple silk screened versions of dental patron St. Apollonia look across the way at an

original watercolor political cartoon for *Time* magazine portraying President Bill Clinton as a dentist. On the far side of the room, old film segments portraying dentists, including a famous Little Rascals sequence, play on a big screen.

In the second section, which outlines the origins and evolution of teeth, the Molar Motors chewing machine, used at the University of Minnesota to test the strength and durability of dental materials, turns on at the push of a button. There are shark's teeth, elephant tusks, and animal skulls. A display titled "Stones, Stews and Sugars" discusses diet and teeth.

The third section explores components of preventive dentistry, including the story of fluoride. (The museum has Robert F. Kennedy's home fluoridation unit.) The evolution of the toothbrush is artfully laid out, and Sugar Ray Leonard's mouthpiece is here. The traffic flows around Queen Victoria's personal set of pre-sterilization era, mother-of-pearl den-
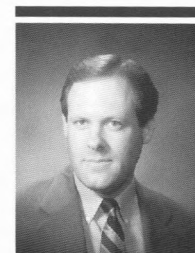
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tal instruments, complete with silver mounts shaped like miniature crowns. A unique mouth-shaped Tooth Jukebox shows vintage television commercials and still advertisements. Visitors can choose from toothbrush, toothpaste, floss, and mouthwash commercials by pressing any of the jukebox's numbered teeth.

The museum's fourth area discusses the many dimensions of providing dental care. A display of 1,100 year old Mayan turquoise and jade dental inlays reveals that pre-Columbian Americans—perhaps the first cosmetic dentists—were skilled manipulators of the bow-driven drill, which was not common in Europe until centuries later.

It pays to look at the museum's details. Some are subtle. A grand staircase leads to the second floor galleries. Its mahogany banister is supported by clever balusters in the form of 18th century claw-foot extraction elevators. Other details are spectacular. In the center of the staircase three antique dental chairs, one on top of the other, are suspended from the ceiling, like a giant, sectional, high tech glass and steel macramé hanging.

G.V. Black's dental office is reconstructed upstairs. But that dental pioneer is not the only inventive dentist profiled. Included also is a display celebrating dentists who have contributed non-dental innovations, such as chewing gum, the cotton candy machine, and golf tees. One 19th century Pennsylvania practitioner, Craft Carroll, was an authority on dental metallurgy who figured out a way to top off the Washington monument. He invented a process for casting aluminum to form the pinnacle—a design problem that had stumped the monument's architects. Another dentist, prohibitionist Henry Daniel Cogswell, commissioned some of the nation's early public water fountains. Hoping that thirsty passersby would lap up water instead of heading for saloons, Cogswell erected water fountains in the 1870s and 1880s in Boston, Buffalo, Rochester, San Francisco, and Washington, DC.

The fifth area of the museum is all about the first First Teeth. George Washington never wore wooden teeth, but perhaps his pained expression on the one dollar bill was due to his dentures. Gathered from the New York Academy of Medicine, the Royal London Hospital, and the Mount Vernon Ladies Association, all of Washington's known dentures, except for the set buried with him, are reunited for the museum's opening. The existing four dentures, mounted with ivory or human teeth, including one with Washington's own molar, are featured in an 18th century-inspired room.

Washington's dentures are the museum's "key object, our icon," says Dr. Swanson. They have also been the subject of modern intrigue. The one set owned by the University of Maryland was stolen in 1981 while on loan to the Smithsonian Institution. The lower plate was later found in a Smithsonian storeroom, but the uppers, which have never been recovered, presumably were melted down for the gold.

The museum's sixth area is the ADA Video Theater. The seventh is a changing exhibit room; the initial offering highlights photographs of early dentistry. The images reveal the American dentist as practitioner, inventor, public figure, and humorist. An eighth area in the museum, the Crest Learning Hall, includes five interactive computer stations dedicated to teaching the most current information about dental prevention and treatment. The exhibit's design firm, Miles Fridberg Molinaroli of Washington, DC, planned the presentation to reflect the history of dentistry, its presence in popular culture, and also to provide educational experiences aimed at preventing dental disease and encouraging good oral hygiene.

In fact, although the museum, which anticipates 40,000 visitors a year, will serve dentists well, its emphasis is on educating the public. Plans are in the works for serious study resources, including a library, as yet not named or funded, to house the museum's collection of rare books. However, "If we did it primarily as a scholarly effort," says Dr. Swanson, "dentists would enjoy it but the public wouldn't come." The museum opening caught the media's attention immediately. "Why would anyone visit a dental museum?" joked talk show host Jay Leno. "To remember our roots," riposted ADA president Dr. William Ten Pas at a black tie gala the night before the opening. "I am particularly interested," said Baltimore mayor Kurt Schmoke, "since I am in a profession that emphasizes smiles."

The museum's broad appeal is already evident. "Who said dentistry isn't colorful? Who said dentists aren't imaginative or funny?" wrote one reporter who covered the opening. "You'll be delighted to keep your [dental] appointment after you've visited the National Museum of Dentistry," wrote another. "This museum is informative, educational, and it's fun," Mayor Schmoke concluded as he toured the exhibits. "Call it 'edutainment.'"

Call it perspective, too. "No society racing through the turbulence of the next several decades will be able to do without specialized centers in which the rate of change is artificially depressed," wrote Alvin Toffler in his 1970 classic *Future Shock*. "To phrase it differently, we shall need enclaves of the past..." As an enclave of the past and an interpreter of the present, the museum also becomes an effective muse for the future. "This can remind us how far we have come and how we got here—the education, dedication, science, and research," said Dr. Ten Pas. "This encourages us to continue to grow." The faster things change in the profession, the more important the National Museum of Dentistry will become.

The American College of Dentists is a Founding Benefactor of the Dr. Samuel D. Harris National Museum of Dentistry. The museum is located at 31 South Greene Street, Baltimore; (410) 706-0600. Hours are Wednesday through Saturday, 10 a.m. to 4 p.m., and Sunday 1 p.m. to 4 p.m. Admission: $4.50 adults and $2.50 seniors, students, and children; kids six and under are free.

# The Clean Desk

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

What would you think of an office that was about one week behind in its productivity but spent only 5% of each day catching up? And what would you think if the employees in that office spent one hour wandering around looking for things for every two they spent accomplishing something?

According to Dan Stamp of Priority Management Systems, the average American desk has thirty-six hours worth of work on top of it; and those who own these desks spend one and a half hours per day working on this backlog and forty-five minutes looking for things there. Many readers will have a more orderly desk than this. But since it is an average, I know there are some who will be reading this column in 1998 and are even now nervously clearing a little space on the desk because there might be something worth working on here.

Admittedly, this is a touchy subject. Some people love their messy desks; or at least they recognize the apparent futility of ever having a clean one, and so they put up that funny little sign about sick minds. Some of my friends say they know where absolutely everything is on their cluttered desks. Since I am a "sick mind" clean desk person, I often challenge them on that claim. Don't bet on it. Most of the time the brave attempt only destroys the chronological layering of papers. Certainly, there are instances when the owner of a messy desk functions like a heat seeking missile, but this is such a remarkable occurrence—like winning the lottery—that they are tempted to talk about it for weeks.

Its hard to get a good handle on the desk because it serves multiple purposes. It is a two and a half by four foot in-basket. It is the nerve center of our operation. It is where we greet people to impress them with what we do. It is a single drawer filing cabinet. It is a living monument to who we are. We cannot change it without changing ourselves and the way we work.

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So what does your monument have to say about your work style? Try the following test to see if you meet the standards of office efficiency experts. Use a pencil and a piece of paper; start from one corner of your desk and work systematically across it. Score yourself according to the following scheme: Each appointment for today entered on your calendar +2 (Bonus: labeled binder or folder with all material for each appointment +10); Project you are currently working on, if all items are not touching any other project +5; Items appropriately placed in "to file" or "action" baskets, up to twenty items +1/2; Obscured tools or decorations (photographs that are covered, pencils under books, buried appointment calendars, etc. -5; Each project or part of project that has been started and abandoned -4; Each piece of paper that is waiting while you decide what to do with it -3; Each piece of paper that is waiting to be filed but is not in a folder or drawer labeled "to file" -3.

Efficient desks score positive. Most people can function effectively in the minus 20 to minus 40 range. If your score goes below minus 100, stop immediately. You should also stop if at any time during this project you jumped from one side of your desk to another, abandoned the project without being interrupted, or started making notes about how you can improve your office organization.

### The Key to a Clean Desk

The basic principle of personal productivity, whether time management, personal or public work space, or bottom-line productivity, is to design an environment that favors the kind of functions that are important to you. The owner of a desk works for it in two ways. First in designing what the desk should do and how it will do it and secondly working with the desk on a daily basis to ensure that the design function is carried out. If the first task is not done well, the second one will be frustrating and inefficient or a complete failure.

Now it's time to do another office audit, this time focusing on the functions of your desk. This will not be a description

of how bad things are but a prescription for what you want. It will also be helpful if you can involve some good friends.

First make a list of all the things you use your office and in particular your desk to accomplish. Most people come up with a list something like this: Greeting people and holding meetings, a place of retreat where I am in control, the nerve center of my operation, the place I do creative work, and where I store things. Add any additional functions that are important to you and then rank order these in terms of importance.

The audit comes in judging how well your office succeeds in each of these functions. You might ask a close friend to come with you into your office and comment on what the office says about its incumbent. You might also bring the topic up with visitors to your office. You can say "I am taking a course, and my teacher has given me the homework assignment of asking visitors to name three words that describe how they feel in my office." Of course this isn't true, but it is a good way to get others to be candid. No "yeah, buts" allowed; just listen. Tell people you are thinking of making some changes in your office and suggest a few along with the reasons you think they might work. Get them to react.

When your office is the nerve center of your operation, it should have the following characteristics. You should be able to make decisions there confidently and quickly. No phone tag, no lost messages, no missed appointments, no embarrassing oversights, and no panic about how big your workload is. If you are serious about this one, start a list and record each time a ball is dropped and what might have prevented it.

For many, the office, and especially the desk, are a retreat and a source of comfort. This can be tricky. Individuals with a strong sense of control feel more comfortable in an organized and neat office. Reactive people who enjoy experiencing situations tend to load up their desk no matter what else they do to try to stop it. Some people who lack confidence about their performance clutter

their offices and pile their desks to reassure themselves about the importance of what they are doing. I have even seen conspicuous cases of strategic clutter designed to prove to their bosses that employees are busy and no more work could possibly be assigned to them. The essential question is, Does the office draw you to it or is it something you avoid?

To evaluate the office function of creative work place, the diagnostic questions should focus on the need for avoiding interruption. A creative work place is free from uninvited external distractions and free from the self inflicting interruptions caused by not having all the resources one needs when ready to go to work on an important project. Again, this kind of audit can be easily done by making a list of the interruptions as they occur and looking for patterns in them.

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Auditing for the effectiveness of filing in your office can be done in the same fashion. There are three kinds of errors one can make with regard to filing: Throwing away the things you should have kept and keeping those things you should have thrown away, thereby wasting time and clogging your system so you can't find the things you have kept. The third error stems from a sincere effort to avoid the first two problems; inability to decide whether something should be kept or not and an inadequate or nonexistent filing system which lead to just piling things up. If you did the paper audit of your desk as suggested at the beginning of this column, you should have a pretty good feel for whether your office is functioning effectively in this regard.

## Work Flow Design

There is an alternative way to penetrate to the soul of an office and reveal its central structure. This is to follow the flow of work through an office to see where decisions are made in speeding the information and where it bogs down. Here the essential rule is "form follows function," and office features are designed to streamline and make more effective the typical office procedures. Books have been written about office functions, and long lists of functions have been compiled. For most purposes it is satisfactory to consider only four primary functions; input control, work space, work in progress, and backup.

Many office messes can be traced to a weak or nonexistent input control for incoming information. Executives who are careful to have their assistants screen callers and visitors can be remarkably careless in what written information gets through and even the haphazard way in which the owner of the desk allows things to get in front of him or her. First rule: There should be an in-basket and it should never be on the desk or even in the same room as the desk if that is possible. This provides two advantages. It cuts down distractions and allows the person working at the desk to turn his or her attention to incoming requests when ready for such stimulation. It also focuses the triage function at a specific time and location when it is more likely to be done effectively. Tickler files are especially useful to control information input. They are timed-released requests. A special place in one's filing system or an accordion file works fine for storing requests that should be attended to at some future date or to remind you to follow up on requests you have made to others. It's also a great place to put reminders of regularly occurring events such as quarterly estimated taxes or birthdays.

*Information capture* is the process of accepting responsibility for a request. Using the same principle as the external in-basket and the tickler file—that is re-

ducing memory burden—I make it a general principle to capture all requests on a piece of paper. In the case of letters or material I have to read, this has already been done for me. Phone conversations and visits with people are recorded in detailed messages. I even make notes to myself at meetings. An important part of this process is to make certain that each different request is on a different piece of paper. This is necessary because they will be sorted, worked on, and filed individually and it is a burden to recopy lists.

Triage is the final and most important operation in input control. Because each request has been reduced to a single piece of paper (or in some cases several pieces stapled together), triage is literally sorting these pieces of paper and placing them in predetermined files depending on their function. It is a hard rule, but true, that it is a waste of time to sort if the categories don't already exist. There are probably only four categories that make sense, allowing for elaboration within some of these. For example, the major category and the first response one should think of is to reject the request and trash the piece of paper. The major subcategories here are recycling (I have one drawer in my desk devoted entirely to that) and the trash can. The second category is delegation or transfer. Here a short note such as "Ralph, please reply to this letter" or "Paul, please read and file" is all that is needed before sending the request back out of one's office. The third category is information to be filed, and it should be filed as quickly as possible. This leaves only the category of tasks which you have agreed you will do but cannot handle now because of missing information, insufficient time, etc. These are the ones that need to be carefully tracked because they involve the largest psychological burden.

*The work space*, the desk surface itself, is uniquely designed to focus its owner's attention on one task—creative work. It is a lousy design, for example for equipment storage or filing. And desks that are focused on one task at a time work better than cluttered ones just like focused

minds or single function computers are optimally efficient. Equipment such as files, telephones, computer, fax, and photocopy must be convenient, but they may not have to be on one's desk. In both of my offices, the only permanent equipment on the desk top is the telephone, flowers, and a Bible.

*Work in progress* files represent what you have promised to do but haven't gotten to yet. Besides the obvious principle that work in progress should be stored in a regular place other than the top of the desk, there are two rules that can be of great help. First, the parts of projects should all be kept together and second, all work in progress should be tagged.

A practical way to keep work in progress organized is to place it in folders or binders. When I am on the phone discussing for the first time with someone a request to make a presentation, I am busy taking notes and also creating a folder with the name of the event. From that point on, everything relative to that presentation goes in the same folder and it is the last thing I take with me as I board the plane. Major projects or recurring ones can frequently be handled more effectively in three-ring binders. It is occasionally objected that some documents should not be punched and other items such as computer disks are awkward to store in this format. There are inexpensive commercially available sleeves and pockets which can be added to binders for this purpose.

One of the drawbacks of work in progress is the startup costs associated with tasks that are spread over several work sessions. This burden can be lessened through a process called "tagging."

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Each work session should be ended by pulling together all of the material for the project and placing it in its folder or binder along with notes—tags—designed to encourage a fast start the next time the project is picked up. Examples of tags include questions about unresolved mattes that interrupted the project, a short list of the next tasks to be done, or even a carefully crafted topic sentence for the next part of a speech or report.

*Filing*, creating a systematic storage system for documents whose use is uncertain and unpredictable, is an enormous subject. If I remember the Biblical story correctly, the first task God gave Adam was to categorize and name animals and other things. We are still trying to get this one right. There are three basic categories of backup or support files: resources, finished work, and shared access files.

Resources include manuals, dictionaries, lists, and other procedural or reference material that is useful in an unpredictable fashion for creative work and for responding to inquiries. The principles of organization are that their grouping and proximity to the desk should be determined by their physical characteristics and the frequency of use.

Finished work, including correspondence and reports, are best stored in standard format in filing cabinets with labeled files. A sampling of common wis-

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dom for making finished work files more effective includes the following suggestions. Prune all files before storing them. Place the files in chronological order with the most recent material at the front. Make certain the file has names, addresses, phone numbers, and other refer-

ences necessary to reactivate it quickly should that become necessary. If the files are numerous or if more than one person is likely to be using the same files, a master list of file headings should be created. This can easily be done and updated on computers and is a useful way to avoid the problem of starting two or three different files for the same material because you cannot remember what you called the first one. As a general rule, it makes filing easier if all labels begin with a noun. In some cases it is necessary to have the same material in more than one file. This makes retrieval and startup much easier and can be accomplished by duplicating the material if it is not extensive or by placing a card cross referencing to the location of the material in all related files.

In most work settings, critical files are shared among several individuals. This is certainly the case for patient records, for billing information, and, in general, for files of customers. All of the same rules for filing apply to shared and to individual files, but in addition, common access files have additional requirements.

There should always be a written catalog of file headings and it is helpful to designate a single individual as the file man-

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ager. Additionally, for both practical and legal reasons, it is necessary to have written policy for shared files on who has access, security procedures, who is allowed to update files, who is allowed to purge files, and who is allowed to borrow them.

## It Ain't Easy

A clean desk is useful in many ways but seems out of reach for many. The truth is that it is a habit that is better achieved through designing the environment and honing one's work skills than through effort and determination. One of our nation's leading experts on sound work habits, Benjamin Franklin, found this to be the greatest challenge he faced. He resolved early in life to perfect his character and worked for years to improve his resolution, frugality, justice, humility, order (in his office) and nine other character virtues. As he reports in his autobiography, he settles for a "speckled" record with regard to the clean desk. "Order with regard to Places for Things, Papers, etc. I found extremely difficult to acquire. This Article therefore cost me so much, and I made so little Progress in Amendment, & had such frequent Relapses, that I was ready to give up the Attempt and Content myself with a faulty Character in that respect."

## Recommended Reading

* Hemphill B. *Taming the Office Tiger: The Complete Guide to Getting Organized at Work*. Washington, DC: Kiplinger, 1996. ISBN 0-8129-2712-5; 170 pages; about $13.00.

My vote for the best, brief treatment of why offices are messy and how to get them organized. Practical advice on what to do and how to get started. Sound suggestions about the mechanics of filing, working from a home office, traveling and attending conventions, and even sharing an office. Male readers will get a sense of what it must have been like for women up until a decade ago—all the concrete examples are about female executives. Breezy, light, full of cartoons and quotes.

* LeBoeuf M. *Working Smart: How to Accomplish More in Half the Time*. New York, NY: Warner, 1979. ISBN 0-446-35356-6; 272 pages; about $6.00.

Clear case for the point that hard work is no substitute for smart work. Does a good job of relating office structure and effort to the objectives of one's work. Topics covered include goal setting, getting organized, mastering time wasters, and working with teams.

Mackenzie RA. *The Time Trap: How to Get More Done in Less Time*. New York, NY: McGraw-Hill, 1972.

One of the pioneering popularizations of time management; still eminently readable because it is so straightforward and practical. Discusses reasons for time management, self-management, planning, organizing the office (too much emphasis on will power for my tastes), handling interruptions, making decisions, and working with people.

Moskowitz, R. *How to Organize Your Work Life: Proven Time Management Techniques for Business, Professional, and Other Busy People*. New York, NY: Doubleday, 1981.

Similar to the Winston book, but weaker in help for managing paperwork; there is a useful chapter on the work style of the professional.

Mayer JJ. *Winning the Fight Between You and Your Desk: Use Your Computer to Get Organized, Become More Productive, and Make More Money*. New York, NY: Harper Business, 1993.

This was a "must buy" a few years ago for anyone considering the purchase of a home-office computer. Mayer is the man who has organized the desks of some of America's top CEOs. The book is now a bit dated as to specific software, but his inventory of management tasks that can be automated (appointments, addresses, communications, productivity, etc.) is still a useful structure for thinking about computerizing one's office.

Strati S. Aesthetic understanding of organizational life. *Academy of Management Review*, 1992, 17, 568-81.

Academic discussion of the contribution of the physical impression of the office to corporate culture, its role in establishing expectations, and influencing decisions of those who work and visit there. Detailed analysis of a CEO's office and the secretary's office.

*Winston S. *The Organized Executive: New Ways to Manage Time, Paper, and People*. New York, NY: Warner, 1983. ISBN 0-446-38384-8; 350 pages; about $10.00.

Covers broader topics of task management and delegation, but has very strong chapters on following the flow of paper work, reducing the burden of paper, and filing. Many case studies, detailed examples, and self-tests. Easy reading and clear structure for those who want specific help.

### Editor's Note

*Summaries are available for the three recommended readings preceded by an asterisk (\*). Each summary is about four pages long and conveys both the tone and content of the book through extensive quotations. These summaries are designed for busy readers who want the essence of these references in fifteen minutes rather than five hours. Summaries are available from the ACD Office in Gaithersburg. A donation to the ACD Foundation of $15 is suggested for the set of summaries on organizing your office; a donation of $50 would bring you summaries of all the 1996 leadership topics.*

The *Journal* invites comment on "Helping Others—Helping Yourself." Views should be 400-800 words and should be faxed to the Editor (David W. Chambers) at (415) 929-6435 no later than November 6, 1996. Submissions will be peer reviewed and edited to fit with other responses. The most useful combination of responses will be published in the December 1996 issue of the *Journal*.

## Helping Others — Helping Yourself

It was a rather pointed discussion for two dentists who had been classmates and such good friends. "I have heard," said Ray, "that you have been claiming some very impressive results." (But his face showed skepticism bordering on sarcasm rather than admiration.) "The people who have been to your courses all claim great success, but I haven't heard anyone else talking about this new root canal paste."

"Well, you know how dentists are," answered Al. "I call it the NIH syndrome for 'not invented here.' If they didn't think of it themselves, there is a tendency to discount it. But this is really more sophisticated than people realize. That's why I have only licensed one company to sell the paste and I control the production very carefully. Otherwise quality would go to pot as industry tried to put profit above scientific integrity. And the extensive training at my workshops is necessary to prevent mistreatment by dentists who only understand part of the procedure. Unless they have been certified in one of my courses, there's no way the safety and efficacy of the treatment can be guaranteed."

Ray remained unconvinced. "I've read what's supposed to be in that paste, and I can't understand how it's supposed to have the effects you claim. And a friend of mine at the university said he read several studies that tried to replicate your results and they have not been able to do it."

"Of course they haven't," answered Al, almost victoriously. "Every so-called study has been flawed in at least one fatal fashion, often in several. Not one of the researchers has been certified by me as even being competent in the techniques. If you subscribed to my newsletter, you would see the evidence, much of it testimonial from hundreds of successful practitioners but some of it rigorous clinical trials as well, that supports this program."

Ray just scrunched his face like he was watching a car accident on television. Al interpreted his thoughts. "I'll bet you're worried about the risk, about trying something new on patients. Every honest professional is concerned about that. We all are concerned to 'do no harm.' But harm can be passive as well. I have no idea how many root canals were caused iatrogenically by excellent clinicians who insisted on the conservative treatment of gold foil."

"No," said Ray, "I wasn't thinking of that. I was just wondering how the scientific and professional aspects of this program you are promoting can be reconciled with the financial rewards that must be involved. And quite frankly, I am bothered by your use of FACD after your degrees in the advertisements I have seen. I don't begrudge anyone the success they deserve; I just don't know how you can draw the line."

"Oh, Ray. I'm a little hurt at this coming from you. In school you were the man with the golden hands. And everyone says you have a practice built on the highest standards of technical quality. I would be amazed to hear anything else. I also gather that you have done quite well for yourself besides. What's the difference between your profiting from technical acumen and me profiting from scientific skill? In both cases, our contributions to patients far exceeds our compensation.

"I just don't know how to answer you on the FACD thing. I know some people don't like it, but as far as I can tell, it brings honor to the College as well. There is nothing false or misleading in telling others about an honor that I have earned. I am quite comfortable with the place I have drawn the line between service to patients and personal reward. I see no necessary conflict here."