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Demographics
1998 Annual Meeting
& Convocation

Journal of the American College of Dentists

A Publication Presenting
Ideas, Advancements, and
Opinions in Dentistry

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Mission

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

Objectives of the American College of Dentists

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.

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FROM THE EDITOR

Giving

Giving is a compact with the future. It is an attempt to tip the scales in favor of our own view of how the world should be. The motives for giving are as diverse as pity, vanity, charity, piety, gratitude, peer pressure, or the desire to win one round with the IRS; but the goal is always the same—a desire to live or have our families or generations we care about live in a world with less poverty and disease, hatred, ignorance, threat of violence, or ugliness. Giving is a way to bring about a future more to our liking.

Personally, I have no problem with people attributing any motive to their giving that makes them feel comfortable. Modesty keeps that sort of thing in line. What matters is the conversations we have about the future and making opportunities available for individuals with a “giving heart” to participate.

Religious groups, service groups, the Salvation Army, Donated Dental Services, education (including dental schools), the American Fund for Dental Health, Oral Health America, and even our own Foundation, are all examples of organizations dedicated to the future. They may honor the traditions of the past, but they aim to serve the needs of the next generation. They represent visions of how the world could be better,

and as such they deserve our attention, and if the pattern fits with our vision, they deserve our giving.

Just as the motives for giving vary, so do the ways we can give. Money is always nice—it is so negotiable. But service can express and accomplish the same aspirations; and it has the added benefits of intrinsic satisfaction and closer contact with the emerging future. Dental care for disadvantaged individuals and in underserved countries, serving on the board of a community center, church mission work, and driving for Meals on Wheels are just a few examples. At the recent meeting of the Board of Regents of the College in San Francisco, the theme of service was sounded often. It will become part of the witness of the College in the next years. And why not, every Regent and Officer has been involved in and enriched by personal involvement in this kind of service—from Central Asia to local soup kitchens.

Committee work and involvement in organized dentistry are forms of service. No one makes the three-hour drives for component society or peer review meetings or takes the “red eye” to Chicago to sit in committee meetings because it makes them young or beautiful. Because of some of the issues that must be handled for the good of the profession,

it may not make us popular either. And it is invariably a personal expense. The foregone income and personal expense of members of state boards of dental examiners are substantial, but small compared to the financial sacrifices of dentists who choose education or research and instantly cut their lifetime income in half. Of all the reasons we might acknowledge individually, the common thread is a desire, often a passion, to make the world of oral health better.

And then there’s the line about “I gave at the office.” A few dollars every month for the United Way is good, but most professionals I know give at the office in a much more telling way. In hundreds of small decisions every day about patients and staff they are creating a positive and caring environment. Their habitual behavior reflects the vision they have for the way people should treat each other.

The ritual associated with giving is meaningful. In the most public forms of giving, there is celebration, acknowledgment, decorum, and often a sense of fun or even competition. Auctions, Monte Carlo nights, and raffles are all popular because they combine these elements. They also create a sense of solidarity and validity around a common cause.

I don’t think anyone could prove me wrong if I asserted that generosity is a

fixed attribute of human nature, at least among adults. There are generous souls and there are those who have a little deficiency in this area. And of course, there are those who are overflowing with giving piled upon giving. Fund raising organizations make a mistake when they think they can make a regular giver out of an abstemious one. The reason Dickens' story of Ebenezer Scrooge warms our hearts so is that such conversions are so rare and unexpected. The purpose of fund raising should be to channel giving, to articulate a vision of the future that people believe in, and to make the means of contributing to that vision accessible.

What about the American College of Dentists? It is by definition a giving organization. Read again the objectives of the College. They are printed on the first page of every issue of the Journal. See if you don't agree that a world that embodied a fuller realization of these objectives wouldn't be a world that you would prefer. Only one of the objectives speaks to the College as an honor society; all the rest is about creating a better future.

Over the past six years I have seen the College gradually shift the balance of emphasis toward programs that articulate and bring about professionalism and oral health. LeaderSkills training, a white pa-

Sponsors of Ethics Summit I (in alphabetical order)

3M Dental Products Division

A-dec, Inc.

American College of Dentists Foundation

Colgate-Palmolive Company

Delta Dental of Missouri

Delta Dental Plans Association

Henry Schein, Inc

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Lord's Dental Studio

Oral Health America (American Fund for Dental Health)

The William J. Gies Foundation

per on ethics and managed care, summer conferences, and journalism designed to encourage discussion of the important issues facing the profession are examples. Hand in hand with this future-oriented program are opportunities to channel giving toward these visions. The Gallery and the Silent Auction are two notable examples. Another, just announced, is the American College of Dentists Foundation Endowment Fund. This has been discussed in *News & Views* and repre-

sents a commitment on the part of the leadership of our College and Foundation to "invest" in programs that advance our objectives. By their nature, endowments contain a protected corpus and spin off earnings for future projects.

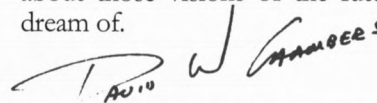
Another promising initiative that has historical precedent for the College is Ethics Summit I. The College has sounded a challenge to other groups in oral health to explore the extent to which ethics and professionalism (as opposed

to legislation, politics, economics, or litigation) can become a common ground for advancing our common cause. The first results are very encouraging and it has been recognized that the College can effectively assume the role of convener, encouraging partnerships throughout the profession. Fifty-six organizations participated in Ethics Summit I and the planning group exploring future activities

is correspondingly representative. So was the giving that provided the financial base for that meeting. The sponsors are listed here. They have expressed their belief in a future of the profession that is based on ethics and professionalism.

A giving heart is a common characteristic of all Fellows. That is why you were selected. It is one of the unwritten criteria that is judged by the tangible

commitment to service and leadership that all Fellows demonstrate. The College is pledged to keep faith with its Fellowship by providing opportunities to bring about those visions of the future they dream of.

A handwritten signature in black ink, appearing to read "David W. Chambers".

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



Letters to the Editor

To the Editor:

In contemplating important ethical issues for the dental profession, many of which are addressed on an ongoing basis by the ACD through its publications and activities, I am continually struck by the heavy burden the business-profession dichotomy imposes on individual dentists. One of my professors in dental school dubbed this the "business-profession conundrum." In many ways, it may be the root of all evil for the profession. While all professions that sell services may be subject to this conundrum, dentistry is likely under the greatest pressure as a result of the "cottage industry" independence it has guarded so closely. Dentistry juxtaposes individual professional responsibilities to patients and the profession at large against individual business interest and the prevailing business culture of dentistry on virtually a continual basis. As such, dentists must make choices between their personal perception of optimal business practices and dental professionalism all of the time. There is a delicate balance in all of this. Too heavy on one side and the financial viability of the practice may be threatened. Too heavy on the other side and the health and trust of the patient and the public are at risk. Undoubtedly, this creates a great deal of stress for conscientious dentists, either as difficult cases arise or simply from the continuing accumulation of endemic stress. It would be helpful if one could be assured that decisions are always made with only the interests of the patients in mind, but this would be self-deluding.

A prime current example of this business-profession conundrum concerns the role of dentists in addressing tobacco use by their patient. That tobacco use compromises oral and general health and the potential for oral health care services can no longer be questioned on serious scientific grounds (unless of course, one accepts the tobacco industry's science). And yet, there is ample evidence from state and national surveys as well as from anecdotal discussion with dentist and auxiliary personnel, that tobacco education and cessation services of a professionally-competent quality are not routinely available to the American public through their dentists or physicians! Given the national morbidity and mortality from the use of tobacco, scientific evidence of the effectiveness of clinical tobacco-cessation techniques, and the over 100 million dental patient visits each year by tobacco-using patients, this situation is not acceptable.

Numerous reasons have been cited for why dentists do not routinely address tobacco use by their patients, including: "It's not my job," "I'm not paid to do it," "I don't have time," "It doesn't work," and "I don't want to offend my patients." Maybe an even more important reason, not overtly stated but evident in surveys is "I haven't been trained to do it" or "I don't have confidence that I can do it effectively."

One can envision at least five dimensions of a dentist's responsibility to his or her patients and the public regarding tobacco:

- The dentist as health scientist: With regard to tobacco use by patients, dentists need to understand the pharmacological basis of tobacco and its constituents, the oral and general effects of tobacco use, the impact of tobacco use on dental care and its outcomes, and methods of reducing or eliminating tobacco use by patients.
- The dentist as skilled and caring clinician: Dentists have ethical responsibilities of both beneficence and non-maleficence toward their patients. Thus, they are required to take actions intended to provide direct benefits to their patients, e.g., improve oral functioning, arrest disease, reduce risks of disease, as well as avoiding harm as a result of their interaction with patients, e.g., infection control, appropriate use of drugs and materials, adequate clinical skill. With regards to tobacco, dentists must seek to detect patient tobacco use through medical and dental histories and clinical examinations, determine and inform patients of any oral health effects from tobacco use, counsel patients about the need to stop using tobacco, and offer to treat or refer patients for tobacco cessation, including education, pharmacological, and behavioral intervention as appropriate.
- The dentist as teacher: Dentists are, to a great extent, surgeons by virtue of their training. At the same time, they are diagnosticians and teachers. The term doctor classically means teacher. Similarly, trained dental auxiliaries possess knowledge and skills that the dentists (teacher) employ in the



process of caring for and educating patients.

- The dentist as ethical business person: Dentistry is at once a healing profession and a business. Patients understand that they receive services for which they and a third party will pay. As customers, they expect quality, timeliness, and courtesy at a price that is agreeable to them. They should be able to expect that the services that are recommended are needed and that they are made aware of services from which their oral and dental health could benefit. With regard to tobacco, patients need to be aware that continuing tobacco use compromises their health and oral functioning and that dentists and their staffs will be proactive in offering them services or referrals for tobacco intervention. It would seem to be a questionable business practice to provide cosmetic dental services, crown and bridge work, implants or periodontal services to tobacco using patients without offering tobacco intervention or referral services as well. Additionally, it would be questionable from a business standpoint, as well as a medical-legal standpoint, not to perform a

thorough oral cancer examination on patients in recognized risk groups for oral precancerous lesions and cancers, and to advise patients about the results of such exams. Finally, it is the responsibility of an ethical dentist business person to be fully informed about technology, science, and other developments that affect the quality and value of the goods and services that they provide and the choices offered to patients.

- The dentist as citizen: As citizens, dentists are entitled to hold political views and to act on them. They are ethically constrained, however, in ways that the majority of citizens are not. Dentists and the organizations that represent them are duty-bound not to take actions that compromise the oral and general health of the public, and conversely bear responsibility for taking actions that are in the best health interests of the public and their patients. Science supports that tobacco addiction is an illness, that if not treated successfully, will lead to bad health outcomes. Dentists need to act on this information as they would to other threats to public oral and general health. A personal view that

tobacco use is an individual choice (vice) that people alone are responsible for is at odds with ethical, professional standards. The American Dental Association, its constituents, and, most recently, its esteemed journal editor have formulated dozens of positions over the years against tobacco use and in support of involvement by the dental profession and dentists in tobacco cessation and education.

Dentists' ethical and professional obligations to the public and their patients extend beyond the regular business hours of their offices. They are obliged as long as they have the knowledge to be helpful and are accorded respect and special standing as scientific leaders, healers, and even honest business persons. The time is right for dentists, individually and organizationally, to be prominent as leaders of the oral health team in working aggressively against tobacco at all levels.

Sincerely,

Steven B. Corbin, DDS, FACD
Brookeville, MD



Dear Sir:

You are to be congratulated for dedicating the issue of the *Journal of the American College of Dentists*, Summer 1998 for the subject of Total Quality Management in dentistry.

However, I have a major disappointment with your editorial staff in not mentioning the most significant place that has addressed the subject of Total Quality Management issues—that is a hospital dental department. Since 1982, hospital dentists have been very involved in Quality Assurance (QA), Continuous Quality Improvement (CQI), Total Quality Management (TQM), and Performance Improvement (PI). Dentists have worked side by side with our medical colleagues to plan and design effective and workable CQI programs for dental departments that have advanced education programs in general practice, oral and maxillofacial surgery, and pediatric dentistry. Hospital dental CQI programs focus on achieving optimal patient care through clinical indicator

development, patient and employee satisfaction, and interdisciplinary concern.

The JCAHO (Joint Commission on Accrediting Healthcare Organizations) has always encouraged the establishment of CQI programs for hospitals as well as the individual clinical departments. Dental medicine departments in hospitals have been active participants in the overall hospital CQI process. The data retrieved from CQI programs have led to improved patient care in a non-punitive environment.

Articles that you published in the journal have conceptual, historic, and academic value. However, the hospital dental experiences in TQM are often more germane to practicing general dentists since they stress clinical situations in the real world. Hospital dentists have pioneered the quality assurance concept for dentistry which has evolved to Total Quality Management. Our experiences should have been highlighted in the Summer 1998 journal

along with dental school, group practice, solo practice, and corporate models.

Thank you,

Burton S. Wasserman, DDS, FACD
Chairman, Department of Dental Medicine
Medical Director for Quality Assurance
The New York Hospital, Medical Center
of Queens
Flushing, NY

Editor's Note: Dr. Wasserman is absolutely correct that hospitals have lead the way in QA and CQI and that the JCAHO would like to accredit all dental practices. A conscious editorial decision was made not to include the kindred concepts of quality assurance and continuous quality improvement in the TQM issue. TQM is such a new concept to dentistry, and one in great danger of being confused with similar sounding notions such as continued competency, that I decided to make the introduction as straightforward as possible.

Life After Fellowship

ACD President-Elect's Address
October 23, 1998
San Francisco, California

Alston J. McCaslin V, DDS, FACD

Candidates for Fellowship, on behalf of the Officers, Regents, and Fellows of the College, I extend my personal congratulations. You are being recognized for your meritorious achievement and for your contributions to dentistry and to your communities. You clearly have demonstrated evidence of leadership, and you have already made significant contributions to your profession.

Fifteen years ago, when I became a Fellow of the College, dentistry looked much different to me than it does today. I was a young man; I had just begun to experience the exhilaration of simultaneous participation on several levels of our magnificent profession, and becoming a Fellow of the American College of Dentists was an honor—a joy—that I had not really comprehended, nor, in my naiveté, had I expected.

Reflecting on those past fifteen years, I have matured—I have certainly aged—and I have experienced more change and more opportunities for serving my profession than I thought were possible in a dozen lifetimes.

What Is Life Like After Fellowship?

Some of you, maybe many of you, will have opportunities to represent our profession in ways and on levels of which

you never dreamed. Most of you will experience the liberty of reflecting on what it means to be a Fellow of the College. On the eve of the millennium, some of you will struggle to understand exactly what the role of the College is in our profession in the next century.

The American College of Dentists is not just about bestowing honor on individuals like you. When Fellows of the College nominate colleagues for Fellowship, they, and the Credentials Committee who makes the selection, strive for quality in the selection of candidates. For, you see, the American College of Dentists has come to be known as the conscience of the profession, the defender, the standard bearer, the guardian for ethics and professionalism.

For all of you who are on the advent of receiving Fellowship in the College, four things are expected of you.

First, you are expected to continue your activities in the profession (whether administration, private practice, research, or teaching) in an exemplary fashion.

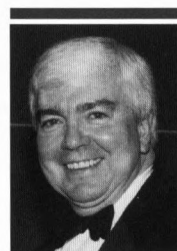
Second, you are expected to continue to develop in your leadership and your meritorious service to the people we serve.

Third, you are expected to exemplify the highest ideals of ethics and professionalism in the conduct of your life and work.

And fourth, you should consistently and regularly search for other colleagues who are worthy of nomination for Fellowship, and you are expected to nominate those individuals.

Life, even life after Fellowship, is not easy. If you are going to enjoy life as a dentist, you have to love your profession. You have to work hard, and you have to give back to your profession, to the people you serve, and to your colleagues who serve with you. And you have to accept change that sometimes goes against everything you believe, and to live with that change.

Probably every contemporary generation feels as if it is going through unbelievable change. I know that you, as a participant in this generation, experience and feel the change. We are being challenged, as never before, by change in delivery systems. We are being challenged by change in reimbursement mechanisms. We are being challenged by unimaginable



Dr. McCaslin is in the private practice of pediatric dentistry at 211 East 31st Street, Savannah, GA 31498.

advances in technology. We are being challenged by changes in dental education and continuing education. And we are even being challenged by changes in the perception of ethics—not its basic principles and its core values, but in the way we perceive ethical and professional behavior and the way the public perceives ethical and professional behavior.

In April, the American College of Dentists sponsored Ethics Summit I in St. Louis, an event that brought together more than eighty individuals representing fifty-four different dental organizations, industries, and institutions—the largest gathering of its kind that we know of—to discuss and reflect on professional ethics. It was a significant event, the proceedings of which are published in the latest issue of the *Journal of the American College of Dentists*. An Ethics Summit II is being discussed for 1999 or 2000. If the College is to retain its reputation as the conscience of the profession, it must confront and challenge the changes in this most important aspect of professional life—ethics.

Carry On

I have to tell you that my son joined my brother and me this past July in the practice of pediatric dentistry in Savannah. This experience is a joy and an opportunity I had not even thought about seven years ago.

My life as an active participant in organized dentistry is slowing down, but I am not quitting. I have no desire or intention of retiring. As long as our good Lord continues to give me the ability and the health to work, I plan to do so. As my good friend, Heber Simmons, answered when asked about his plans for

College that is a driving force in dentistry; in short, a College that leads.

I can assure you that the College is strong and well-prepared to meet the challenges of the future. The Officers and Regents will do everything in their power to see that the College continues to flourish and thrive in this ambiguous

If the College is to retain its reputation as the conscience of the profession, it must confront and challenge the changes in this most important aspect of professional life—ethics.

retirement, “Why would I want to quit doing the one single thing I enjoy most?” And, as you assume pre-eminence in professional and organizational life, I entreat you to “Carry On,” as have so many of our great leaders in the past.

As has been our tradition, the College will proceed to identify and address those difficult issues of ethics and professionalism facing our profession. We will continue to promote and reinforce ethical behavior. The next few years will define the College in the upcoming millennium; a College that effectively interacts with its profession and constituents; a College that is committed to quality and improvement; a College with standards; a

and volatile culture in which we live. The College is blessed with a beautiful and functional office in Gaithersburg, Maryland, and with a creative, dedicated, and exceptional staff.

You belong to a truly magnificent profession! You represent its leadership and its potential. So grab hold of dentistry with all of your might. Build it, nurture it, protect it, and defend its most powerful sword—ethics and professionalism.

I wish for you more accomplishment, enjoyment, and success in your life after Fellowship than I ever imagined for myself, and I wish you God’s speed.

Thank you.

The Dental Industry and the Dental Community: A Working Partnership...Growing Together

Convocation Address
October 23, 1998

Nikolaj M. "Nik" Petrovic, CAE

Good afternoon ladies and gentlemen, incoming Fellows of the College, and special guests. It is both a pleasure and singular honor for me to have been invited today to serve as your convocation speaker, and on behalf of the Board of Directors, members, and staff of the American Dental Trade Association, I would like to extend my appreciation to Dr. Edward C. McNulty, President of the College, and, of course, to my good friend Dr. Stephen A. Ralls, Executive Director of the College, for the opportunity.

In the few minutes we have together I would like to provide you with an overview of how the dental industry has attempted, over the years, to be an effective partner with both the dental profession and dental team in the delivery of optimum oral health and what our goals are in the near future.

Toward that end let me begin with some background. The ADTA, an international organization, was founded in 1882 and is the oldest and largest trade association representing the dental industry in the USA. Our members consist of dental distributors, laboratories, and manufacturers. The mission of the

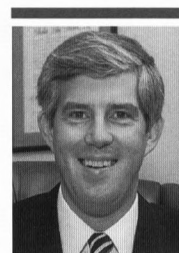
ADTA is to promote and represent the interests of its members, to support the advancement of oral care, to provide services which strengthen the members' businesses, and to provide a forum for the exchange of ideas and information. We offer traditional trade association programs and activities for our members, such as: (1) liaison with governmental bodies, both legislative and regulatory; (2) market information services; (3) educational seminars and employee training systems; and (4) dental community relations.

Being a Part of the Team

We are particularly proud of our community philanthropic activities and embrace the notion and belief in the importance of philanthropy in dentistry as an essential part of corporate and professional responsibility. We attempt to link the goals and mission of our corporate interests and marketing strategies to specific philanthropic objectives for the good of dentistry and the health of the public. As a founding member of Oral Health America, America's Fund for Dental Health, with a forty-five year history and member contributions exceeding \$5 million, ADTA finds itself supporting

projects covering oral health for older adults, the national sealant alliance, the partnership for tobacco cessation, the national spit tobacco education program, and numerous collaborative initiatives to improve dental education.

In 1990, working in conjunction with the National Foundation of Dentistry for the Handicapped and the Colgate Palmolive Company, we launched the dental product coupon book project called "Dentacheque." Purchased by members of the dental team for a cost of \$60 per book and containing in excess of \$7,000 worth of savings on products, the proceeds (some \$500,000 in 1998 alone) will provide 64% of the revenues the Foundation will need this year for helping needy disabled, aged, and medically compromised individuals as part of the Donated Dental Services.



Mr. Petrovic is President and Chief Executive Officer of the American Dental Trade Association, 4222 King Sreer, Alexandria, VA 22302-1597.

DDS is now active in twenty-one states, and I know some of you in this room are involved on a local level.

We have supported initiatives such as the ADA/AADS SELECT program which encouraged highly qualified individuals to consider careers in the dental profession. Also, we have established and supported dental clinics at several Olympic committee training sites, the Special

extensive study of the effects of reimbursement on both the dental profession and the industry. Recognizing that there is a great variety among the needs of patients and in the various reimbursement plans available, we are identifying strategies to ensure that programs do not restrict access, value, or quality. The key to our overall objectives will be communicating a consistent message to the dental

We are proud of the...belief in the importance of philanthropy in dentistry as an essential part of corporate and professional responsibility.

Olympics/Special Smiles activities and served as a founding benefactor and continuing supporter of the Dr. Samuel D. Harris National Museum of Dentistry located in Baltimore, Maryland.

In the pursuit of our mission, we are very proud of our dental community relations activities, including our keen awareness of the role of the College for its historic and current interest in the development, promulgation, and discussion of ethics in dental practice. All of us at ADTA applaud the leadership role you served once again in the conduct of your Ethics Summit I this past April in St. Louis.

In support of your goals and objectives to promote appropriate ethical behavior in the dental community, our association has developed a *Voluntary Guideline for Business Conduct*. Member companies of the ADTA, by virtue of their membership, are asked to consider on a voluntary basis maintaining their business operations in conformance with these guidelines. Toward that end we participated in your April program and will continue supporting future efforts.

One of the objectives of the College is "To encourage the free exchange of ideas and experiences" and toward that end we are indebted to both Dr. Stephen Ralls and Dr. David W. Chambers, Editor of the *Journal of the American College of Dentists* for devoting the entire Spring 1998 issue on the subject "the trade looks at dental reimbursement." The ADTA this past year commissioned an

profession, patients, benefits managers, and the research community. The message is "Responsible consumption of appropriate care."

Growing Stronger Together

The fundamental goal of any trade association is to ensure the long-term financial viability of its industry. Many, in fact, would argue that "viability" is not enough and that a higher goal should be the "growth" and evolution of its industry. In accordance with this belief, the ADTA's new overall strategic plan states that it will be a goal of the association to undertake steps to advance the overall growth of the dental industry.

At ADTA, we have identified four very basic themes in which to discuss the idea of growing the size of the dental industry:

1. Increasing the number of dental procedures performed and matching wants and needs with standards of care.
2. Increasing the productivity of dental practice and matching provider supply with patient demand.
3. Increasing the product/service offerings of the trade and matching these to evolving market requirements.
4. Leadership and industry advancement.

With respect to the latter, if it is in the interest of the industry for dentists to perform more and different procedures more productively, then the industry needs to provide them with productivity enhancing materials, equipment, and sys-

tems. Furthermore, in addition to finding ways to perform existing procedures more productively, advancements in dental technology often bring entirely new procedures to dentistry. Both improving the productivity of existing procedures and developing new ones—diagnostic, preventive, and restorative—are essential to the goal of growing the dental economy.

While numerous attempts have been made over the years to reach out to prospective patients who do not go to the dental office on a routine basis, at ADTA we have taken a different approach. We believe real growth can be found in existing dental office files. Cases in point...

Procedure Potential: How many case plans are not proposed by dentists because they simply are not comfortable proposing them?

How many case plans are proposed by dentists but not accepted by patients? What are the real accept/reject issues?

How many recall appointments are canceled by patients because of scheduling conflicts and then never rescheduled?

Among these three areas alone, the dental economy could be missing out on fifty to one hundred million procedures per year, with a value of \$4.5 billion to \$9 billion (\$90 per procedure average) at the professional level and \$300 to \$600 million at the industry level. We need the profession to cultivate and convert these cases and retain patient demand!

Practice Model Potential: The average dental practice sits dormant with the lights off 133 hours per week, or nearly 80% of the time. During the thirty-six hours per week that the average practice is operating, the dentists has to do all the things associated with owning a small business, in addition to actually deliver dental care to the patients. Estimates vary, but it is generally agreed that the average practice could increase production, as measured by gross income and procedure throughput, by 20% to 35% by simply using existing human and capital resources more efficiently. Excess capacity in the practice is a major driver behind and argument for managed care.

Alternative practice models are emerging that respond to the prospects

for gaining more leverage from the dentist's time, knowledge, and training and more leverage from the significant capital investment required to open and maintain a modern dental practice.

Technological Potential: Advancements in dental technology help to grow the industry by improving the productivity of current procedures and by creating completely new procedures. Many of the procedures that are common today came about because of advancement in dental technology over the past fifteen years:

Diagnostic...imaging, lab tests,
intraoral cameras

Preventive...sealants, periodontics
medicaments

Operative...air abrasion, lasers

Restorative...composites, cements,
adhesives

Endodontics...treatments, materials,
methods

Periodontics...regenerative, long-term
treatment plans

Orthodontics...methods, materials,
systems

Oral surgery...methods, materials,
implants

Crown and bridge...methods,
materials, ceramics

Removable...methods, materials,
service

Aesthetics...methods, materials,
bleaching

The industry needs to continue to bring new technology to the profession, increasing the number of procedural options available to dentists in treating the oral health care needs and wants of the population. These technologies should address different standards of care, patient and provider choices, and economic realities.

Leadership and industry advancement can be achieved in the following ways:

Natural Goals: Improvement and innovation in the business side of dentistry means serving and retaining patients providing rational and productive dental care, meeting economic and financial objectives, and serving society's oral healthcare needs. The ADTA has a strategic and economic stake in helping to advance this goal of improvement and innovation in dentistry.

Marketing Reality: The dental profession will continue to evolve, and these changes will filter through and affect various aspects of the dental industry. The question is whether the trade must simply react to changes at the professional level or can in some way proactively influence the future of dentistry in a way that benefits consumers,

We set out to change these perceptions by becoming more involved in all facets of the dental fabric and became more assertive in order to become a true partner in the dental family. We expanded our traditional role.

In that light, I would be remiss if I did not recognize a few individuals who played a very important mentor role for

You represent the creative force of today and the promise of tomorrow.

providers, and the industry. We believe the trade has the prerogative and perhaps the responsibility to define opportunities for better procedures, better practice models, and better technology efforts that will intercept these evolving market realities, near-term and long-term.

Growth Vectors: Perhaps the most productive way the ADTA and member companies can actively grow the size of the dental industry is to focus on productivity and capacity utilization in the dental office. The trade customer base will level out over the next twenty years. In order for industry revenue to continue to grow, the revenue of each of our customers will have to grow at least as fast. This will involve:

Developing new and more efficient procedures and modalities is part of the dental service growth equation.

Understanding and assisting in the evolution of new practice and service delivery models is the second part of the equation.

Bringing technological solutions to both the clinical and business aspects of dental practice is the third part of the equation.

Feeling Welcome

When I first joined the staff of the ADTA some twenty-two years ago, I was struck by the misunderstanding which existed in the dental community relative to who we represented and what we as an industry stood for. The general perception was that we were the advertisers, exhibitors, and deep pockets.

me in the early years as I attempted to navigate the various political minefields along the way. I salute Dr. Harold Hillenbrand, Dr. Gordon H. Rovelstad, Dr. W. Robert Biddington, Dr. Norman H. Olson, Dr. Robert W. Elliott, Jr., and Dr. James A. Harrell, Sr. who, in 1989, presented me with the College's Award of Merit, my first recognition from the dental community, which will always have a special place in my heart.

As I conclude my remarks, I would first like to congratulate the Fellows who will be inducted this afternoon and the award winners. You represent the creative force of today and the promise of tomorrow.

Second, to paraphrase a passage from your Guide to Professional Conduct provided each Fellow: "Education and research improves the road that we must travel and our goal, in the ultimate reaches of a challenging world, is the eradication of dental disease and the improvement of life for those who look to us for care. There are no limits to what can be done. You and you alone determine what your limits shall be..."

As you assume the mantle of leadership, within the numerous dental organizations represented here today, we at the American Dental Trade Association welcome the opportunity to work with you in the pursuit of your goals and objectives and trust that you will provide us with a true partnership role now and in the future.

1998 Fellowship Class

The Fellows of the American College of Dentists are the leaders in dentistry and in their communities. They represent the creative force of today and the promise of tomorrow. We proudly welcome the 1998 class of Fellows...

James H. Abjanich
New York, NY

David S. Acuff
Savannah, GA

Steven M. Adair
Augusta, GA

Frank M. Addabbo
Orlando, FL

Suresh P. Aggarwal
New Delhi, India

Alan Ainley
Paragould, AR

G. Jerome Alesi
Lafayette, LA

Roger E. Alexander
Dallas, TX

Martin A. Alfano
East Stroudsburg, PA

Stephen G. Alvis
Harrisonburg, VA

Madeline J. Anderson
Austin, TX

Ralph L. Anderson
Richmond, VA

John M. Anholm
Loma Linda, CA

James W. Antoon
Rockledge, FL

Robert A. Augsburger
Tulsa, OK

Justin E. Aurbach
Dallas, TX

James G. Avery
Memphis, TN

Kenneth J. Backman
Boston, MA

Jeff D. Baggett
Edmond, OK

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North Andover, MA

Douglas H. Barton
South Bend, IN

Guy P. Bates, Jr.
Springfield, MO

Gary R. Baughman
Stockton, CA

Harvey A. Beaver
Warren, MI

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San Francisco, CA

Ronald A. Bell
Charleston, SC

Edward Besner
Springfield, VA

Russell W. Bessette
Buffalo, NY

John Allan Bier
San Francisco, CA

Gerald W. Bird
Cocoa, FL

Daniel W. Boston
Philadelphia, PA

John D. Bouws
Wyoming, MI

Charles R. Bowen
South Burlington, VT

Susan E. Brackett
Oklahoma City, OK

James B. Bramson
Natick, MA

Charles L. Brandenburg
Rising Sun, MD

James M. Brophy III
Waukegan, IL

David E.R. Brown
Poplar Bluff, MO

Louis A. Browning
Knoxville, TN

Gretchen J. Bruce
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David P. Bryk
Roseville, MI

R. Steven Bull
San Francisco, CA

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Eli Capilouto <i>Birmingham, AL</i>	John A. del Campo <i>Alfred, NY</i>	Thomas W. Faull <i>Virginia Beach, VA</i>
Mary Lynne Capilouto <i>Birmingham, AL</i>	Edwin A. del Valle <i>Ponce, Puerto Rico</i>	Jan Feldman <i>Providence, RI</i>
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John T. Lanka
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Carmel, IN

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Los Gatos, CA

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Peter L. Paulson
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- Anoop Sondhi
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- R. Wayne Thompson
Shawnee, KS
- William K. Thomson
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- Judee Tippet-Whyte
Stockton, CA
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Montreal, Quebec
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- Thomas J. Vergo, Jr.
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Seattle, WA
- Hans-Peter Weber
Boston, MA
- William D. Weber
New York, NY
- C. Edwin Wentz
Lubbock, TX
- Lisa M. Wentz
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Allen Wong
Roseville, CA

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Marietta, GA

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Profiles in Professionalism: 1998 ACD Awardees

William John Gies Award

The William John Gies Award was established by the American College of Dentists in 1939 to recognize Fellows for outstanding service to dentistry and its allied fields. This award embodies the highest levels of professionalism, and it is the highest honor the College confers on its members.

W. Robert Biddington



The first recipient of the William John Gies Award is **W. Robert Biddington**.

Dr. Biddington graduated from the Baltimore College of Dental Surgery, University of Maryland after obtaining his bachelor's degree from West Virginia University. After two tours in the Navy, he joined the full-time dental faculty of his alma mater. He served in

this capacity for ten years, rising to Associate Professor and Head of the Divisions of Endodontics and Periodontics. During this period he maintained a part-time practice in general dentistry.

In 1959, Dr. Biddington joined the faculty of West Virginia University as Professor and Chairman of the Department of Endodontics. In 1968, he was named Dean of the school after serving two years as Assistant Dean. Dr. Biddington served in this position for twenty-three years until being named Vice President of the Robert C. Byrd, Health Sciences Center. Dr. Biddington is Dean Emeritus of West Virginia University, School of Dentistry and continues to serve as part-time Associate Vice President for Health Sciences.

Dr. Biddington has held numerous high offices, including President, American College of Dentists; President, American Association of Dental Schools; and President, National Chapter of Omicron Kappa Upsilon, among others. He has served as Chairman of the Joint Commission on Dental Examinations and member of the ADA's Commission on Dental Accreditation and its Council on Dental Education.

Dr. Biddington also provided leadership to his community through the Boy Scouts, local school committees, and health

centers. He served on the U.S. Olympic Committee as Chairman of the Council on Sports Medicine and Committee on Dental Health. Throughout Dr. Biddington's professional career he has been an active clinician and lecturer, both in the U.S. and abroad.

He has been honored with the Distinguished Alumnus Award of the Baltimore College of Dental Surgery and the Alumni Achievement Award of Potomac State College of West Virginia University.

We also have it on good authority that Dr. Biddington is a great dancer and a true West Virginia Mountaineer!

F. Gene Dixon



The second recipient of the William John Gies Award is **F. Gene Dixon**.

After serving four years in the Navy, Dr. Dixon graduated from the University of Nebraska, College of Dentistry, in 1947. Dr. Dixon has devoted over thirty years of his professional life to the design, development, and marketing of the first comprehensive

free-choice insured dental care plan in the United States. He was an important pioneer in improving quality, access, and affordability of dental care. Dr. Dixon was the creator of the California Dental Service, the start-up company which today is known as the Delta Dental Plans.

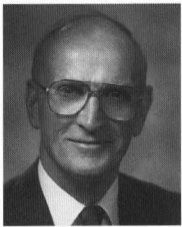
Dental disease and dental care were considered uninsurable in the 1950s. There were no dental prepayment plans. As chief executive officer of California Dental Service, Dr. Dixon took a two-employee office and developed the first dental plan for prepayment coverage for 2,500 children of union employees. Under his leadership, the company evolved over the next thirty years to meet the needs of the populace of California, serving eight million people with an annual budget of over \$900 million.

Dr. Dixon's intelligent, innovative leadership and his willingness to "take a risk" provided the stimulus for development of the dental insurance industry that currently is the envy of the world. Dr. Dixon's efforts were not without adversity and skepticism. In fact, the dental profession itself opposed the concept of dental health insurance and made it difficult for him to get

his programs approved and in use. After Dr. Dixon proved it could be done in California, the rest of the nation followed, and dental insurance became a reality. His direct, positive impact on the oral health of the public is, therefore, unsurpassed. Dr. Dixon has held numerous high offices in dentistry and has been accorded many honors, including honorary degrees from both the University of the Pacific and the University of Nebraska. The highest national award of the Delta Dental Plans Association is named the F. Gene Dixon Leadership Award in recognition of his distinguished service to the profession.

Dr. Dixon is also well known for his generosity, support, and successful fundraising abilities for dental schools.

Gordon H. Rovelstad



The third recipient of the William John Gies Award is **Gordon H. Rovelstad**.

Dr. Rovelstad received DDS, MSD, and PhD degrees from Northwestern University, School of Dentistry. After graduation in 1944, Dr. Rovelstad served a tour in the Navy. He then returned to Northwestern as Assistant Professor of Pedodontics, Chief of the Dental Department of the Children's Memorial Hospital, and part-time private practice. In 1953, he again served as a dental officer in the Fleet Marine Force. Dr. Rovelstad continued in the Navy, serving in a number of high-level research positions, including Head of Research for the Bureau of Medicine and Surgery and Dental Research Advisor for the Office of Naval Research. During this time he received an honorary Doctor of Science degree from Georgetown University. He retired from the Navy after thirty years and accepted an academic appointment as Professor, Pediatric Dentistry, at the University of Mississippi, where he rose to Assistant Dean, Educational Programs.

Dr. Rovelstad fully participated in numerous professional societies, rising to leadership positions in all of them. He was a member of the Editorial Board of the American Society of Dentistry for Children for nineteen years. He served on the Board of the American Academy of Pedodontics for five years, and later as its President. Dr. Rovelstad also served as President of the American Board of Pedodontics.

Dr. Rovelstad served as President of the American College of Dentists in 1980 and was named Executive Director Emeritus following eleven years of service as its Executive Director. He was President, International Association of Dental Research and is President Emeritus of the William J. Gies Foundation for the Advancement of Dentistry.

Among other talents, Dr. Rovelstad is an accomplished cellist and golfer. His regular, unassuming, and unselfish service to humanity, the profession, and the College continues to uphold our highest traditions.

Honorary Fellowship

The ACD confers Honorary Fellowship upon persons who are not members of the dental profession, but have made outstanding contributions to the advancement of the profession and its service to the public. These contributions may be in education, research, administration, public service, public health, medicine, and many other areas.

Arthur Meisel



The 1998 recipient of Honorary Fellowship is **Arthur Meisel, Esq.**

Mr. Meisel serves as general counsel and deputy executive director of the New Jersey Dental Association. He resigned from a prestigious New Jersey law firm twenty years ago to become legal counsel for the association.

Mr. Meisel has demonstrated exceptional dedication and leadership qualities on behalf of organized dentistry. He has made numerous contributions to the health and well-being of dentists in New Jersey. In 1995, he was instrumental in convincing the State Board of Dentistry to prohibit advertising claims of professional superiority and expert testimonials. He also persuaded the Board to adopt specific regulations governing public communications by referral services and commercial co-operative advertising programs. Mr. Meisel has successfully challenged upward rate corrections to the New Jersey Commission of Insurance as well as the constitutionality of the "PIP" schedule. In another case, he successfully resolved a backflow prevention device issue in favor of 225 dentists, at no charge to them. When the Director of the Division of Medical Assistance unilaterally ceased payments to dentists because of errors, he intervened and the payments were restored. When an insurance company terminated without cause participating agreements of several dentists, Mr. Meisel represented at no charge every Association member and won reinstatement for these dentists.

Mr. Meisel has been made an honorary member of the New Jersey Dental Association and received their Distinguished Service Medal. He has been a recipient of the prestigious Seymour A. Levy Memorial Award from the New York University Law School.

Mr. Meisel has been an important lobbyist, policy advisor, and trusted counsel to his Association. In New Jersey dental circles, the name "Art Meisel" is practically a household name.

Award of Merit

The supporting services of dentistry are vital to the profession, providing key elements which enhance the effectiveness of dental care delivery and the growth of the profession. The ACD's Award of Merit was established by the Board of Regents in 1959 to recognize unusual contributions in dentistry and its service to humanity by persons who are not Fellows of the College.

Barbara Sims



The 1998 recipient of the Award of Merit is **Ms. Barbara Sims**.

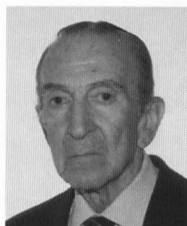
During the past thirty years, Ms. Sims has served as the Executive Secretary, Director, and Vice President of the East Coast District Dental Society in Florida. She was instrumental in establishing loan and scholarship programs so early Cuban immigrants could go to dental schools here and receive their American dental degrees. She has enabled numerous dentists and staff to enter into treatment programs allowing them to return to productive lives because of her special training in working with chemically dependent persons.

Ms. Sims established the Peer Review program and wrote the manual used as a model for Florida peer review. When Hurricane Andrew hit Florida, even though her own home was destroyed, she skillfully organized staff and volunteers to contact every dentist in the affected area, both member and non-member, to determine their needs for housing, office space, food, or financial assistance. She procured a fully equipped trailer to provide office space for dentists who had their offices destroyed. For this exemplary service, the Dental Society received the Golden Apple Award from the American Dental Association. The Society recently won another Golden Apple Award for treating the Cuban and Haitian refugee population in Cuba. Under her leadership, the East Coast Dental Society leads in many programs and produces the Miami Winter Meeting, one of the premier dental meetings in the country.

Service Award

This award is presented to recognize outstanding efforts of a Fellow of the American College of Dentists for exceptional and distinguished service to the College or to humanity through his or her professional service.

Herbert Caplan



The 1998 recipient of the Service Award is **Dr. Herbert Caplan**.

Herb Caplan has made the ACD his primary pre-occupation ever since his induction in 1971. His personal project was to enhance College membership in the Province of Quebec and other areas of Canada. The increasing number of Canadian Fellows can attest to his outstanding leadership and tireless effort.

Five years ago, Dr. Caplan volunteered to establish Canadian Sections of the American College of Dentists. He served on the organizing committee as Quebec's representative, along with other Canadian members. Dr. Caplan was identified as being a "moving force" in determining the future of the American College of Dentists in Canada. His enthusiasm, expertise in international professional organizations, and administrative skills provided a significant positive impact on the organizing committee. Subsequently, five Canadian Sections were chartered and now flourish. Dr. Caplan has been a source of inspiration and encouragement to all the Canadian Sections. He derives as much pleasure from their successes as he does from the Quebec Section's. Largely through his efforts, Canadian Fellows look upon their Fellowship with a renewed sense of pride.

The Future is in the Present: The Impact of Generations

Carol A. Aschenbrener, MD

Abstract

Among the complex mix of forces that shape our futures are differences among generations. A generation is a cohort, roughly twenty-some years in duration, where the members have experienced a common formative environment and tend to react to the world in patterned fashion. The defining characteristics of five generations are discussed: GI, Silent, Boomers, Generation X, and the millennial generation. Implications are drawn for patient preferences as dental consumers, recruitment and management of faculty and others in organizations, and the transitions of values in leadership of professional organizations.

As the level of complexity and pace of change in the world continue to increase, one hopeful sign is the increased interest in anticipating and shaping the future. Strategic planning, future search conferences, construction of future scenarios—all can be fruitful exercises in thinking more broadly about how the future might unfold. Such thoughtful analysis prepares individuals and organizations to act more boldly to increase their relevance and value.

Considering a range of possible alternative futures creates the opportunity to

anticipate trends, take a leading edge position, and mentally rehearse possible responses to plausible opportunities and challenges. Because the future is foreshadowed in the trends of today but is not pre-determined, people do have the opportunity to influence the unwinding of the future. Professional futurists suggest that demographics, physical environment, technology, economics, and government all influence the future equally (Bishop, 1998). No one factor is likely to be the dominant influence. Rather, it is their complex interactions that shape the course of events.

In the health professions, much speculation about future trends centers on technology, the role of government, and the state of the economy. Individuals and publications from professional societies blame government for “alarming trends” that portend catastrophe or implore government to rescue society from a future painted less bright than the present. Sometimes they lay blame on one issue and seek government rescue on another. Demographics seem to be considered mainly with respect to marketing or business plans, in predictions about future demand for services by specific population groups.

Moving into the new millennium, the key task for the health professions and for academic health centers is to understand the world as it is and as it is becoming—and define our place in it. We can-

not stand separate from the context. In both educational preparation and practice, the health professions are influenced by the environmental and societal context and, in turn, those professions affect the context. The promotion of fluoridation for prevention of tooth decay and its impact on the profile of dental services is but one obvious example.

The context is always dynamic and the future is created by actions taken today. The choices made, people selected for positions, allocations of resources, behaviors rewarded or punished—all shape the future. Signals ignored, decisions deferred, changes postponed also create the future. In the words of Lao Tzu, “Every choice shapes my destiny.” Choices may be as sweeping as the creation of systems to pay for dental services for all children or as seemingly mundane as the selection of languages for signage in the office. All contribute to shaping the future.



Dr. Aschenbrener is Senior Vice President, Kaludis Consulting Group in Washington DC (caschenbrener@kcg.com) and Clinical Professor of Pathology, George Washington University School of Medicine. This paper is based in part on a presentation made to the American Association of Dental Schools, Minneapolis, March 1998.

Across all industries, members of the Baby Boom generation are moving into top management positions and individuals from Generation X are assuming first level management positions. Both have very different ideas about work, authority, and values than the preceding living generations. Both will have a profound influence on organizations and societal institutions. They seek different rewards. They will lead in different ways. Anticipating the future requires much closer attention to the differences among current living generations. Forecasters typically predict that people will react to the recurrence of circumstances—war, economic depression, increased standard of living, oppression—in ways that people before them have reacted. Such predictions do not take account of generational differences. This paper will focus on the demographics of generations and speculate on implications that generational impact might have for academic dentistry and dental policy.

Generations

The term “generation” refers to far more than the average number of years separating a cohort of children from their parents. A generation is a group that “came along at the same time,” a group that experienced history from the perspective of the same phase of life. For example, the so-called Lost Generation of Hemingway and F. Scott Fitzgerald (born 1883-1900) grew up in a permissive, post-war climate of drugs, parental neglect, and migration to the cities and were hit hard in their middle years by the Great Depression. At least as early as the nineteenth century, writers such as de Toqueville suggested that each generation of Americans carries “certain fundamental notions” or patterns of belief and attitudes about the important questions in life.

In their fascinating analysis of the impact of generations on American life, William Strauss and Neil Howe (1991) link generation both to phases of the life cycle and to societal eras. They theorize that each generation is shaped by the experiences of its formative years and develops collective attitudes about the ma-

jor issues in life: sex roles, family life, work, politics, religion, lifestyle. In particular, the events surrounding birth and the coming of age seem to define generational boundaries. For example, Americans who were between the ages of sixteen and twenty-four on December 7, 1941 are likely to have very clear memories of where they were and what they were doing when they heard news of the attack on Pearl Harbor, while those sixteen to twenty-four in 1963 have similar memories surrounding the assassination of President Kennedy. Strauss and Howe define a generation as a co-

is likely to be early in the next century (Crispell, 1993).

Within each generation there is wide individual variation, yet each has clear distinctions that are readily recognizable by many of its members and by those one generation removed. According to Spanish sociologist Julian Marias, generational awareness may be a significant component of identity: “Each of us moves with the men of our generation. To ask ourselves to which generation we belong is, in large measure, to ask who we are” (Marias, 1970, p. 106). Each generation has many characteristics; some persist through all

Now, in midlife, many Boomers are confronting unmet expectations that their standard of living would keep rising without interruption.

hort-group, born over a period of years, who experienced major historical events during the same phase of life and share common beliefs and attitudes influenced by those events. A generational cohort-group may contain several cohorts, each with distinctive features. Based on their analysis of eighteen distinct generations in American history, Strauss and Howe suggest that a generation spans, on average, about twenty-two birth years. This corresponds roughly to the length of each of the four major life cycle phases: youth, rising adulthood, midlife, and elderhood.

While there is minor variation among different sources about the starting and ending dates for generations, most conclude that there are five living generations in the U.S. today:

- The GI generation, born 1901-24, now 74 and older
- The Silent generation, born 1925-42, now 56-73
- The Baby Boomers, born 1943-60, now 38-55
- Generation X, born 1961-81, now 17-37
- The Millennial generation, the first of whom were born in 1982

The cut-off date for the Millennium generation is not yet clear but, following the twenty-two year average,

life cycle phases, others emerge later in life. For example, the GI generation are energetic in elderhood as they were in youth, the Boomers moralistic in midlife as they were in adolescence, Generation X alienated as it transitions from youth to adulthood. Since a generation tends to behave like itself across the life cycle, the behavior of one generation of adolescents or senior citizens does not predict the behavior of the next generation at the same life stage. The following descriptions of the five current generations are composites based on sociological, historical, and market research (Crispell, 1993, 1995; Smith & Clurman, 1997; Strauss & Howe, 1991). It is unlikely that any individual will display all the characteristics of her or his generation, yet many members of a given generation likely will recognize the following as descriptions of “people who came along at the same time” as they did.

The GI Generation

Once numbering sixty-three million, the GI generation came of age during the Depression and has been characterized throughout its life span by unstoppable energy; this is a get-it-done generation determined to repair the disorder and decay left by its predecessors, the Lost Generation. Growing up during times of

economic upheaval, they learned early the value of discipline and hard work and their later success in life reinforced these as core virtues. They passed this lesson along to successive generations as the motto, "You can do anything if you work hard enough," a promise that fails many in this decade. Many in this generation were touched in some way by the First World War and almost half of the men served in the armed forces during World War II. With the opportunity of wartime, women of this generation made new inroads into fields previously exclusive to men, including assembly line work, engineering, architecture. This is a generation with strong civic sense—they were the first boy and girl scouts, they prize loyalty and patriotism, and place strong trust in government and other societal institutions.

This generation set a number of trends that pleased their elders: lower suicide and crime rates, greater educational attainment, increased voter participation, and rising confidence in government. Their confidence in government was well placed for they were the first generation to benefit from child labor laws and "the entire modern growth in government spending has coincided with the duration of their life cycle" (Strauss & Howe, 1991). Under the seven Presidents from this generation, government programs grew rapidly with the addition of Medicare, initiatives of the Great Society, Medicaid, the NASA space program, and a broad array of regulatory agencies. GI Presidents oversaw both the build-up of a global nuclear arsenal and the beginning of its retrenchment. The GI generation reaped much economic prosperity, directed great resources to public goods, and left a legacy of mountainous debt and widespread environmental damage.

During the birth years of this generation, childhood mortality dropped 50% and children grew taller and healthier, the first to benefit from safely packaged food, pasteurized milk, and vitamin supplements. Well behaved as youth, they continue to place high value on conformity and fitting in and show deference to authority. This is the first American generation to be much better

off financially than its parents were. Home ownership reached a record high of 60% when the GI generation was in midlife and they are now the most affluent elders of the century. Still activists in old age, this generation spawned the senior citizen movement, established the first retirement community in Sun City,

American history and one cohort of women, those born 1931-35, had the highest fertility rate of the twentieth century. This generation also exhibited the greatest change in behavior with the "sexual revolution" and the enactment of "no fault" divorce laws. Its members include most major figures of the civil

Generation X is the poorest living generation; about 20% live in poverty, and economic distress seems to be following them as they transition from youth to adulthood.

spurred the passage of Medicare, and lobbied successfully for the largest rise in Social Security benefits during the period 1972-81. Crime, personal safety, and health care benefits are key concerns for them today.

The Silent Generation

At forty-nine million, this generation has the unique distinction of being smaller than either the preceding or succeeding generation. The Silent generation looked to the GIs as role models and share a number of characteristics with that generation: childhood shaped by war and economic upheaval, common external national enemy in communism, deference to authority, patriotism, and strong trust in institutions. In contrast to the can-do GI generation, the Silents were unobtrusive as youth and rising adults, earning such labels as "the gray flannel mentality" and the "lonely crowd." Describing them, historian William Manchester noted, "Never had American youth been so withdrawn, cautious, unimaginative, indifferent, unadventurous (sic)—and silent." Like their predecessors, men of this generation extended their educational achievement, but the women retreated from the advances made by those before them.

A generation of contrasts, the Silents are pluralists, experimenting and tolerating a variety of lifestyles without fanfare. They married earlier and had children earlier than any other generation in

rights revolution and many of the most noted public advocacy lawyers, as well as some of the most public "swingers." In stark contrast to its predecessors, this generation have produced no Presidents and, with the youngest members now fifty-six, may never do so. A string of unsuccessful candidates have come from its ranks: Walter Mondale, Michael Dukakis, Jack Kemp, Gary Hart, Jesse Jackson, and Bob Dole. Silents held a plurality in Congress from 1975 until the mid-nineties and continue to do so in many state legislatures. Under their leadership, Congress' reputation as bureaucratic has advanced significantly.

The Silent generation has enjoyed great prosperity. Since the deprivation of their childhood, their economic fortunes have advanced steadily; during their rising adulthood, per capita income and per household wealth rose at record levels. As young adults, they sent a surge of volunteers to the Peace Corps. In mid-life, they fueled strong markets for exercise programs, cosmetic surgery, and weight control programs.

The Baby Boom Generation

Perhaps the most studied of generations, because of their great market power, the Baby Boomers (about seventy-eight million strong) constitute the largest single generation in American history. They have had more influence over consumerism than any previous generation and can be expected to exert increasing financial

influence as they grow older. Boomers grew up in a period of unprecedented economic expansion, unrivaled economic and educational opportunities, and dramatic advance in prevention of childhood diseases. As young children, they were told repeatedly that they were "special"—and they believed it. Now, in midlife, many are confronting unmet expectations that their standard of living would keep rising without interruption. Compared with their parents, Boomers have experienced net declines in income adjusted-for-inflation with rising age. As their parents die off, however, Boomers will become richer, inheriting about \$10.7 trillion (Roszak, 1998). Already the source of much fuel for the dramatic surges in stock market performance, Boomers will wield increasing financial influence over the next few decades.

As a group, Boomers are intensely competitive and have a strong sense of entitlement. It is no coincidence that grade inflation and a booming expansion in student services both occurred during their college years. Boomers typically believe in their own capabilities and seek to continue developing themselves; they fuel the self-improvement industry. The Boomers have always broken the rules. They are idealists who challenge the status quo and value individuality over conformity. That idealism, coupled with rebelliousness and a sense of superiority, often propels them to take a moralistic stance. It was Boomers who blurred gender roles, marched in civil rights protests led by the Silents, launched demonstrations against the war in Vietnam and led many consumer rights crusades. By sheer numbers, the Boomers have been able to amplify societal trends, perhaps most notably the diversification of the business and many of the professions. Boomers have been credited with challenging the "legal canon of race and gender bias" in law schools, catalyzing transformation of the profession and bolstering new opportunities for women and people of color (ABA, 1997). On the other hand, drunk driving, illegitimate births, teen unemployment, crime rates and teen accidental deaths all rose for this rule-breaking generation. As young adults, the non-conforming Boomers migrated out of

mainline churches to New Age and evangelical sects, yet their church attendance rose by 30% during the 1980s.

Boomers are demanding customers; they insist on "convenience, control, and customer orientation and don't hesitate to walk away from services that don't deliver" (Smith & Clurman, 1997). Hungry for information, Boomers want access not instruction; they want to be "on top and in charge." In particular, Boomers want to take charge of their health care and will change practitioners to get what they seek. In a recent survey demonstrating that visits to "alternative medicine" practitioners continue to exceed total visits to primary care physicians, people aged thirty-five to forty-nine (mostly Boomers) purchased the most services, with over 50% using at least one alternative therapy during the previous year (Burg, Kosch, & Neims, 1998; Eisenberg, Davis, Ettner, et al, 1998). Throughout life, Boomers seek experience and personal fulfillment and bring those desires to the workplace. By self-report, they are the most highly stressed

substantially lower over much of this generation's span, it currently is about the same size as the previous generation. While the Boomers experienced intense parental nurture, Generation X weathered the highest parental divorce rate in history, the most complex family structures, the highest rates of domestic dissatisfaction, and the highest percentage of working mothers. The federal minimum wage and the purchasing power of benefits for children living in poverty both declined steeply during their formative years. As school children, they witnessed the retreat of grade inflation, the emergence of Proposition 13, and record high rates of childhood deaths from murder, suicide, and accidents.

Generation X is the poorest living generation; about 20% live in poverty, and economic distress seems to be following them as they transition from youth to adulthood. As they move through adulthood, they will continue to bear an enormous burden of federal debt, shifted from the three preceding generations. This generation may turn

Fueled by affluent Silents and Boomers, the rapidly growing market for a spectrum of alternative therapies is likely to expand significantly as both generations accumulate the chronic conditions and myriad aches and pains of advancing age.

generation so far and they want a change. Surveys show that Boomers seek less stress, more time for family, and a simpler life (Smith & Clurman, 1997).

Generation X

In contrast to the Boomers, the Generation X cohort group experienced great economic, political, domestic, and societal uncertainty during childhood. Now aged seventeen to thirty-five, this generation includes the "baby bust" cohort, the product of lower fertility and higher abortion rates; during the last three birth years of this cohort, one-third of fetuses in the U.S. were aborted (Strauss & Howe, 1991). Although birth rates were

out to be the first to achieve less higher education than their parents and are definitely taking longer to complete college. For example, the seven-year post-high school college graduation rate was only 37% for the class of 1980, compared to 58% for the class of 1972 (Strauss & Howe, 1991).

This generation is highly visual and highly computer literate and they insist on the latest in technology. Not as work-focused as the Boomers, members of Generation X are cautious and pragmatic, focused on the present. As customers, they want speed and convenience and novelty. Generation X seems to prefer diversity and spontaneity, in all

aspects of life. They are socially tolerant and have pursued a spectrum of alternative living groups, perhaps a spin-off from their complex families of childhood. They are both the most Republican-leaning youths in sixty years of polling research and the most heavily incarcerated generation in history (Strauss & Howe, 1991). Many were "lost" to the war on drugs. Not surprisingly, this generation is widely perceived, even among its members, as cynical beyond its years.

The Millennial Generation

By 1995, this generation already numbered seventy-two million and is projected to be about 60% larger than Generation X. Since birth rates are expected to continue to rise after the year 2000, it is likely that this generation will outnumber the Baby Boomers by 2015 (Crispell, 1995). Like the Boomers, this generation is receiving high parental attention. Many are born to parents who want them desperately—abortion is on the wane, infertility treatments and life-saving therapies for small premature babies continue to rise in frequency. These children enjoy the lowest child-to-parent ratio in history, with only 2% currently living in families with five or more children. They arrived at a time when concern about values, protection, and structure for children is on the rise.

This is the first living generation that has not experienced the threat of world war. With the demise of the Cold War, the common external enemy of communism has disappeared, replaced by a resurgence of tribalism at home and abroad.

While societal ambivalence about values continues, many worrisome trends have reversed: the divorce rate and the homicide rate for young children both peaked in the 1980s and other indices of violent crime are also dropping. The childhood poverty rate dropped for early cohorts in this generation but now seems to be rising again. Public interest in public schools and the quality of education is on the rise and school uniforms are increasingly popular. The early cohorts in this generation had the benefit of increased child poverty assistance, a trend that has reversed for later cohorts. Though it is too

early to have much information about this still incomplete generation, they already show some characteristics similar to the GI generation: friendly, optimistic, saving their childhood allowances.

Implications

Based on their theory of four repeating generational "types," Strauss and Howe predicted in 1991 that the nineties would be marked by declining confidence in societal institutions, erosion of respect for privacy, rising social intolerance, and an increase in tribalism and nativism, all of which seem to be on target. With a large

conditions and myriad aches and pains of advancing age. There will be opportunities for dental professionals to expand their practice into complementary areas such as nutrition counseling and herbal therapies. Cosmetic dentistry will have a strong appeal. If new technologies should yield major reduction in incidence of dental caries and periodontal disease, the inclusion of some alternative therapies could be a welcome new source of revenue for dental professionals. Several large surveys have clearly demonstrated the

As the order changes in universities and professional organizations and all sectors of life, the old rules will be voided and there will be a period of confusion and uncertainty as new rules emerge.

body of research suggesting that early life experiences shape the beliefs and attitudes both of individuals and of generational groups, it should be apparent that there are many valid world views, each of which is but a limited perspective on reality. Each generation has contributed to the advance of society, and each has left a legacy of problems for those who follow. That is the nature of the evolution of human consciousness. The patterns of generational behavior suggest at least six significant implications for the profession of dentistry:

1. Customers from the Baby Boom and Generation X will demand more of what they already seek: fast and convenient service, easy access, readily available information, and high value for their money. The dental professionals who can tailor their office hours and services to meet those demands should have a market advantage. The profile of dental health services is almost certain to shift, and cosmetic dentistry will have a strong appeal.
2. Fueled by affluent Silents and Boomers, the rapidly growing market for a spectrum of alternative therapies is likely to expand significantly as both generations accumulate the chronic

public's willingness to pay for such services and a number of health plans already include alternative therapies in their coverage (Eisenberg, Davis, Ettner, et al, 1998). In addition, as they age, the activist Boomers may continue their press for consumer rights by insisting that Medicare coverage also envelops a wider spectrum of alternative therapies.

3. As Boomers move into upper management and high profile leadership positions in all industries and professions, they will change the model, moving away from the authoritarian hierarchy that has dominated throughout this century. And members of Generation X taking over first line management positions will help. Both generations are likely to place more attention on self-fulfillment, variety of experience, and a balanced life. They recognize the value of a diverse workforce and are more attuned to diverse customers. As the order changes in universities and professional organizations and all sectors of life, the old rules will be voided and there will be a period of confusion and uncertainty as new

rules emerge. This period of uncertainty will be a great opportunity for the emergence of new leaders and for the redefinition of roles among the health professions.

4. The rewards of security and stable income will not be enough to keep the most talented Boomers and Generation Xers attached to any employer. With their emphasis on experience, opportunity for personal growth, and time for adventure and outside interests, Boomers may seek more flexible schedules, flock to second careers in higher numbers, and show greater interest in phased retirement. Individuals of Generation X also seek opportunity to grow, variety, and the chance to adapt to changing circumstances—and they want to have fun at work. Opportunities for continued training, participation in decisions, more latitude in work style, and greater commitment to keeping up with technology will be important in keeping this generation involved. Both generations have low loyalty to organizations, so re-recruitment of the talented will be imperative. One can no longer expect to recruit a colleague and keep her or him for decades. Whether one has a small office employing only several staff, a group practice with several dental professionals, or a large academic dentistry department, the challenges will be the same: offer opportunities for growth; use flexible scheduling and part-time arrangements to meet individual preferences; provide a spectrum of rewards, monetary and non-monetary; show appreciation regularly; create an environment where people can have fun at work; and re-recruit continuously.
5. In the academic health centers, employment relationships are beginning to change and new covenants of accountability between universities and

faculty members are emerging. Though triggered in large part by economic concerns, these new covenants offer the opportunity to create workplaces and work conditions more attractive to Boomers and Generation X. There are five changes universities could make to adapt faculty reward systems to meet both societal conditions and the needs and values of these two generations: (1) Clearly proclaim academic freedom to be essential to the mission, establish adequate protection to ensure it, and guarantee it to all faculty, uncoupling academic freedom from tenure decisions and employment contracts. (2) Develop a clearly articulated covenant that stipulates the mutual expectations of the university and faculty member, the respective obligations of each and the values that are most important to the university. (3) Establish a system to periodically renegotiate an agreement with each faculty member that would specify accountability: the outcomes or results expected, the standards for behavior and the rewards that can be anticipated if both behavioral standards and outcomes are met or exceeded. (4) Develop an equitable, understandable, systemic reward system that fosters alignment with mission and strategy, is attuned to the values and needs of faculty and staff, and rewards critical behaviors such as customer focus, entrepreneurialism, and rapid application of discovery. (5) Periodically question all institutional motivational and reward systems in light of mission and strategy.

6. Finally, as educated members of society, dental professionals could have an impact way beyond high customer satisfaction. They can actively promote peace and harmony by modeling openness to divergent views—by honoring the differences among generations.

We live in a time of immense challenge and unprecedented opportunity. The ways of looking at the world, attracting and retaining people, and doing business that worked so well are no longer sufficient. To anticipate and shape the future, it will be essential to recognize and accept that everything changes, let go of expectations for sameness and security, and see the world as it really is. That means letting go of stereotypes for adolescents and midlife adults and seniors, looking directly at the uniqueness of each generation, and anticipating different scenarios that might evolve as each generation takes its turn at leadership.

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Current Patterns and Future Trends in the Population of the United States: Implications for Dentistry and the Dental Profession in the Twenty-First Century

Steven H. Murdock, PhD, and Md. Nazrul Hoque, PhD

Abstract

Changes in the size, distribution and composition of the population of the United States will have significant effects on health care professionals in the coming years. For dentists and other professionals involved in health care provision, it is likely that among the effects of demographic change will be change in the characteristics of their patient base, change in the characteristics of health professionals, and potential change in the socioeconomic resources of their patients. In this article, we describe current and expected future patterns of change in the population of the United States and discuss their significance for dentistry in the twenty-first century.

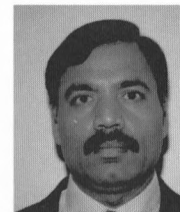
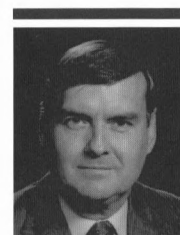
Although several potentially significant changes in the population are occurring that promise to impact future health care needs and services in the United States (Pol & Thomas, 1992), the discussion here will focus on three which we believe are among the most important relative to the magnitude of their potential impacts. Specifically, we examine the impacts of:

(1) the decline in the rate of population growth and changes in the sources of such growth; (2) the aging of the population; and (3) the increase in the number and proportion of minorities in the United States. These factors have been shown to markedly impact a variety of other demographic, socioeconomic, and service factors (Murdock, 1995; Murdock et al., 1997). Specifically, we first review the historical trends in these three factors, then examine the projected changes in these factors in the first half of the next century, and then discuss some of their implications for dentistry in the coming century.

Trends in Population Growth, Aging, and Minority Population Growth in the United States

Historical patterns of population change for the United States show the country to have experienced relatively rapid population growth. This growth has been from a population of only 3.9 million in 1790, when the first census was conducted, to 75.9 million by 1900, 248.7 million in 1990, and 267.6 million according to U.S. Bureau of the Census estimates for July 1, 1997 (U.S. Bureau of the Census, 1998a). Thus, the U.S. population displayed in-

creases of approximately 30% per decade during the 1800s and average rates of growth of roughly 15% per decade from 1900 to 1950. During the 1950s, when the baby boom period was at its peak, the decennial growth rate reached 18.5%, it was 13.4% during the 1960s, 11.4% during the 1970s, and 9.8% during the 1980s. According to 1997 estimates, the U.S. population has increased by 7.6% from 1990 to 1997 and is growing at a rate that, if continued through the remainder of the 1990s, will lead to an approximately 10.4% rate of growth in the population from 1990 to 2000.



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Although the rate of growth in the 1990s may slightly exceed that for the 1980s, the general trend in population growth in the United States since 1960, as in other developed countries, has been a pattern of decreasing rates of growth. In addition, under a wide variety of projection scenarios, future growth is likely to be slower growth with the population projected to increase at a rate of less than 10% per decade from 1990 through 2050 (Day, 1996).

Coupled with slower growth is the change in the sources of that growth. National population change is a result of two mechanisms—natural increase (which is the excess of births over deaths) and immigration from other nations. The population of the United States has historically increased primarily as a result of natural increase with immigration accounting for more than 50% of total population growth in only the decade from 1900 to 1910. Immigration has played an increased role in the last several decades, however. From 1980 to 1990, the number of immigrants to the U.S. was 7.3 million, the largest in any decade since 1900 to 1910, accounting for 29.7% of the nation's net growth from 1980 to 1990 (Murdock, 1995) and, from 1990 to 1996, immigration is estimated to have been 5.6 million, accounting for 29.8% of U.S. population growth (U.S. Bureau of the Census 1998a). These percentages compare to 13.5% in the 1960s and 18.8% of growth in the 1970s which was attributable to immigration.

The origin countries of immigrants to the United States have also changed dramatically during the past several decades. From 1820 (when the first immigration data were collected) through the 1960s, more than 50% of all immigrants were from Europe but, by 1980 to 1990, only 10.4% were from Europe while 47.1% were from Mexico and other parts of Latin and South America, and 37.3% were from Asia. In the 1990s, despite an increase in the number of immigrants from Europe, the dominance of non-European immigration has continued. From 1991 to 1996, Europe was the region of origin for 14.9% of immigrants to the United States, Mexico and Latin

and South America accounted for 48.7%, and Asia was the region of origin for 30.5% of U.S. Immigrants (U.S. Immigration and Naturalization Service, 1997).

The population of the United States has also aged significantly. In 1900, the median age of the population was 22.9 years, but by 1990 it was 32.9 years. Whereas roughly 4% of the United States population was 65 years of age or older in 1900, by 1990 12.6% of the population was of that age. Because of the aging of the well publicized baby-boom generation (persons born between 1946 and 1964) who account for roughly one-third of the U.S. population, the median age of the population will increase

migrants being increasingly diverse in their national and ethnic origins. The population is growing older and it is increasingly racially and ethnically diverse.

Projected Patterns of Future Population Change in the United States

How are the patterns noted above likely to evolve in the future? In this section we examine projected patterns relative to each of the population factors noted above using U.S. Bureau of the Census projections. The discussion emphasizes the middle of several population projection scenarios provided in the most recent U.S. Bureau of the Census' projections (Day, 1996).

The patient population will tend not only to become older and more ethnically diverse but also poorer.

such that by 2050 a median age of 38.1 years of age is expected with 20.0% of all persons being 65 years of age or older (Murdock, 1995).

Because of the increasing diversity of immigrants (Edmonston and Passel, 1994) and the higher birth rates of minority populations, the growth in minority populations has also increased substantially. Thus, during the 1980s, non-Hispanic whites (Anglos) increased by 4.2% while the African American population increased by 12.0%, the Hispanic population by 53.1%, and the "other" population category (consisting of Asians and Pacific Islanders, American Indians, and others who are not of Hispanic Origin) increased by 71.7%. Of the net population increase in the U.S. population from 1980 to 1990 of 22.2 million, 66.0% was accounted for by minority population growth. During the 1990 to 1997 period, it is estimated that the population increased by 18.9 million with approximately 66.8% being due to minority population growth (U.S. Bureau of the Census, 1998b).

In sum, then, the U.S. population is growing more slowly than in earlier decades. A larger proportion of that growth is due to immigration, with im-

The middle scenario is used because the Bureau indicates that this scenario is most likely to characterize the future population of the United States.

The middle scenario's projections assume that migration will average 820,000 per year throughout the projection period; this is a smaller number of immigrants than during the late 1980s and early 1990s, but greater than the number in the first part of the 1980s. The Bureau also assumes that the total fertility rate will increase from 2.0 children per woman in 1995 to 2.2 children by 2050, due to the growth of minority and immigrant populations with higher levels of fertility, and that life expectancy will increase from 75.9 years in 1995 to 82.0 years by 2050. We use these projections with full realization of their limitations, but with the expectation based on other analyses (Fosler et al., 1990; Murdock, 1995) that, although the exact number of persons projected to be in the future population is unlikely to be correct, the general trends are likely to be in the direction indicated.

This analysis uses only one means of defining racial/ethnic groups. There is no single most appropriate means either of deriving mutually exclusive racial/eth-

nic groups or referring to racial/ethnic groups. We use the terms Anglo, Black, Hispanic, and Other, with Anglos defined as Non-Hispanic persons of the White race, Blacks as Non-Hispanic persons of the Black race, Others as Non-Hispanic persons of all other races (except the White and Black races, so that the Other racial/ethnic category includes Non-Hispanic Asian and Pacific Islanders, American Indians, Alaskan Natives, and Aleuts, and persons in an other racial group category), and Hispanics defined as

Hispanics from all racial/ethnic groups. These categories were employed to produce values for which the sum across racial/ethnic groups is equal to the total population. The reference names used are employed because we believe they generally communicate commonly recognized groupings of the population.

Finally, in examining the results presented below, it is important to acknowledge that demography is not destiny (Murdock, 1995). A variety of social, economic, and other factors may have as

large, or perhaps even larger, effects on health services and expenditures than demographic forces. However, we believe that demographic change will play a substantial role in determining the future of service usage in the United States. Thus, we maintain that it is useful to examine the implications of such patterns for the future of dentistry in the United States.

The projections in Table 1 show a population of 393.9 million by 2050 (see Table 1, Panel 1) and indicate a likely average annual growth rate of 0.77% per

Table 1: Size, Change, and Characteristics of the Population of the United States in 1990 and Projected 1998-2050 (Middle Projection Scenario)

Year/Age	Anglo	Black	Hispanic	Other	Total
Panel 1: Total Population Change					
1990	188,128,296	29,216,293	22,354,059	9,011,225	248,709,873
1998	195,785,548	32,789,478	29,565,764	11,861,114	270,001,904
2000	197,061,204	33,568,144	31,365,806	12,638,488	274,633,642
2010	202,389,687	37,465,695	41,139,053	16,721,854	297,716,289
2020	207,392,991	41,538,365	52,652,350	21,158,235	322,741,941
2030	209,997,665	45,447,803	65,570,344	25,883,548	346,899,360
2040	209,620,908	49,378,524	80,163,857	30,816,855	369,980,144
2050	207,901,472	53,555,336	96,508,378	35,965,491	393,930,677
Panel 2: Percent Change in Population for Selected Time Periods					
1990-2000	4.7	14.9	40.3	40.3	10.4
2000-2010	2.7	11.6	31.2	32.3	8.4
2010-2020	2.5	10.9	28.0	26.5	8.4
2020-2030	1.3	9.4	24.5	22.3	7.5
2030-2040	-0.2	8.6	22.3	19.1	6.7
2040-2050	-0.8	8.5	20.4	16.7	6.5
1990-2050	10.5	83.3	331.7	299.1	58.4
1998-2050	6.2	63.3	226.4	203.2	45.9
Panel 3: Percent of Population by Race/Ethnicity for Selected Time Periods					
1990	75.7	11.7	9.0	3.6	
1998	72.5	12.1	11.0	4.4	
2000	71.8	12.2	11.4	4.6	
2010	68.0	12.6	13.8	5.6	
2020	64.2	12.9	16.3	6.6	
2030	60.5	13.1	18.9	7.5	
2040	56.7	13.3	21.7	8.3	
2050	52.8	13.6	24.5	9.1	

Table 1: Size, Change, and Characteristics of the Population of the United States [continued]

Year/Age	Anglo	Black	Hispanic	Other	Total
Panel 4: Percent of Population by Age Group 1990 and 2050					
1990					
<18	23.3	31.9	34.7	30.2	25.6
18-24	10.0	12.3	14.2	12.2	10.7
25-34	16.9	18.0	19.7	19.0	17.4
35-44	15.5	14.0	13.2	16.4	15.1
45-54	10.7	8.7	7.7	9.7	10.1
55-64	9.2	6.6	5.3	6.3	8.5
65-74	8.3	5.1	3.2	4.1	7.3
75-84	4.7	2.6	1.6	1.7	4.1
85+	1.4	0.8	0.4	0.4	1.2
2050					
<18	20.0	28.8	30.8	26.3	24.4
18-24	8.0	10.5	10.8	10.0	9.2
25-34	11.5	13.3	13.7	14.2	12.6
35-44	11.7	12.5	12.0	13.3	12.0
45-54	11.6	10.8	9.9	11.6	11.0
55-64	12.2	9.9	8.5	9.4	10.8
65-74	10.6	7.5	6.3	7.2	8.8
75-84	8.4	4.2	4.6	4.8	6.6
85+	6.0	2.5	3.4	3.2	4.6
Panel 5: Percent of Net Population Change 1990 to 2050 Due to Change in Each Racial/Ethnic Group					
	Race/Ethnicity	Number	Percent		
	Anglo	19,773,176	13.5		
	Black	24,339,043	16.8		
	Hispanic	74,154,319	51.1		
	Other	26,954,266	18.6		
	Total	145,220,804	100.0		

Source: Derived from U.S. Bureau of the Census projections for 1998-2050 (Day 1996)

year from 1990 to 2050 (see Table 1, Panel 2). Immigration will play a large role in future population change in the U.S. These projections of the population of the United States (Day, 1996) suggest that 55% of the net growth in the U.S. population from 1990 to 2050 is likely to

be due to immigrants and their descendants. When immigrants' descendants are taken into account, this percentage is not unprecedented (see Passel and Edmonston, 1994) but nevertheless suggests that the effects of immigration will be substantial. Immigrants are also pro-

jected to continue to come from diverse areas of origin with the vast majority coming from Mexico, Latin and South America, and Asia (Murdock, 1995). As a result, immigrants will likely also play an increasing role in health service utilization in the United States, exerting de-

mands for a greater diversity of products and services.

The trend toward an older age structure in the U.S. population was discussed above. This aging of the population base is expected to continue, with the U.S. population reaching a median age of

the total U.S. population composed of Hispanics is expected to be 24.5% in 2050 compared to 9.0% in 1990; the proportion of Blacks would increase from 11.7% in 1990 to 13.6% in 2050; and the proportion in the Other racial/ethnic group (other than Anglo, Black, and Hispanic)

the socioeconomic characteristics of the population. Change in socioeconomic characteristics are likely to occur because of the differences that exist in the income and other resources of persons of different ages and racial/ethnic backgrounds. For example, in 1996, the median household income of households with a householder (head) 15-24 years of age was \$21,438, it was \$50,472 for a household with a householder 45-54, but \$19,448 for a householder 65 years of age or older. Similarly, although the median household income in 1996 was \$38,787 for households with an Anglo householder, it was only \$23,482 for households with a Black householder, and \$24,906 for those with a Hispanic householder (U.S. Bureau of the Census, 1997). As a result, if changes do not occur in these socioeconomic differentials, the patient population will tend not only to become older and more ethnically diverse, but also poorer. An analysis of a similar set of projections by Murdock (1995), in fact, estimates that the average U.S. household in 2050 would have an income about \$2,000 less (in 1990 constant dollars) in 2050 than in 1990 and that the percent of families in poverty would increase by 3.0 percent, if the socioeconomic differentials by age and race/ethnicity do not change.

For dentistry, such changes also suggest the need to increase the number of minority dentists. Table 2 shows the results of a projection in which dentist to patient ratios for 1990 (approximately

35.6 by 2000 and 38.1 years by 2050. These changes will be reflected among age groups both numerically and proportionally. The proportion of the population less than 25 years of age is projected to decrease from 36.3% in 1990 to 33.6% in 2050 (see Table 1, Panel 4). On the other hand, the population of elderly persons, those 65 years of age or older, will increase from 12.6% in 1990 to 20.0% by 2050 (see Table 1, Panel 4).

Substantial differences also exist in the age structures of Anglo versus minority populations. For example, whereas 14.4% of the Anglo population was already 65 years of age or older in 1990, 25.0% will be 65 years of age or older under the middle scenario in 2050. Only 5.2% of the Hispanic population, 8.5% of the Black, and 6.2% of the Other populations were 65 years of age or older in 1990, and under the middle scenario only 14.3% of the Hispanic, 14.2% of the Black, and 15.2% of the Other population is projected to be elderly in 2050 (see Table 1, Panel 4).

The trend toward an increasing number and proportion of minority residents is also evident in these projections. Of the total net increase of 145.2 million persons projected to be added to the U.S. population between 1990 and 2050, 74.2 million are projected to be Hispanic, another 24.3 million are projected to be Black, and persons in the Other racial/ethnic group are projected to account for about 27.0 million of the total net increase (see Table 1, Panel 5). Thus, 86.5% of the net change in population is projected to be accounted for by members of minority groups. If these patterns continue, the proportion of

would increase from 3.6% in 1990 to 9.1% in 2050. The proportion of the total U.S. population composed of members of minority groups would be 47.2% in 2050 compared to 24.3% in 1990 (see Table 1, Panel 3).

Significance of Current and Future Patterns of Population Change

Why are the current and future patterns of population change noted above significant? Their effects are both direct and obvious and indirect and subtle. First, slower rates of population growth point to slower growth in markets for all goods and services, including general health and dental services. Thus, the declining rate of population growth is likely to lead to reduced rates of growth in the total number of potential patients.

Equally important, the nature of that growth is likely to markedly alter patient characteristics. The diversity of origins

It may be necessary to carefully plan the location of future training and educational centers for the dental profession.

of immigrants coupled with faster rates of growth among minority populations is likely to lead to larger proportions of minority populations and patients. Similarly, the aging of the population will lead to an older patient population with the health care needs of older populations.

Less obvious is the fact that such changes are likely to lead to changes in

0.58 dentists per 1,000 population) are applied to the population in 1990 and for periods through 2050. In these projections, it is assumed that the number of dentists needed from a given racial/ethnic background is similar to that of the population. Although dentists can obviously serve persons from backgrounds different than their own, Table 2 pro-

Table 2: Projected Number and Percent Change in Number of Dentists Needed from 1990 to 2050 by Race/Ethnicity Assuming Dentists Have the Same Race/Ethnicity Backgrounds as Patients and 1990 Ratios of Dentists to Population (Middle Projection Scenario)

Year	Anglo	Black	Hispanic	Other	Total
1990	109,303	16,975	12,988	5,236	144,502
1998	113,752	19,051	17,178	6,892	156,873
2000	114,493	19,503	18,224	7,344	159,564
2010	117,589	21,768	23,902	9,716	172,975
2020	120,496	24,134	30,592	12,294	187,516
2030	122,009	26,406	38,097	15,040	201,552
2040	121,790	28,689	46,576	17,906	214,961
2050	120,791	31,116	56,073	20,898	228,878
Percent Change:					
1990-2050	10.5	83.3	331.7	299.1	58.4

Source: Derived by applying 1990 dentist to population ratio of 0.58 dentists per 1,000 persons to the 1990 Census population and to U.S. Bureau of the Census population projections 1998-2050 (Day 1996)

vides data that suggest a need for substantial growth in the number of minority dentists. Thus whereas the total number of dentists would have to increase by 58.4% from 1990 to 2050, the number of Anglo dentists would need to increase by only 10.5% while the number of minority dentists would need to increase by 207.1% from 1990 to 2050.

In sum, what do these demographic changes suggest about the future of dentistry and for the dental profession in the coming years? Decreased rates of growth suggest that the market for such services may also decline. However, it must be recognized that there will be substantial variability in growth patterns across the United States. Patterns from both the 1980s and the 1990s, for example, have shown much faster growth in the South and West than in the Northeast and Midwest, with the South and West accounting for 88.8% of net population growth in the United States in the 1980s and 81.2% from 1990 to 1997. Under conditions of slower growth, evaluations of geographic factors affecting the viability of practice locations may come to play a larger role in the selection of a practice area than in the past. Similarly, it may be

necessary to carefully plan the location of future training and educational centers for the dental profession, if such centers are to be located in the fastest growing parts of the country. Finally, although the growth rate in the United States and most developed countries is projected to be relatively slow, it is important to recognize that many other parts of the world are expected to

A growing part of the patient base may need assistance in meeting the cost for dental services.

show substantial growth, making the opportunities for international training increasingly viable.

Age structure changes are likely to lead to decreases in the number of children and increases in the number of elderly patients and it is apparent that among children an increasing proportion will be minority children. It is likely that

to the extent that the mix of specialties reflects the needs of specific age groups shifts toward the growing segments of the population may be necessary. Similarly, if the socioeconomic resources of minorities do not change, it may be necessary to adjust to a patient population of children from families with more limited socioeconomic resources.

Finally, it is obvious that due to both immigration and patterns of natural increase, an increasing proportion of dental patients will be minority population members with potentially different cultural and other expectations for dentists and other health professionals. It is likely that serving this growing population segment will require that the dental profession both show substantial sensitivity to cultural and ethnic differences and that it increase its number of minority dentists. In addition, as with children, if the socioeconomic resources of minorities do not improve, a growing part of the patient base may need assistance in meeting the costs for dental services.

Overall, what these patterns suggest is that the twenty-first century is likely to pose substantial challenges for den-

tists and the dental profession. Preparing for the service and professional changes likely to result from the changing demography of the United States should be a priority for the profession in the coming years so that such changes can be made into opportunities for, rather than limitations to, the growth in the profession.

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Trends: Immigration and Technology

Bruce Arthur Miller, CPA

Abstract

America is experiencing a new wave of immigration that many say will be larger than the one beginning just before 1900. But this immigration is more global in origin and will result in making many states so diverse that there is no "majority" culture. Immigration will fuel the economy and will be particularly advantageous to those businesses that can recognize and respond to the needs of the new immigrant groups.

A projected increase in total U.S. population of 65 million persons from 1998 to 2025 (from 270 to 335 million) implies future demand for the creation of more services of all types. That population increase is the same as the one that occurred from 1969 to 1994—a period of immense development. Almost 80% of our absolute population growth will occur among minority groups, groups that are, on the average, less affluent and less well educated than the majority of the population. By 2020, about 45% of all U.S. children under nineteen will be members of minority groups. And, more than any other force, immigration will drive U.S. population growth in the twenty-first century.

To put immigration in perspective, let's look back. The first great immigration wave occurred around the turn of

the century, when immigrants arrived on U.S. shores primarily from Ireland, England, Germany, and other European countries. This immigration wave reached a peak in the 1901-1910 decade, during which 8.8 million immigrants arrived in the United States.

Between 1991 and 1996, 6.1 million immigrants arrived in the United States, or an average of about one million immigrants annually. If that rate of immigration continues, immigration in the period 1991-2000 should reach approximately 10 million. That would be the highest of any decade in U.S. history. Obviously, the impact on the overall economy and services such as dentistry will be stronger as well.

Immigration and Diversity

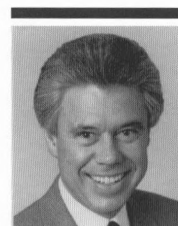
Let's take a look at how the immigration mix will change. In 1996, the number of legal immigrants admitted to the United States totaled 915,900. That is an increase of 27% from the 720,461 admitted in 1995. It is estimated that more than 200,000 illegal immigrants also came into the U.S. in 1996. In contrast to the waves of immigration from Europe and Russia in the nineteenth and early twentieth centuries, many of today's immigrants come from Mexico and Asia.

Nearly two-thirds of all 1996 immigrants intended to reside in just six states and in seven metropolitan areas. This is a huge influx of people and energy for Chicago, Houston, Los Angeles, Miami, New York, San Francisco, and Washington, DC. These "gateway cities" are

popular because immigrants find a support network of family and friends as well as other immigrants from their home countries. In these cities they are able to buy homes or acquire space for start-up businesses at attractive prices, especially in the tough, "disadvantaged" areas of the city.

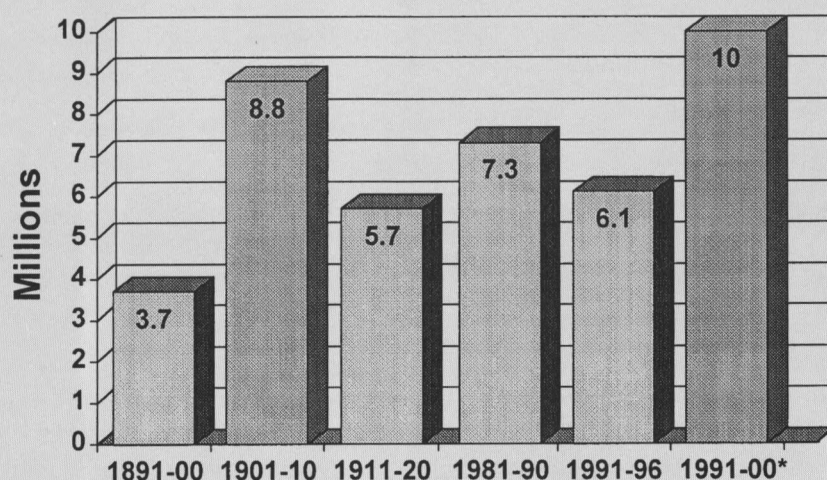
The Washington Post noted that "within the lifetimes of today's teenagers, no one ethnic group—including whites of European descent—will comprise a majority of the nation's population." By 2000, California will become a "majority minority" state where no single ethnic group is in the majority, or accounting for more than 50% of the population, according to the Census Bureau. In the near future, Maryland, Nevada, New Jersey, and Texas will also become majority minority states. This is already the case in Hawaii and New Mexico.

The greater diversity of the population in the next century will change the face of urban politics. It will increase the power and influence of the emerging immigrant population—and their descendants—at every level of government



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The Surge in U.S. Immigration



***Projected increase in immigration 1991-2000
based on rate of increase 1991-1996**

from Washington to state capitals to city councils. It will affect decisions of vital importance to every industry and all local governments.

Furthermore, the demographic mix of the United States will change even more dramatically by 2050, as shown in the accompanying table.

Impact of Immigration

If immigration continues indefinitely at its current level, 387 million people will live in the United States by 2050. This will represent an increase of 124 million from 1995. Immigrants and their descendants will account for 80 million or two-thirds of this increase in the U.S. population between 1995 and 2050.

This increase in the immigrant population will create new demand in every sector of the economy. It will create more than 36 million jobs by 2050 (based on current ratios of population to employment). Per capita income of each immigrant will be \$25,670 in 2050, or a total of more than \$2 trillion (in 1997 dollars) in the economy. From a housing standpoint, at current average household size, these 80 million immigrants and

their descendants will require approximately 30 million dwelling units by 2050.

A major factor for immigrants will be housing. One thing that immigrants and native-born Americans have in common is a strong desire to own a home. But the

American dream of home ownership may be even stronger among immigrants. The reason is simple. Many come from countries where there is no legal, private housing market, or such a market is in only its early stages of development, or only the very wealthy can afford homes. Despite their desire for a home of their own, immigrants generally have to live and work in the United States for about ten years before they have accumulated the capital to make a down payment on a home.

Some Prognostications

Immigration will have an even greater impact on the US economy in the twenty-first century than it has had in this century.

1. The new immigration wave will create significant opportunities for every segment of the service economy.
2. One of the major impacts in the new immigration wave in the short run will be to physically rejuvenate local real estate including: neighborhood and community shopping centers, industrial parks, and the inner cities and in older suburban neighborhoods.
3. Over the long run, immigrants will become assimilated into the economy and will become major stakeholders

1996* U.S. Immigration: Country of Origin

Many of the recent immigrants to the U.S. have arrived from Mexico and Asia.

Rank	Country	Immigrants
1.	Mexico	163,572
2.	Philippines	55,876
3.	India	44,859
4.	Vietnam	42,067
5.	China	41,728

*Fiscal year

Source: Immigration and Naturalization Service

1996 Immigration: States of Intended Residence*

Nearly two-thirds of all 1996 immigrants intended to reside in just six states

<u>State</u>	<u>Immigrants</u>
California	201,529
New York	154,095
Texas	83,385
Florida	79,461
New Jersey	63,303
Illinois	42,517

*Fiscal 1996

Source: Immigration and Naturalization Service

It's clear that the dramatic changes created by the new wave of immigration are only beginning to ripple through the economy and the real estate industry, and they should serve as a wake-up call for builders, developers, and others in the industry. All of us need to realize that the world is coming to your doorstep. In the gateway cities, and other markets, their future tenants, buyers, customers, investors, business partners, managers, and employees increasingly will come from the nation's rapidly growing immigrant population. We need to start thinking of how to take advantage of the opportunities created by the immigration wave, but how to position their companies and organizations to target immigrant markets, learn about the needs of immigrant communities, and form partnerships with immigrant-owned businesses, and recruit managers and employees from the immigrant community and train them to be future leaders in your companies. The message for all segments of the service economy is clear: don't be left in the dust by competitors who have learned how to capitalize on the immigration boom.

in just about every facet of several industries.

4. The current dynamics of local politics as it affects the development of retailing in local communities will significantly change as the result of increased immigration.
5. A market will evolve for ethnically-themed entertainment, recreational, and retail facilities as specific ethnic enclaves become large enough to support them.
6. There will be a greater need for immigrant-focused service companies such as those providing specific immigrant-related market research and marketing services.
7. Immigration patterns will have an increasingly greater influence on corporate location decisions.
8. Local communities will have to work closely on programs to recruit, educate, and train immigrants for the labor force—with communities making this investment emerging as the new targets for corporate relocation.
9. More land will need to be set aside for school facilities as immigrants have larger primary families. Public

infrastructure will likewise need to be expanded to cope with the population and economic growth engendered by this immigrant wave.

U.S. Population: A Changing Mix

◆ The U.S. population will become more diverse in the 21st century.

	<u>1995</u>	<u>2050</u>
Hispanic	9%	25%
Asian	3%	8%
White*	74%	50%
Black*	12%	14%
Other	2%	3%

*Non-Hispanic

Source: National Academy of Sciences

Dental Education—Issues and Trends

Jeanne C. Sinkford, DDS, PhD, FACD

Abstract

This article is a survey of the current status and likely future changes in dental education in the context of changing demographics, economics, and higher education. Topics covered include changes in faculty, students, curriculum, research, and dental practice.

In addition to the ability to secure the financial resources needed for institutional support, universities now face two major challenges that affect their survival: (a) reassessment of the role of the university within the context of societal needs and expectations and (b) expansion of global communications technology.

These challenges will affect the strategic directions and management of resources for both the universities and their dental schools well into the next century. However, during this period of rapid metamorphosis, dental schools will sustain their viability through their tripartite missions of education, research, and service. In so doing, they will contribute to the aura and emerging role of their parent institutions in "extension of walls," outreach, and other collaborative venues.

It is neither the best of times nor the worst of times for dental schools as they address systematic, technologic, human resource, and societal issues that will help sustain their prestige among the community of scholars within their universities.

The current trends in telecommunications alliances and computing tech-

nologies have produced instantaneous global communications upon which the new global economy depends. John Naisbitt, the predictor of major trends that have transformed our world, has observed that "technology now makes stranger bedfellows than politics" (Naisbitt, 1994). This staggering trend toward telecommunications alliances is paying little attention to national borders. We have seen this in the merger of digital programming skills of Americans with the Japanese experience in consumer electronics. These types of alliances are occurring within the educational community also with the emergence of distance learning and the virtual university—examples being: The Western Governors University, the Virtual Automotive College in Michigan, and the program at the University of Phoenix involving thirty-one states with branches in Europe and 66,000 students.

As early as the year 2000, televisions are expected to have the power of personal computers. This potential for knowledge expansion and increased consumer demand pose immediate challenges to our universities and to our dental schools especially in the areas in the areas of allied and continuing dental education.

Current Status

Dental education, unlike medical education, has undergone downsizing with the closure of six private dental schools between 1980 and 1991, and Northwestern will close its doors in 1999. Downsizing within the remaining dental schools has resulted in a 37% decline in undergraduate dental enrollments. In addition to

downsizing, dental schools have revised their operations in keeping with the 1998 Accreditation Standards and they have instituted such changes as: the merger of clinical departments, the modernization of clinics, introduction of computer-assisted simulators for preclinical instruction and testing, expanded clinical delivery systems to create a more patient oriented environment for students and faculty practice, expanded extramural clinical experiences, and introduced problem-based learning across disciplines.

Based on population growth estimates and the current number of dental graduates per year at 4,000, dentistry is expected to experience a decline in the ratio of professionals to population. Today, there are 55 dentists per 100,000 Americans. If current trends continue there will be 46 dentists per 100,000 by the year 2020. Recent studies by the Institute of Medicine (Fields, 1995) and the Pew Health Professions Commission (The Pew Health Professions Commission, 1995) have not recommended a further reduction in dental graduates. In fact, there is one new school in Florida, at NOVA Southeastern University, and a



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school contemplated at the University of Nevada at Las Vegas (UNLV).

This paper will address five issues and trends that pose specific challenges to dental education: Faculty, students, curriculum, research, and dental practice.

Faculty

Within the fifty-five U.S. dental schools, there are approximately 11,600 FTE faculty and 5,100 full-time faculty. Women now constitute 21.8% of full-time faculty. Of major concern to dental educators is the "graying" of faculty and limited opportunities for funded graduate experiences in both specialty and PGD programs. Kennedy (1995) in his review of dental faculty status confirms the 1990 estimate of need for approximately 200 well-trained individuals to enter academic dentistry each year. This 1995 report cited, also, the 40% decline in basic science faculty since 1981. The shortage of adequately trained oral health research personnel has been addressed with recommendations by the National Research Council (1994). The increased emphasis on research within our universities will affect new faculty hires and faculty development activities. Dental faculty will continue to be judged by academic credential requirements that include research and publication for promotion to senior ranks. There is a critical need for the funding of graduate dental educational programs to assure qualified faculty in

tion, by specialty and geographic area of interest. The Registry is a step toward matching potential faculty with institutional needs. It also enhances the capacity of dental schools to participate in the federal FLRP (Faculty Loan Repayment Program) that allows student debt reduction in addition to the salary paid by the institution to new faculty hires.

Students

The decline in dental student enrollment seen during the eighties has been reversed, resulting in a steady increase in applicants since 1991. At the present time, there are approximately 8,100 applicants for the approximately 4,200 first-

are major concerns related to student education debt and the influence of that debt on career choice. The average student debt for all schools in 1997 was \$81,688 (American Association of Dental Schools, 1998b). This debt varies significantly depending upon the type of school attended—\$93,583 for private/state related schools and \$113,128 for private schools. Only 13% of 1997 graduates reported no debt. Thus, our schools are challenged to find ways to reduce educational costs that will ultimately be used to contain or reduce the rate of escalation of debt from the 7.8% seen in 1997.

Dental schools are experiencing a decline in underrepresented minority en-

Dental education, unlike medical education, has undergone downsizing with the closure of six private dental schools between 1980 and 1991, and Northwestern will close its doors in 1999.

Dental schools will sustain their viability through their tripartite missions of education, research, and service.

the eight clinical specialty areas, in the basic sciences, and in the general practice disciplines.

The American Association of Dental Schools (AADS) has developed a Faculty Applicant Registry (FAR) to assist dental deans and program directors in their search for junior and minority faculty. FAR identifies postgraduate trainees who are interested in careers in dental educa-

year slots. The high demand and intense competition to enter dental schools has resulted in the acceptance of highly qualified and motivated students. This trend, also, reflects a perception by college-age students that dentistry is a viable and financially rewarding profession.

Within dental enrollment trends there was a sharp increase in the enrollment of

rollment according to ADA Survey data (American Dental Association, 1994-1997). Underrepresented Minority (URM) groups have included: African-American/Black, Hispanic, and Native Americans. Whereas we are seeing shifts in URM enrollment in states affected by the Hopwood (Texas) and Proposition 209 (California) decisions, it is too early to judge fully the impact of these decisions. The vast majority of dental schools have consistently failed to enroll URM students at rates commensurate with their proportion in the general population. Both Black and Hispanic enrollment showed a steady decline from 1994 through 1997, with Blacks going from 973 students in 1994 to 883 in 1997 and Hispanic students going from 1045 to 825 during the same period. Of the 16,926 undergraduate dental students, fewer than 1,000 of these students are African-American and fewer than 1,000 are Hispanic.

Strategic measures are needed to enhance the pipeline of qualified minority students that will seek careers in dentistry

women during the eighties that has now leveled off to approximately 36% (American Association of Dental Schools, 1998a). The increased number of women in the profession offers a challenge regarding their potential value to both the education and practice communities of the future.

While we are enjoying a significant rebound in dental school enrollments, there

now and in the future. AADS is working with the ADA in a joint effort to address this issue that will ultimately affect the health of the growing numbers of minorities in the U.S. population. Dental schools are challenged to build a dental workforce that reflects the nation's diversity.

Curriculum

Dental school curricula average 4892.6 clock hours with a range of 3997 to 8285 hours (American Dental Association, 1996). Nearly 40% of the dental curriculum is in clinical sciences with the largest component is operative dentistry (687.0 hours) followed by fixed prosthodontics (467.8 hours) and removable prosthodontics (438.7 hours). It is impossible to make judgments with regards to curriculum innovations or content from this survey. However, there appear to be significant limitations with regards to clinical nutrition, and women's health issues are not identified in the survey.

The most recent review of dental curricula that was included in the IOM Study (Fields, 1995) resulted in two major recommendations with regard to dental school curriculum goals. Recommendation #4 relates to "modernization of courses, eliminating marginally useful and redundant course content, and reducing excessive course loads." Also, in the IOM Recommendations, #5 challenges schools "to prepare future practi-

shortages of services." Dental education is now being challenged to become more closely integrated with medicine and the health care system on all levels: education, research, and patient care.

Research

The research capacity of U.S. dental schools varies with roughly a third having

tistry and medicine in basic biomedical, clinical, and health services research. The benefits to be accrued from collaborative research strategies will contribute to newer diagnostic and treatment procedures, especially for aging and medically compromised patients. It will contribute, also, to the understanding of the complexity of disease processes, particularly

The high demand and intense competition to enter dental schools has resulted in the acceptance of highly qualified and motivated students.

substantial (\$1.0+ million) research activity and resources. The tripartite mission of dental schools creates a serious limitation to research development where the primary focus relates to student education and patient care. The direction of the newly renamed National Institute for Dental and Craniofacial Research (NIDCR) expands the national research horizon for dentistry and creates opportunities for enhanced research collaboration of dental researchers with medical colleagues and other scientific researchers.

Since NIDCR is the major funding resource for dental research and research training, a serious collaborative effort is needed to sustain and increase the research capacity of our dental schools.

with regard to hereditary, neoplastic and chronic degenerative diseases, and to environmental risk factors created by air pollution, toxic and nuclear waste, and low-frequency electromagnetic radiation.

Dental Practice

Our dental graduates are being prepared to enter and succeed in a rapidly changing health care delivery system with unknown challenges and opportunities. They will enter practice at a time when managed care systems are increasing, where great disparities in access to care exist, and where solo practice is on the decline (although according to the ADA, 69.4% of those in private practice are still solo practitioners). In spite of efforts to maintain high quality, affordable health care, the long-term estimates by Health Care Financing Agency (HCFA) anticipate that health care spending will grow more rapidly in coming years. Our graduates will be treating patients with increased knowledge about their health, demands, and expectations. The system will increasingly require more accountability for adherence to practice standards, for outcomes assessment, and for reviews of the appropriateness of treatment. It is possible that this complexity of issues has contributed to the change in the immediate practice plans of dental graduates. More than a third of dental graduates now plan to enter postgraduate educational programs (American Association of Dental Schools, 1998b) and

There is a critical need for the funding of graduate dental educational programs to assure qualified faculty in the eight clinical specialty areas, in the basic sciences, and in the general practice disciplines.

tioners for more medically based modes of oral health care and more medically complicated patients." Recommendation #7 recommends that "a general dentistry or specialty program be available to every dental graduate with emphasis on creating new positions in advanced general dentistry and discouraging additional specialty residencies unless warranted by

Advances in science and technology will demand the increased participation of faculty in competition for grants especially in the fields of molecular biology, immunology, neuroscience, and genetics.

Dental schools, therefore, will be challenged to increase their collaborative research and research training efforts and to forge new partnerships between den-

Demographics

fewer than 10% expect to enter solo practice upon graduation. This expressed need for additional training supports the direction that we are taking toward a mandatory fifth year. We expect that this goal is achievable within the next ten years. The fifth year is expected to be available to all students without additional costs to the students.

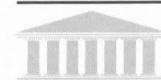
Dental schools will continue to be "safety-nets" for the delivery of care to underserved patients. Students, therefore, will be exposed to patient treatment in a variety of extramural treatment facilities such as primary care clinics, neighborhood health centers, nursing homes, and other facilities that will be designed to increase access to health care. Extramural program experiences will increase the exposure of students to patients with complex medical problems and will include their interaction with other health professionals in the delivery of care.

Summary

Dental schools are making efforts to provide academic environments and patient treatment opportunities that will produce qualified dental practitioners who are prepared to function in a changing health care delivery system. Our schools are prepared to continue as vital and viable components of their universities. The unique contribution that dental schools make to their universities will be the discovery of new knowledge through research, the production of competent dental practitioners, and outreach activities that elevate the value of the university in the minds of the American people.

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Annual Survey of Freshmen

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

An annual survey of freshmen in a representative sample of all United States institutions of post-secondary education has been conducted since 1966 by the Cooperative Institutional Research Program (CIRP), as part of a national study of the American higher education. The survey is now housed in the Higher Education Research Institute, at UCLA graduate school of education, and is cosponsored by the American Council on Education. The founding director was professor Alexander W. Astin; the survey is now directed by Dr. Linda J. Sax.

Standardized data are collected from fourteen hundred institutions of higher education, involving over nine million students. Focus is on entering college freshman. Questions are asked about background of students and their parents, career plans and personal aspirations, personal habits, opinions on social issues, etc. Revised periodically, some of the questions have been repeated for over twenty-five years and provide insight into evolving patterns.

Recently reported is a record level of academic disengagement. Over the ten-year period from 1987 to 1997, self-reported frequent boredom in class rose from 30% to 37%, oversleeping and missing class from 30% to 36%, while spending six or more hours per week on homework fell from 45% to 36%. In terms of voting in student elections, interest in tracking political affairs, discussing politics, and working on political campaigns, focus has turned away from political involvement.

Fall 1997 Freshman Selected Demographic Characteristics

<u>Characteristic</u>	<u>Percent</u>	
	1969	1979
Parents living with each other		69.6
Will require remedial work in		
English ('79)		11.8
Science ('79)		9.3
Native speaker of English		93.9
US citizen	98.0	96.4
Born-again Christian		29.5
Father a physician or surgeon	2.0	2.2
Father a lawyer	1.2	1.8

Fall 1969 and 1997 Freshman Distribution of Racial and Ethnic Background

<u>Background</u>	<u>Percent</u>	
	1969	1997
White/Caucasian	90.9	80.7
African American/Black	6.0	10.6
American Indian	0.3	3.1
Mexican American/other Latino	1.0	4.2
Asian	1.7	5.3
Other	0.2	2.9



The percent of entering freshmen who agree that abortion should be legal was 54% in both 1979 and 1997; but between these points, it rose to 66% in the early 1990s. A similar swing in attitudes regarding legalization of marijuana were noted. In both 1968 and 1989, fewer than one in five freshmen favored legalization. The "high" was reached in 1977 when 53% of freshmen expressed an opinion in favor of legalizing marijuana. The trend is rising rapidly again and is at about 35%. Frequent cigarette smoking has doubled to 17% during the past decade, while frequent beer drinking has fallen from near 75% in 1981 to under 55% in 1994.

The American family from which college students are drawn reflects changes in society, with 10% of mothers being full-time homemakers (35% in 1976) and almost 30% of freshmen coming from homes with divorces or separations (compared to less than 10% in 1972).

A very important factor in college selection is low tuition or offers of financial assistance. This has increased from 20% in 1970 to 30% in 1995.

Students report more academic stress at the same time they report less involvement in academic pursuits and grade inflation in high school is apparent.

In the thirty years of this survey between 1966 and 1996, the educational aspirations of entering freshmen have increased. At the beginning of this period, slightly more than 30% reported aspira-

Fall 1997 Freshman Self-Reported Behavior and Attitudes

<u>Behavior and attitudes</u>	<u>Percent</u>		
	1969	1985	1997
In last year:			
Attended religious service	89.2		81.5
Smoke cigarettes frequently	5.5		16.1
Drink beer frequently	56.4		52.7
Feel overwhelmed		16.0	28.5
Feel depressed		8.2	9.2
Performed volunteer work		70.4	73.1
Overslept/missed class	23.9		34.5
Used personal computer		24.9	56.7
Six or more hours per week:			
Studying			33.9
Socializing			77.3
Partying			31.4
Volunteer work			8.6
Watching TV			29.5
Important objectives in life:			
Be very well off financially	44.5		74.9
Be successful in own business	45.8		41.1
Be a community leader	17.6		31.2
Help others in difficulty	65.5		61.0
Opinions on issues:			
Favor nat'l health care		60.5	72.4



tions to a master's degree and 10% were pointing toward a doctoral degree. In 1996, these numbers were just under 40% and 15%. Not reported in the survey of freshmen is the fact that the first-year dropout rate in American higher education is over 25%.

Women expressing an interest in the MD degree has risen sharply from 1.7% in 1969 to 9.9% in 1994. The interest of men in becoming physicians has varied a few percentage points around a relatively constant 7% over the same period. The same, gender-related pattern is true for professional degree aspirations generally, including law, health, and other doctoral-level careers. It has varied between 20% and 25% for men between 1968 and 1993; while it has risen steadily from about 7% to over 25% for women, recently surpassing men.

Between the 1960s and 1990s interest in business as a career has fluctuated from a starting level of 15% to almost double that in the late 1980s, and has now settled back to baseline. During the same period, interest in health fields has tripled from 5% to 15%.

Various reports are available for sale from the Higher Education Research Institute. These include the annual reports on freshmen, ethnic issues in higher education, faculty, and degree attainment rates. Those interested are advised to phone at (310) 825-1925 for a publication list and applicable prices.

Fall 1997 Freshmen Probable Careers

<u>Career</u>	<u>Percent</u>	
	1977	1997
Dentist	0.9	0.8
Lab technician, hygienist	2.1	0.5
Lawyer	4.4	3.3
Physician	3.2	5.5
Veterinarian	1.4	1.5
Pharmacist	0.8	1.0
Engineer	8.3	7.7
Elementary teacher	4.0	5.6
Business	14.5	12.0
Clergy	0.5	0.2
Probable major		
Premed, predent, prevet	3.3	3.9
All biology	4.7	6.3
All business	22.2	15.9
All education	8.8	10.1

Managed Care: An Ethical Controversy in Dentistry as Viewed by a Dental Student

Anthony G. Petrilli

Abstract

This essay defines managed care and presents three particular ways it affects the profession of dentistry. The first issue is whether managed care is needed in dentistry; the second is the effects of managed care on treatment; and finally the dentist-patient relationship is examined. It is incumbent on dental students to be highly proficient in understanding and managing managed care because of the potential this system has for vast impact on patients, the profession, and one's practice.

The Officers and Regents of the American College of Dentists (1996) define managed care as "a market mechanism for distributing oral health care resources." The four essential features of managed care are identified as:

1. It is a secondary market; dental health care opportunity, not care itself, is brokered in the managed care market. In this fashion it might best be termed brokered care since future dental visits are actually bought and sold rather than oral health itself.

2. It is a four-party system; there are (1) patients, (2), dentists (together comprising the primary market), (3) brokers, and (4) purchasers (the latter two comprising the secondary market).
3. Costs and benefits are calculated in the aggregate; not on an individual basis. Plan purchasers buy a package of benefits; third parties work on an actuarial basis. Dentists cannot use conventional pre-procedure accounting to figure their return; only aggregate analysis works.
4. Some of the dental health care dollars are shifted from providing care to managing the market.

The College also identifies eight characteristics of managed dental care that seem to be emerging, which although they do not define managed care, are usually the focus of discussion:

1. Income of providers tends to be lowered
2. Income of brokers tends to rise
3. Cost to purchasers tends to be lowered
4. Risk is spread more evenly across the four parties
5. Access to care among the marginally served tends to be increased
6. There are pressures for standardizing dental care
7. Large databases on care delivery are being assembled by third parties

8. More opportunities for ethically based decisions are created for dentists

Is Managed Care Needed in Dentistry?

Many dentists argue that dentistry and medicine differ in some respects that make managed care unnecessary in dentistry. In particular, it is frequently cited that dentistry has a long tradition of focusing on preventive care and so managed care programs are not needed to encourage prevention or early diagnosis and treatment.

On the other hand, there can be many benefits of managed care organizations to their members and employers. Managed care plans use their bargaining



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power to negotiate substantial discounts with providers. This results in more value for each dollar spent on dental care. J. Michael Quinn, a representative from Delta Dental Plan of Indiana, agrees that managed care has a place in dentistry. He feels many changes in dentistry have been brought on by managed care. "More and more companies are looking at ways to decrease their costs of health care. Any time you have a corporate buyer who is looking for ways to decrease costs then you are going to have entities trying to develop plans to meet that buyer's needs" (Quinn, 1998 [per-

sonal interview]). Quinn cites surveys from Foster Higgins and Tower Perin to support his claim. The Foster Higgins results showed that dental benefits costs rose for the fourth consecutive year in 1996 for employers with 500 or more employees. It also showed that while overall health benefits costs for these employers increased just 15% in the last four years, dental benefits costs increased more the 31%. The Towers Perin survey showed that dental benefits cost increases have out-paced medical benefits cost increases during the last three years, and they predict that dental benefits costs will increase again this year.

One could argue that the problem of managed care may have been brought on by the employers or purchasers of managed care. Between 1970 and 1989, employers' expenditures for wages and salaries increased 1% while their spending for employee health benefits increase 163% (Morreim, 1996). If employers take their workers' money and make unilateral decisions about what health benefits to buy with little or no input from those whose money they are spending, they may be acting coercively. The curtailment of patients' autonomy may sometimes come more from the em-

How Does Managed Care Affect Patient Treatment and Practice?

ployer than from the managed care organization. Even under restrictive plans, patients retain considerable freedom regarding dental care because it is generally much more affordable than medical care (Morreim, 1996).

Many feel managed care assaults professionalism, turning dentists' professional services into a mere commodity. "Many managed care organizations throughout health care are attempting to standardize

care, [a practice] stemming more from obvious cost savings than from care considerations. Such guides may account to an assembly line care that ignores important differences from one patient to the next. The situation possesses a significant problem because professions are in part defined by the fact that sophisticated judgment and individuality of care are required" (Morreim, 1996, p. 45). The French, postmodern philosopher Michel Foucault takes the position that "All practice that reduces individuals to

facing the profession in the next few years will be to discover ways of thinking and talking about the delivery of care and the management of practices that combines understanding of both the individual and the group. Dental science is made stronger by this double vision—an SNA angle can only be fully interpreted by knowing the age group from which the measurement comes. The same might be true of business practices" (Chambers, 1996, p. 42).

President Clinton raised questions regarding managed care and treatment in his 1998 State of the Union Address. "A hundred and sixty million of our fellow citizens are in managed care plans. These plans save money and can improve care. But medical decisions ought to be made by medical doctors, not insurance company accountants. I urge the Congress to reach across the aisle and write into law a consumer bill of rights that says this: 'You have the right to know all your medical options, not just the cheapest. You have the right to choose the doctor you want for the care you need.' Now, traditional care or managed care, every American deserves quality care."

In response to this, Quinn says that once one joins a managed care program, a directory comes from that program. There is an economic incentive to go to a participating dentist, but freedom of choice is still there. He reassures us that the patient can see some-

A lot of dentists feel that if you are not going to pay their entire fee, then it is a bad plan.

one who participates in the plan or someone who does not and is informed that it will cost more out of pocket money for treatment by a non-participating dentist. It seems that this freedom has a price, at the expense of the patient and the dentist. Despite what patients may say about admiring and respecting their own dentists, the vast majority will only seek care in offices participating in specific dental programs.

norms or averages is inherently unethical because it robs them of their unique identity" (Chambers, 1996, p. 42).

On the flip side, patients are indeed individual, but if dentists or any other health care providers are to claim that every patient is unique that would be denying that their profession is based on science, where science after all seeks patterns and regularity in the world (Morreim, 1996). "A significant challenge

Patient's demand for dentistry is quite elastic. Dental care is viewed as a luxury item by most patients who usually seek care where they have the least out of pocket expense (Zatz, 1995). As far as decision making, Michael Quinn agrees that medical decisions should be made by medical doctors and that managed care is not trying to dictate treatment but rather make an interpretation of what is in the contract and what is not covered. "Managed care is not going to dictate treatment; that is going to be between the dentists and the patient, and that's certainly where it should be" (Quinn, 1998).

How Does Managed Care Affect the Dentist-Patient Relationship?

In a recent survey by Bramson, Noskin, & Ruesch (1998), 50.7% of dentists who participated in at least one managed care plan said managed care plans interfere with the dentist-patient relationship in their practices. Seventy-eight percent of dentists who do not participate in managed care plans also said managed care interferes with the relationship.

"The most damaging cost of third party involvement in dentistry stems from a difference of opinion about who is the customer. Dentists treat the individual patient while third parties insure cohorts of people as actuarial averages. To a carrier, the treatment for a particular patient is judged against the norms from a database. To the dentist, treatment is a function of professional judgment considering the individuality and the history of each patient and what works in each practitioner's hands. This is more serious than a few cases where care is compromised for economic reasons. It represents a clash of fundamental perspectives. Dentists do not think in terms of averages and patient populations. Insinuating the actuarial perspective of third parties into the dental office changes the nature of the profession, to the detriment of the public" (Chambers, 1995, p. 3).

In response to this, Quinn says that when you bring a third party into the

dentist-patient relationship, the relationship is going to change. He feels when you have contract limitations and contract exclusions and you have factors that are directed at fees, it is going to impose a certain impact on dental offices. The reason, Quinn says, dentists are at odds with third parties is that they see such practices are an intrusion on their practices and the insurance companies as trying to dictate treatment by determining how much dentists can charge. That is, according to Quinn, not what they are trying to do. Insurance companies are trying to interpret the contract and tell what is covered and how much is going to be paid. I think a lot of dentists feel that if you are not going to pay their entire fee, then it is a bad plan. But on the other hand, if we did not have dental insurance, many people would not be coming in for dental care.

Managed care companies feel that the third party does not hurt the dentist-patient relationship, but does change it. The majority of sources studied agree that it is vital that when a dentist considers participation in a managed care plan, that dentist must thoroughly review the pros and cons that the plan has to offer. What might be beneficial in one office may be detrimental to another. The Indiana Dental Association does not promote or denounce managed care, but does provide a contract analysis service free of charge that will send the dentist's prospective contract to the ADA's legal department to gather information so the dentist knows exactly what is being offered.

As a Dental Student, What Is My Personal Opinion About Managed Care?

My fellow classmates and I have very important decisions to make regarding our participation in managed care programs. I never considered that patient treatment would be controlled or limited by a third party. I am not so sure I am comfortable with the idea that third party contracts may benefit the whole yet penalize an individual. I understand that dentistry is

elective and similar problems can be solved by different solutions. But is it not our responsibility as a profession to regulate ourselves? I somehow feel that my professionalism and patient care are being threatened. Moreover, I do not quite see how the quality of oral health care is being improved.

Through my research, I have concluded this: I am an ethical and educated person who cares about the wellness of others. I am sacrificing a valuable period of my life and taking on enormous debt to educate and train myself to provide optimal oral health care to my future patients. I feel that under a managed care system it will be difficult to fulfill the hopes and needs of my patients, my practice, and my profession.

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How the Japanese Work

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Abstract

The Japanese do not work harder or even use different approaches so much as they aim for a different result—one that balances process and results and extends the definition of quality beyond the product itself to include cost and convenience to the customer as well. Ten methods of the Japanese *kaizen* culture of work are presented with applications and contrasts to American dentistry.

When a Japanese teacher returns student papers, the number correct is not marked. Instead the paper shows the number of “hits” (the actual word is *atari*, like the video game). An *atari* is a probability hit which reflects the wisdom of the strategy taken by the student. In contrast, American students are taught to believe that some answers are “right” and others are “wrong,” and that those who pick the right ones are somehow personally “correct”—students themselves are right or wrong. This fundamental difference of perspective is carried over into all aspects of life, including

business. Japanese aim for sound approaches; Americans aim for success.

Although there are many views of quality practiced in Japan, it has been popularized under the name *kaizen*. Roughly translated this term means the spirit or philosophy that whatever one is doing can be done better. It is less a management theory or technique than a culture or collective philosophy of work.

Balancing Process and Results

Kaizen is not an alternative strategy for beating Western manufacturing at its own game. It is a redefinition of the goal of the game.

Let's start with results. That is a characteristic Western approach. The bottom line is the ultimate test; and the faster we can get there the better. The performance of executives is measured in quarterly ROI figures. The performance of school superintendents is measured in test scores. Lawyers count billable hours. There are a lot of consultants and CE gurus willing to help dentists improve their net, and, as far as I know, none making a living promoting oral health. Perhaps nowhere is America's preoccupation with the “winner of the day” more obvious than in professional sports.

By contrast, the Japanese culture is more concerned with a balance between results and process. A focus on process builds intrinsic pride in workmanship and promotes investment in the capacity for sustained productivity. Japanese executives, and line workers as well, are still judged on the “what have you done for me lately” standard; but they are also evaluated against the criteria of “what are you preparing to do for me tomorrow.”

The balance between results and process is part of a larger web of cultural values and perspective. The Japanese time horizon is longer than it is in the West. American companies live from quarter to quarter. The stock market often withdraws support from a company based on low performance which is the result of random fluctuation in an otherwise healthy growth pattern—a practice that will limit the growth of dental management companies. A second cultural difference is the Japanese belief that a person's contribution to the group is judged by its overall impact on the group rather than by characteristics of the contribution itself. Another way of saying this is that everyone in the group feels responsible for the group's performance. Nowhere is this more the case than with



respect to Japanese managers. It would not be unusual for a Japanese manager to resign because of the poor performance of the section of the business for which he was responsible or even in the case of chronic carelessness or illegal activities of employees. A common American managerial response would be to find and vigorously punish someone else in the organizations for the shortcomings.

The Japanese education system is consistent with many of the examples in Japanese business practices that support a balance between results and process. For example, rewards are often given to students for following the correct procedures even when the results are disappointing. (This should not be confused with the occasional American practice of "grading on effort"—it is grading on following appropriate procedure.) In Japan, the class as a whole is more likely to share the sense of accomplishment or frustration of class members, and parents often feel a deep sense of responsibility. This is even taken to the extreme in the practice where a mother of a child who is ill will attend class, sit in the child's seat, and take notes to tutor her child. Lessons in Japanese classrooms tend to involve all of the senses—sight, tactile, body movement—and not just the abstract and intellectual.

The final deep cultural difference underlying Japan's balance between process and results is the view that improvement is the result of constant small changes rather than periodic large innovations. In America, "break through," "innovative," and "revolutionary" are descriptions one can be proud of and are staples in advertising. In Japan, the same terms might be viewed with suspicion. Constant, overlapping, incremental improvements are preferred by the Japanese because they are more predictable, easier to manage, involve more people within the organization, and are easier to learn from.

Quality-Cost-Delivery

In addition to balancing results and process, the *kaizen* approach to quality differs from the American version in an-

other significant fashion. The goal of *kaizen* quality is broader than the goal of its traditional Western counterpart. In Japan, continuous improvement means improving the product itself, lowering the cost of the product, and giving careful attention to its delivery. The goal of improvement efforts in Japan is Quality-Cost-Delivery (QCD) and not just the quality of the product. Americans, particularly professionals such as dentists,

are preoccupied with improving the quality of dentistry and even the amount of it, and give only secondary thought to lowering cost to patients or making it more convenient.

Cost: Japanese consider the cost of products at two points in the production process, and in two different ways. A target selling price for any new product is set in a general way when management announces its intention to introduce a

Table 1. Ten *Kaizen* Techniques for Quality.

<u>Technique</u>	<u>Example</u>
Standards	Documented, single best way to perform a task
Public management of quality	Posted control charts
<i>Warusa-kagen</i>	Early warning system for potential mishaps or malfunctions
<i>Gembutsu</i>	Work group autopsies of representative failures
Quality audit review by management	Periodic, comprehensive
Quality circles	Voluntary, natural work groups striving for continuous improvement
Suggestion system	Numerous group recommendations for demonstrated improvements
Policy deployment	Sharing of work development by all levels concerned
Total productivity	TQM applied to equipment maintenance



new product and the product is in the conceptual stages. (The term "intended selling price" is more descriptive than the traditional term, cost.) Cost is also an important consideration during the product development and the process planning phases of production. Here we are talking about cost in the traditional sense of reducing the expense of delivering a product. (This view of cost is familiar to dentists who strive to reduce overhead, usually to increase net rather than lower price.) The Japanese version of product development and process development through design of experiments pays attention to delivering a product which has superior quality characteristics. It also pays attention to delivering a product which costs less because of failures requiring warranty replacement or repair; that costs less to produce because of materials, equipment, labor; that can be produced by holding less inventory, through shorter production lines, with less down time, with lower space requirements, and with less lead time.

Timing: The QCD, *kaizen* definition of quality also pays attention to the time dimension of quality. Shorter product development cycles achieved through con-

... the spirit or philosophy that whatever one is doing can be done better.

tinuous overlapping small improvements add to quality. Receiving materials from suppliers as close as possible to the time when they are needed and delivering goods to customers in the quantities and at the time the customer finds most convenient also contribute to quality. Time is an essential ingredient in the quality of responsiveness to customer demands. But this is not production time in the "time is money sense;" it is customer wait time. The Japanese would be ashamed of being booked months in advance.

Kaizen Techniques

Although *kaizen* is a general approach which emphasizes habits of process and

Table 2. The Five Ss.

<u>S</u>	<u>Example</u>
Sort	Keep only the essentials
Straighten	Keep the important things close at hand
Scrub	Keep the work area clean
Systematize	Maintain a professional personal appearance
Standardize	Make the other Ss a habit

a broad prospective, there are specific techniques that have developed out of this tradition and out of Japanese culture. These techniques are not practiced by every Japanese company and only few firms use most or all of them.

Standards: Every process should have standards. This includes a description of the anticipated result in terms of target and tolerances. But standards in Japan go farther and more typically mean standardized operating procedures. In other words,

puter guided marking pens which outline the pattern for future cutting. There is a sign at the base of this machine which reads "This process is in place to comply with ISO-9000 standards (International Standards Organization certification requirements). All Waterford craftsmen cut their patterns individually from memory."

In *kaizen*, however, standards are not regarded as restrictive or fixed. They are the structure for continuous improvement. It is expected that standards will be reviewed regularly and changed every six months to two years, depending on the process. Standards have the following advantages: (a) They represent the best, easiest, and safest way to perform any procedure. (b) They preserve and codify valuable know-how. (c) They provide a focus for measurement, a necessary component of improvement. (d) They are built on and help clarify cause and effect relationships within processes. (e) They are the basis for negotiating maintenance and improvement. (f) They are the basis for developing training materials and for verifying that training has been effective. (g) They are a necessary part of process audits. (h) They are a means for passing organizational knowledge from one employee to another.

Public Management of Quality: In Japan it is equally bad form to produce a dud or disregard established procedures. It would be unlikely to hear a worker say

standards apply to both the result and the process. If dentistry had standards they would go beyond parameters and even beyond so-called "evidence-based dentistry." Accreditation for dental education programs are based in standards.

There is some resistance to the notion of standards in the West. Our tradition of individualism and creativity blunt both our appetite for developing standards and the conscientiousness with which they are executed. In the Waterford crystal factory in southern Ireland, master craftsmen hand blow glass stemware and then cut deep patterns in it, giving each wine glass its distinctive beauty. In the factory, the uncut goblets are placed in a device with com-



"Let me do it my own way as long as I'm not causing any problems." This view makes it publicly possible to manage quality in a way that would be difficult in the West. Not only are standard operating procedures likely to exist for most operations, they are publicly displayed so that managers and co-workers can see immediately whether an employee is in compliance with the process. An extreme form of public management of quality is *jidohka*. *Jidohka* is the automatic monitoring of processes with a built-in shutdown provision if the process exceeds control limits. This might include a device for measuring the output of a process or a temperature gauge on machinery that is sensitive to heat. It is not a warning mechanism, as for example an oil pressure light might be in a car; it is an automatic shutdown, often with no override possibility.

Western employees might take offense at making quality a public issue. Dentists certainly do. This is not the case in Japan where performance is viewed more as a group than individual process and where employees are not held accountable for defects in the process. There is another reason why public management of quality is important—it promotes prevention.

Warusa-Kagen: In the United States there is a cynicism about managers or consultants calling problems "opportunities." In Japan, this is rather serious busi-

ness. Employees are encouraged to identify and bring forward examples of potential problems. There is no automatic assumption that the employee is responsible for substandard performance. It may be a useful insight into a change in the materials being shipped by suppliers. There may be a change in the market or consumer preferences. To get the full benefit from *warusa-kagen*, managers must not only avoid blaming employees who point out problems, they must also investigate them thoroughly. This includes looking for further examples, categorizing the circumstances, looking for possible causes, identifying the significance of possible failures, and taking corrective action where appropriate. An organization that encourages employees to bring forward small issues which have the potential for effecting the future of the organization is in a much better position than one that forces employees to hide what management regards as mistakes. The counterpart of an OSHA visit in Japan would be regarded as an opportunity for improving health and safety.

Gembutsu: Some might say that the Japanese have a preoccupation with analyzing failures. The Japanese word for failure is closely related to the word for treasure. An example of this might be *gembutsu*. This is the practice of exploring in detail a concrete example of a process failure. It could be a customer complaint

searching for patterns or explanations in hopes of preventing future occurrences. In some organizations, such meetings are regularly scheduled occurrences. If the proper attitude of avoiding blame could be established, the morning dental office huddle could include analysis of *gembutsu*.

A similar practice is the habit of "asking why five times." For example, a den-

Standards apply to both the result and the process.

tist might ask why the patient wrote a complaining letter. The first answer is "Because her inquiry about insurance was poorly handled." The second why: "Why was the inquiry muffed?" "Because we confused one patient with another" is an accurate answer, but still not very useful. A third why might be "Why did we confuse this Mrs. Andrapoupolos with the other Mrs. Andrapoupolos?" "Because the computer field for name only has a limited number of charters, there was not enough room to put in a differentiating first name." This situation requires yet another why question. Eventually, the dentist will understand the problem in sufficient detail to take corrective action. The purpose of repeating the why question is to move from an explanation to a cause that can be corrected.

Asking why is different in Japan than in the United States. Consider the "one-why" approach of the following dentist. He calls in his receptionist and asks "Why are there so many typos in this letter?" The answer is "I guess I wasn't as careful as I should have been." The dentist dismisses the receptionist with the admonition "Well, be more careful in the future." That is not a conversation intended to discover the causes of the problem and prevent their reoccurrence. It is a conversation on the receptionist's part calculated to diffuse or avoid blame and on the dentist's part

There is no automatic assumption that the employee is responsible for substandard performance.

ness. But the "opportunities" are not system failures and crises. The valuable problems are those that are just emerging. The term *warusa-kagen* might be translated "useful warning." Unusual patterns that do not meet the threshold for declaring a system out of control, unusual cases, and unanticipated customer reaction might all be *warusa-kagen*.

or an order that was lost, but more typically it is the physical product itself—an electric shaver that does not function properly or a bushing that does not meet tolerances. The FFA investigation of airline crashes would be such an example on a large scale. *Gembutsu* meetings include those individuals involved in the process analyzing the evidence of failure,



to role play the expectation of "having looked into the matter."

Quality Audit: The practices of setting standards, making problems visible, identifying and solving problems early, and seeking causes and corrections rather than blame and justification are all combined and formalized in the quality audit. This is an internal process initiated at the top levels within each organization. The audit is conducted periodically, six months to a year is a normal practice, by the organization's president or other high-ranking officers. It is intended to be comprehensive and constructive.

Quality Circles: Quality circles are voluntary small groups of employees who meet regularly to improve the process they are involved with. The movement started in the 1950s as a means of educating front line workers with information necessary for quality improvement. There are hundreds of thousands of such groups in Japan and they are supported by a national organization. This is one of the best known aspects of Japanese TQM in the Western World.

The purpose of quality circles is to improve pride of workmanship and predictability (control) over work processes at the local level. This contributes directly to workers' satisfaction and indirectly to quality improvement. In this sense, quality circles are not an essential part of TQM and they receive modest but not extensive discussion in the Japanese TQM literature. They are certainly not a part of the overall quality system operated by management for the organization. Relationships between management and unions in Japan tend to be more harmonious than in the West because Japanese workers are more likely to be regarded as sources of revenue and productivity than as cost. Japanese unions take somewhat more interest than their Western counterparts do in promoting quality improvements. There are even quality circles for managers, known as JK groups.

Suggestion System: Another example of involving employees in quality improve-

ment is the suggestion system. The notion started around the Second World War in the United States with the suggestion box and a cash reward for employees if the organization adopted the suggestion and it proves beneficial. While the boxes still exist in many American companies, no one bothers even to collect the suggestions in many cases. Employees stop offering ideas when their first attempts are ignored. Good ideas, the ones that lead to monetary prizes, are often contentious since several people may have come up with similar notions. American workers make few suggestions.

The system is different in Japan. Under the *kaizen* model, suggestions are made by groups rather than individuals, they may or may not receive cash prizes, they almost always receive thorough management evaluation and response,

of their job to explore small, constant improvements. Of course anyone familiar with the American situation realizes that workers also make numerous innovations. The real difference is that Americans do so privately, thus denying our co-workers and the organization as a whole the benefit of learning from each other. Dentists are notorious for selling their "successes" to their colleagues in CE courses.

Policy Deployment: The basic structure of deciding what should be done and placing it into practice in America is top down and based on a structure developed around 1910 by a time-and-motion expert Frederick Taylor. Taylor's movement was called Scientific Management and its basic tenant was that managers would study how work is best done and then tell employees how to do it. The employees' job

The counterpart of an OSHA visit in Japan would be regarded as an opportunity for improving health and safety.

and they are voluminous. The average Japanese worker makes almost twenty suggestions per year. In one organization, a group produced an average of more than sixty suggestions per day. If that sounds like a lot of suggestions consider what is required in most Japanese companies in order to submit a suggestion. Suggestions cannot be unsupported ideas out of the blue for hoped-for results. It is expected that suggestions will come from groups that have gathered data, in some cases performed experiments, and in all cases offer improved ways of doing something. In many cases, suggestions are reports of quality circles that have identified potential problems, explored alternatives, and implemented changes. The American notion of being rewarded for giving somebody a "hot tip" must seem strange to our Japanese counterparts who consider it to be part

is to do what they are told as faithfully as possible. Over fifty years later, this is still a common view in dentistry. The Human Relations Movement of the thirties running through the 1970s increased management's sensitivity to workers, and consumerism—a growing phenomenon over the past thirty years—has made management sensitive to the needs of customers. The basic Western model remains, however, that managers will decide what products and services to deliver and how the work is to be done. The market, not the workers or the customers, will vindicate the good manager's decisions—or otherwise. Enlightened managers, not necessarily the same as effective ones, will make these decisions after consultation with worker and customers.

The same pattern is evident in Japan, but the boundaries between management on one hand and workers and customers



on the other is less distinct. Workers have a greater say in what is to be done and how. Customers are more involved in product choice and product design, and may even be invited regularly into the organization to consult on product design and manufacture.

Total Productivity Maintenance. The *kaizen* definition of quality extends considerably beyond the quality of results. We have already seen that the process is an integral part of quality and that it includes cost and delivery as well. There is even a strong thread of the quality movement that takes as its primary focus

shitsuce), each beginning with the letter S. Their approximate English translations are as follows.

Sort: The first S requires that workers divide all material, equipment, paper, etc. in their work area into two categories. Essential items are those that are used regularly, often with a defined limit of at least once every thirty days. All other items are marked as unessential, usually with a red tag. All unessential items are either destroyed or sorted and moved to storage areas.

Straighten: The second S involves strategic placement of work materials, in

That is what janitorial services are for. Health care professionals and some others are a clear exception to this rule. In *kaizen*, cleanliness is a personal responsibility and extends to include verifying that all equipment is in proper functioning order.

Systematize: The fourth S has been translated as systematization, but that is an inadequate representation of the concept of *seiketsu*. Literally it refers to extending the five Ss to one's own person and behavior. It is better translated as professionalism of appearance and mannerisms. It includes personal hygiene, wearing appropriate clothes, including protective gear where appropriate, and presenting a professional appearance.

Standardization: There is also some problem in translating the fifth S. Although a common translation is standardization, the notion here is that the preceding four Ss and the *kaizen* philosophy of quality generally should become internalized as a daily habit.

Lest professionals consider the Five Ss to apply only to Oriental shop workers, consider the following: The average American desk has thirty-seven hours worth of work piled on top of it. The average American desk driver spends ninety minutes each day working on this "inventory in progress" and forty-five minutes looking for the thing on the desk. What does that say about quality? The Five Ss are typically more evident in the operatories or labs in a dental office than they are at the front desk or in the dentist's personal office.

The Japanese word for failure is closely related to the word for treasure.

maintenance and improvement of productive capacity. This is known as total productivity maintenance (TPM) and it is concerned with issues of machine uptime, safety, and capacity, as well as productive characteristics of the workforce such as levels of training, education, and morale. In Japan, there is a national prize similar in prestige to the Deming award for quality, that is given annually for Total Productivity Maintenance.

The Five Ss: The part of *kaizen* quality that comes closest to representing a habit or culture of continuous improvement is the Five Ss. It is also an approach that most dentists practice naturally. The five Ss stand for five Japanese words (*seiri*, *seiton*, *seiso*, *seiketsu*, and

the sense of organizing by use. Items that are used frequently or that are important (for emergency use, for example) are placed in convenient locations; less frequently used items are in less accessible locations. It is also important to place limits on the numbers of items. It is not uncommon in America to encounter a salesman's office with weekly sales reports (that are important) going back eight years (which are not important) or to have a supply of paper clips to last until retirement or bottles of whiteout but no typewriter.

Scrub: The third S is for being neat and clean. Many Americans would not consider the cleanliness of their work space to be a personal responsibility.



Recommended Reading

Dore, R. P., & Sako, M. (1998). *How the Japanese learn to work*. New York, NY: Routledge.

Thorough examination of vocational education and training in all parts of the Japanese educational system, from primary education to in-house training within companies and on the shop floor. Much training is carried out informally by colleagues, the motivation being pride in doing the job well rather than a means to personal advancement.

Hess, R. D., & Azuma, H. (1991). Cultural support for schooling: contrasts between Japan and the United States, *Educational Researcher*, 20 (9), 2-8, 12.

Systematic contrasts between the two educational systems; examples and evidence of the strengths and weaknesses of the Japanese approach.

Imai, M. (1986). *Kaisen: The key to Japan's competitive success*. New York, NY: McGraw-Hill.

Best general introduction to Japanese business practices.

* Imai, Masaaki (1997). *Gemba Kaizen: A Commonsense, Low-Cost Approach to Management*. New York, NY: McGraw-Hill. ISBN 0-07-031446-2; 354 pages; about \$25.

Kaizen is the spirit that whatever you are doing could be done better. *Gemba* is the place where the action is—"on location" (the operatory in a private office, the clinic in a dental school). The principles are (a) housekeeping (self-discipline that shows in the orderliness of the workplace), (b) elimination of waste—anything that does not contribute to value added, (c) standardization—both in the sense of a patterned way of responding and in the sense of meeting standards. A glossary is provided at the beginning which defines frequently used terms that are foreign to Western readers.

* Ishikawa, Kaoru (1985). *What is Total Quality Control? The Japanese Way*. Lu, David J. (Trans). Englewood Cliffs, NJ: Prentice-Hall. ISBN 0-13-952441-X; 215 pages; about \$18.

This is a summary of the quality movement through Japanese eyes—it isn't the same as the American view; not even when American authors say they are describing the Japanese way. The style is sparse and direct, sometimes being quite blunt about faults of managers and sometimes a little opinionated. Professor Ishikawa is president of Musashi Institute of Technology in Tokyo and has been involved in the quality movement since the late '40s.

Lebra, T. S. (1976). *Japanese patterns of behavior*. Honolulu, HI: The University Press of Hawaii.

Rather academic treatment of cultural and behavioral norms of Japanese and Japanese Americans.

Nonaka, Ikujiro, and Takeuchi, Hirotaka (1995). *The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation*. New York, NY: Oxford University Press. ISBN 0-19-509269-4; 284 pages; about \$25.

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

* Taguchi, Genichi (1993). *Taguchi on Robust Technology Development: Bringing Quality Engineering Upstream*. S-C Tsai (Trans.) New York, NY: ASME Press. ISBN 0-7918-0028-8; 136 pages, \$?.

A translation of a rather technical work that urges attention to quality at the design stage and shows how to define a loss function for quality of the product in use and how to set appropriate tolerances. A mathematical background is essential. Questions and answers (as after a class) and quantitative exercises at the end of each chapter. The exercises generally require calculus and engineering knowledge and appear to require several hours to complete. Answers are given at the end of the book.

Editor's Note

Summaries are available for the three recommended readings preceded by an asterisk (*). Each is about four pages long and conveys both the tone and content of the book through extensive quotations. These summaries are designed for busy readers who want the essence of these references in fifteen minutes rather than five hours. Summaries are available from the ACD Executive Office in Gaithersburg. A donation to the ACD Foundation of \$15 is suggested for the set of summaries on the Japanese approach to business; a donation of \$50 would bring you summaries of all the 1998 leadership topics.

The Manuscript Referee Process

Ten unsolicited manuscripts were considered for possible publication in the *Journal of the American College of Dentists* during 1998. Two were returned without review because of format. Of the eight sent for peer review, six (75%) were accepted for publication, some pending revision.

Forty reviews were received, 5.0 per manuscript. Seventy-eight percent of the reviews that expressed a clear view were consistent with the final decision regarding publication. Cramer's V statistic, a measure of consistency of ratings was .613. A V-value of 0.0 represents random agreement and 1.0 represents perfect concordance. There is no way of comparing the consistency of the reviews for this journal with agreement among other reviewers because it is not customary for others to report these statistics. The College feels that authors are entitled to know the consistency of the review process. The Editor also follows the practice of sharing all reviews among the reviewers as a means of improving calibration.

The Editor is aware of one reprint of an article (Direct Reimbursement), of one Agency department (CheckUp), and one Leadership department (Meetings) reprinted from the journal during the year and believes there were others.

The College thanks the following professionals for their contribution to the dental literature as reviewers for the *Journal of the American College of Dentists* during 1998:

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