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

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

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

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

D. To encourage, stimulate and promote research;

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

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

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

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

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

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FROM THE EDITOR

The Verticalization of Dentistry

bout ten years ago, some serious seeds of dissension were sewed in the dental profession. This began as a quiet activity, economically sound, and an extension of previously successful practices. But now it may be getting out of hand, and it is time to look critically at what the profession is doing to itself. I am talking about dentists working for other dentists.

Associates and independent contractors accounted for 10% of all dentists in 1992, the last year for which data from the ADA's Survey of Dental Practice have been published. In the 1960s, this proportion was approximately 2%. Traditionally, the profession has been built on an ethic of individualism and self-determined responsibility that is at odds with working as an employee. The skills and values necessary to operate a small business providing direct care to patients is different from the mindset of an employer. The profession is increasingly fractionated into three groups - employees, employers, and independents - which creates inherent tensions. There is a danger organized dentistry will only speak in

the future for a dwindling number of independent practitioners.

Vertical restructuring is happening throughout America's service industries. It is also obvious in medicine, law, and accounting with increasing specialization and use of paraprofessionals. Vertical restructuring is based on sound economic principles. Thus, it is useful to lay a brief foundation in microeconomics in order to understand why more dentists are working for other dentists.

Between the years of 1958 and 1992, the real income of dentists adjusted for inflation rose 20%. Besides celebrating a significant accomplishment, it is necessary to understand the factors contributing to the phenomenal growth. Generally, there are four ways a practice or a profession can produce real economic increases. Two of these are sustainable over a long period and two are situational.

Let's consider first the alternative of cutting costs. This strategy only makes sense if one is already paying too much for supplies or for salaries. By definition, there are savings to be realized from trimming surpluses. But what if current expenses are justified based on the level or quality delivered? Under these circumstances, cost-cutting will also compromise patient care and damage staff morale. Cost-cutting is only an effective way of producing economic gain if surpluses exist.

A second alternative to consider is increasing production. All practice management courses teach students break-even analysis. The costs of a dental practice include fixed items. such as office rental and staff, and variable items, such as laboratory fees, related to the volume of business. Revenues for the practice can be expressed as the average fee for each visit multiplied by the number of visits. I believe the National Boards now require students to be competent in calculating how many visits are needed at a certain revenue to equal the total of fixed costs plus the variable costs.

But the economists have told us a half truth. The break-even calculations are based on an assumption that all the components are linear — an office is equally productive on the fifth patient seen during the day as it is on the fiftieth. However, increasing volume puts pressures on resources, particularly the fixed resources of staff and space. Quality suffers when volume exceeds capacity and productivity The possibility of growth is dependent on a continuous supply of new technology, better trained professionals, and increasing understanding of patient needs.

actually declines. Therefore, increased volume is only effective as long as there is unused capacity. This is a rule the proponents of capitation programs have been frank to admit. Failure to understand the effect of volume on costs leads to ridiculous situations. For example, I recently heard a dentist describe a managed care program as follows: "We lose a few dollars on each of the procedures we perform, but they say we can make it up on volume."

These situational attempts to increase economic productivity reducing costs and increasing volume — are known technically as *hygiene factors*. Deficiencies, such as overspending or under-utilized capacity, damage an organization. But once equilibrium is reached, further costcutting or volume-building has no effect or may even be detrimental.

Comparing ADA data for the years 1958 and 1992, it is apparent that the growth in the profession has not come from either of these hygiene factors. The pattern of costs in a dental practice did not change appreciably during this period, and the proportion of net income going to overhead actually rose from 56% to 67%. The number of patients seen in the average dental practice in 1958 was 3,078; thirty-three years later, the average number of patient visits was 2,971.

There are two other ways to increase economic strength, and these can be labeled growth factors. These are not limited to growth inherent in dental practices themselves. The first growth factor is to add value to the product or service. In the dentistry of mid-1900, patients received quality functional restorations for compromised natural dentition. Today, they receive the same value plus improved aesthetics, greater biological compatibility, and more comfort and professional attention. They are willing to pay more for dentistry because they are receiving more.

The second sustainable growth factor is leveraging. This consists of maintaining a fixed quality, but delegating performance to less expensive individuals or even to outside services or to technology. For example, a beginning dentist may establish the insurance billing procedure and perform a number of billings to prove the validity of the system. In a more mature practice, the same function is performed at a lower cost through trained staff. In the most sophisticated situations, the same or perhaps higher levels of quality are achieved through computerization. Hygienists performing prophylaxis, assistants exposing radiographs or placing orthodontic spacers, and technicians doing laboratory work are all examples of effective leveraging.

Adding real value and leveraging are growth factors because they have the potential for nearly unlimited expansion because they depend on factors outside of dentistry. The possibility of growth is dependent on a continuous supply of new technology, better trained professionals, and increasing understanding of patient needs. Dental education, dental research, relations with the dental industries, and management and marketing expertise have been driving forces in the increased productivity of the dental profession. They will continue to represent its future.

What is the picture with regard to leveraging in dental practice? In 1958, the typical dental office employed .85 individuals per dentist. Most of these were assistants, with some technicians and a few hygienists. By 1991, the number of auxiliaries had increased

Editorial

four-fold to 3.5. The number of assistants doubled and the number of hygienists increased seven or eight times. Most of the increase in auxiliaries came during the early part of this period; with the number of assistants and hygienists remaining virtually constant since the '80s. The number of technicians and the amount of time dentists spend doing their own laboratory work decreased, reflecting the significant shift in dental care from restorative and prosthetic procedures to a fuller range of services.

There is clear evidence that overall productivity and net income are associated with leveraging. ADA data from the 1950s showed that dentists with two employees produced over twice as much as those with no employees; and dentists with four employees produced almost four times as much as those dentists working alone. Also during those years, a dentist with one chair and one assistant had a net income one and a half times that of a dentist working with one chair and no assistant. In 1971, the ADA reported that dentists with no auxiliary help earned 67% of the average income for general practitioners. Those with one auxiliary earned 97%, two auxiliaries 128%; and three auxiliaries 142% of the average net income of dental practitioners. Another way of reviewing this matter shows the same result: dental specialists, compared to general practitioners, have always had a significantly larger number of employees, higher productivity, and higher net incomes.

Throughout the period between 1958 and 1991, the number of hours dentists spend in their offices decreased by about 25% from 47.3 hours per week to 37.3. However, the hours at chairside delivering care has remained constant at approximately 33 or 34 hours per week, with about a 5% decrease during the "business crisis" in the late '80s.

Something else very significant happened during the 1980s. The proportion of dentists working as associates or as independent contractors began to rise dramatically. In 1958, 85% of dentists were solo practitioners and under 2% were either associates or independent contractors. By 1993, the number of solo practitioners had fallen off by approximately 15%; 5.5% of general dentists were associating and 3.9% of general dentists were indepen-

The burden of leveraged economic growth in dentistry has fallen primarily to younger dentists.

dent contractors. This represented a 500% increase in the proportion of dentists working for other dentists. Approximately two-thirds of this increase in employed dentists occurred since the mid-'80s. The number of employed dentists per employer dentist in 1990 was roughly equivalent to the number of employed hygienists per dentist in 1960.

Although there may be other plausible explanations, it is quite tempting to believe the increase in employed dentists is a function of the leveraging principle for developing economic growth that has been successfully employed by dentists over the past three or four decades. A saturation point seems to have been reached in terms of leveraging through auxiliary personnel. The dental practice added a new layer to the organizational structure — owner dentists, worker dentists, and auxiliary personnel, with the latter further subdivided into trained allied professionals and general business support personnel. Dental practice is becoming more vertical.

Although it is obvious that verticalization through leveraging to auxiliaries and employed dentists is economically beneficial for owner dentists, it is not obvious that it is beneficial for the dentists who work for other dentists or for the profession as a whole. In 1958, associates and salaried dentists earned a net income equal to approximately 75% of the net income of general practitioners. In recent years, as the proportion of dentists working under these conditions has increased, their net income has fallen to about 65% of general practice net incomes.

The burden of leveraged economic growth in dentistry has fallen primarily to younger dentists. In 1958, the maximum earning potential for dentists occured between thirty-five and thirtynine years of age. Subsequently, the age of peak earning potential gradually fell and is now forty-five to forty-nine years. The 1993 ADA Survey of Dental School Graduates creates an impression that full entry into dental practice is being slowed for recent graduates. Only 67% of graduates are in private practice one year after graduation. Approximately a quarter are in specialty training or graduate general dentistry programs. Six percent are not engaged in dentistry at all, either waiting for state licensure results or seeking a practice opportunity. The proportion of women in this category is over twice that of men.

Among the two-thirds of recent graduates who are engaged in private practice, only 28% are equity owners in the practices where they work. Thirty-eight percent are associating, 18% are salaried, and 15% are independent contractors. The average debt in this group is \$77,000, with \$55,000 of this being educational debt. Consequently, one in five of the recent graduates who work full time in dental practice have a secondary job, 10% of these being outside dentistry.

This issue of the Journal is devoted to the theme of postgraduate general dentistry. Some cynics have observed that there is no need to increase the number of positions in GPR or AEGD programs because all graduates who want further supervised experience have an opportunity through associateships and salaried positions. The obvious advantage of formal postgraduate general dentistry programs over the informal ones is a standardization of content and supervised quality of the learning through accreditation. For the present, however, it remains the case that well over half of dental graduates complete their education in apprenticeship programs with owner dentists and in clinics that are being leveraged.

Organized dentistry is sensitive to the dilemma that the profession is becoming younger with larger proportions of women and minorities at the same time that economic power is concentrated in the offices of older dentists. The tensions this disparity creates have the potential for driving younger professionals away from organized dentistry and stigmatizing owner dentists who have carried leveraging beyond an "acceptable" level. For example, in California it is estimated by those watching the managed care situation that a greater proportion of owners of capitation programs have DDS or DMD after their names, as compared to non-dentist owners.

Within organized dentistry, the economics of verticalization will create debate over standards of care, the ethical principle of putting patients first, and access to professional resources. The voices expressing opinions on these issues will grow in number and intensity, and a major leadership challenge will be to retain unity in the profession.

An advisory committee to the ADA Board of Trustees released this year a draft report, *The Dental Team of 2020*. The report suggests a new category of personnel — "dental health practitioner" — who would work under conditions even more remote than general supervision. Although not conceived by the committee this way, many of these new auxiliaries may be dentists. In light of this growing trend, a new study might be commissioned, but it had better be titled *The Dental Team of 2002*.

The image of a solo practitioner, supported by a small number of auxiliaries, providing care directly to a stable family of patients is still the modal picture of dentistry in the United States. But it is not the only one and it is beginning to fade gradually from focus. Perhaps the American College of Dentists has the vision and resources to draw attention to the seeds of dissension sewn through verticalizing dentistry created by a growing group of owner dentists. The Montana Section of the College has a program where every new dentist in the state is visited early in his or her practice by a member of the College. This is only one example of how the College can preserve the integrity of dentistry.

The future of the profession does not lie in defending the strengths of its established members, but passing on this heritage to the rising members of the profession. Perhaps that is an appropriate focus for the talents of the College.

This W amoon

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

Letters



Letters to the Editor

Dear Dr. Bluitt:

Thank you for presenting the outstanding program on Information Technology. It provided provocative speakers who stimulated good discussion and thinking on this topic.

I challenge the College and its leadership to facilitate the development of the national agenda on information technology for the profession. The College is in an excellent position, having minimal self-interest, to bring a variety of groups together to develop a blueprint for the future. For example, we educators have our agenda for information technology but this should be shared with other associations, particularly with the practicing community. We need to look at issues from their vantage point.

Sincerely,

N.Williams, DMD, MBA Associate Dean for Educational Programs Secretary, Kentucky Section of the American College of Dentists

Dear Sir:

I believe I found the gold standard for irony when I read the comments that followed the article "The Earning Potential of Professionals" in the Spring 1995 issue of our journal. The article I refer to includes data from the New England Journal of Medicine which indicate that dentists work 20 hours per week less and have a considerably higher annual hourly cash flow than our colleagues in primary care medicine. We do so with generally far less, intensive postdoctoral training. I was horrified when I came to the statement by Dr. Chambers in his commentary on this data that "Proposals to mandate a fifth year of dental school or required year of postdoctoral general dentistry training must be evaluated carefully with regard to their financial impact; their most likely consequence could be to depress the curve of expected earnings for dentists toward the same level that exists for primary care medicine."

Those of us who are involved with general practice residencies are acutely aware of the inadequacies in our students' predoctoral training, much of which cannot be reconciled without a mandatory year of hospital-based postdoctoral training. Medical educators realized several decades ago that they were unable to train a physician in four years of medical school and went to a mandatory fifth year for medical licensure. This obvious need on the part of our profession has been slow to take root in spite of the fact that no dental school has or ever could turn out a finished product in four years. Therefore, to suggest that we should be concerned about adding a fifth year of training because our incomes may become depressed to that of primary care physicians is absurd, and it rejects the clear message of the IOM report that we not only need to improve our predoctoral programs, but that we need to give serious consideration to a mandatory fifth year of training. For years dental students have voted on this issue with their feet, as evidenced by the ever increasing popularity of postdoctoral general dentistry programs, such that places do not exist for all those who desire this training.

When are we going to grow beyond this selfish and self destructive yard stick of personal income for generating our opinions on the critical and difficult decisions our profession must make if it is to survive the ongoing changes in our healthcare system? I believe that the American College of Dentists serves its membership and our profession best by throwing its full weight of support behind any efforts to improve the training of the next generation of dentists.

Sincerely,

P.B. Illa

Peter B. Lockhart, DDS Chairman Department of Dentistry Carolinas Medical Center Charlotte, NC

Dear Dr. Keramidas:

I would like to express my personal appreciation to you and the other Regents for putting together the recent Symposium on Information Technology. The speakers were superb, the presentations were delivered with a minimum of techno-speak, and I firmly believe that everyone came away with a much better understanding of the prevailing issues.

As a member of the College, it was particularly gratifying for me to watch the leadership come to realize, and articulate, just how important technology is to the assurance of quality care and to the future of the profession in an ever changing economic environment. I hope that the small success you have had this year will propel you to larger successes in this domain next year.

Sincerely yours,

the lise

on Eisner, DDS, PhD School of Dental Medicine State University of New York at Buffalo

Dear Dave,

Congratulations on the recent edition of the Journal which featured Managed Care. It is outstanding as it presents the best overview on "Managed Care" I have seen to date. I am keeping a copy of it on my desk for ready reference, and I have already referred to it on several occasions when members have called the National Office of the American Society of Dentistry for Children with their questions and concerns about this important issue.

Keep up the good work. The College has a journal of which we can be justly proud.

Sincerely,

Morman H. Olsen Norman H. Olsen

Executive Director American Society of Dentistry for Children

PGY1: What Is It and Why Is It Important?

Allan J. Formicola, DDS, FACD Spencer W. Redding, DDS, MEd, FACD

Abstract

The interest in a year of additional training for the practice of dentistry has grown over the past fifteen years. Debates at national conferences and careful study by committees of professional organizations led to the recommendation that over the next five to ten year period the profession should move toward creating a postgraduate experience for each graduate prior to independent practice. While study of this issue will undoubtedly continue, it behooves us to proceed with the process of expanding the number of postgraduate positions, first, to meet the demand by graduating students who are voluntarily selecting a year of additional training, and later, so we are at a position to fully consider such a year as mandatory for independent practice. If we use the next five to ten years productively, we can create an environment where the public and the graduates will benefit from this additional year of training.

rowth in scientific and technical knowledge over the past twenty years fueled many clinical advances in the field of dentistry. Over the same period of time, changes in practice environments and in the public's expectations of health professionals made the practice of dentistry more complicated. Graduates today are expected to have more knowledge of broader subject areas than graduates of previous generations. They are entering into a practice arena far more complex than their predecessors. Dental education has attempted to cope with the knowledge explosion and new expectations of its graduates by increasing the total number of curriculum hours and placing greater emphasis on clinical subject matter.¹

However, record numbers of graduates today wish to have a year of postgraduate education. This year will allow them to assimilate the years of preprofessional and professional education; to build upon the initial competency in clinical skills gained in dental school; and to better prepare for entering into independent practice. The first postgraduate year — PGY1 — is the term used to describe a formal first year of accredited education after graduation from professional school. It also is the term used by hospitals to identify all first-year residents, whether they are enrolled in specialty training or in primary care residencies. PGY1 is similarly used in the dental literature and throughout this paper.

The movement toward a postgraduate year for dental graduates has grown slowly since the late 1970s. The immediate plans of senior students² reflect this trend, as the percent of students planning on pursuing advanced educa-



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tion grew from approximately 17% of seniors in 1979 to 37% in 1993. When one considers that another 42% of seniors plan to immediately take positions as an employee (29.4%) or in a partnership (12.1%), few graduates immediately practice independently the year after completing their formal professional education. The percent of seniors planning to enter solo practice upon graduation dropped from 16% in 1981 to 7% in 1993. Given that in 1993 the average overall cumulative debt for college and dental school was almost were positions for fewer than 40% of the graduates. This change reflects two trends: 1) the decreased numbers of graduates — from 5,756 in 1983 to 3,778 in 1993; and 2) a growth in the total number of postgraduate dentistry positions. The growth in postgraduate positions has been in general dentistry where the number of slots grew from 969 in 1981 to 1,224 in 1993. The number of first-year specialty positions remained stable at about 1,200 over the same time period. In 1993, 56% of the approximately 2,400 total first-year



\$64,000,² it is not surprising that new graduates need a year to carefully consider future plans.

The 1990s: A Growing Trend Takes Hold

In the 1990s there are more PGY1 positions available for a greater percentage of the graduates than ever before.³ During the 1980s, first year enrollment in postdoctoral programs grew significantly. Today, there are postdoctoral positions potentially available for 64% of the graduates, while in 1983 there postgraduate positions were filled by current graduates, while the remaining 44% were drawn from graduates of earlier classes of schools in the U.S. and abroad.

The growth in the numbers of postdoctoral positions in general dentistry occurred only after a strenuous effort by institutions to begin new programs and expand existing ones. Grant support from the federal government assisted dental schools and hospitals in establishing or expanding programs. Stimulated in part from an extensive review of the dental curriculum⁴ in 1976 and of graduate education⁵ in 1980, schools were advised to "...expand... (the) scope (of education) to provide a broader range of services as a general practitioner" and the profession was advised to consider the addition of a general dentistry postdoctoral year for all graduates in order to cope with the burgeoning knowledge base.

The latter recommendation recently was refined in the Institute of Medicine (IOM) report⁶ which recommended postdoctoral education in general dentistry or a specialty program be available for every dental graduate within the next five to ten years. The rationale for this recommendation is interesting and reflects similar concerns recognized in the 1980 study on graduate education and the 1983 future of dentistry report.7 According to the IOM report, "A year of postgraduate or advanced education in general dentistry would allow students to gain speed and confidence in procedures, broaden their patient management skills to cover more complex problems, and mature in the nontechnical aspects of patient care." The IOM report also pointed out that reform to the undergraduate curriculum still requires restructuring and pruning of course content and a postgraduate year "should not be seen as a way of avoiding such reform." The report recognized the converse too, i.e., predoctoral curriculum change is not a substitute for a postgraduate year. A supervised and accredited postgraduate year rounds out and refines students' predoctoral work. The recent IOM report once again reinforces the emphasis placed on expanding postgraduate opportunities expressed by the American Association of Dental Schools,8 the Academy of General Dentistry,9 and the Council on Dental Education of the American Dental Association.¹⁰

What Should PGY1 Include?

The content of a first postgraduate year has been variously interpreted. One argument that has been advanced is all graduates should spend some time, presumably PGY1, refining general dentistry skills. This perspective is based on the philosophy that advanced general dentistry skills are equally important for individuals who will go into general and specialty practice. While this idea is attractive, its impracticality is apparent in the fact that the United States has failed to reach the goal of 3,800 general dentistry positions, or one for each of today's graduates. Evidence of this failure is that only 300 new postdoctoral positions in general dentistry have been added nationally over the past fifteen years, despite strenuous efforts. As noted above, there are only 1,200 general dentistry positions available nationally today for 3,800 graduates. Further, graduates who enter into specialty training directly are successful. When considering the goal for the first postgraduate year of formal training after dental school in broadest terms, however, it is obvious that either specialty or general dentistry programs can satisfy it. The most critical need for graduates is to have a period to assimilate and refine the pre-professional experience before entering independent practice. Specialty or general dentistry postdoctoral programs provide such a period, albeit in very different ways.

Available Positions vs. the Size of the Graduating Class

The number of PGY1 positions available relative to the number of graduating seniors is important to achieving a goal of providing this opportunity for each graduate on either a voluntary or mandatory basis. It is generally agreed that expanding the number of positions to meet this goal should be in general dentistry, not specialty training, in order to maintain dentistry's favorable ratio of

general practitioners to specialists. If the number of graduates from the nation's dental schools remains around 3,800 as it was in 1993 - and there is no information to believe this will change dramatically - a continued growth in postgraduate positions is necessary to meet the needs of providing a year for all graduates. Assuming approximately 1,200 graduates will enter specialty training and there is no evidence that number will increase or decrease dramatically - then 2,600 new postgraduate positions must be available. In 1993, there were approximately 1,200 graduates enrolled in General Practice Resi-

The most critical need for graduates is to have a period to assimilate and refine the pre-professional experience before entering independent practice.

dencies (GPR) or Advanced Education in General Dentistry (AEGD) programs, the two recognized programs in postgraduate general dentistry. Thus, another 1,400 positions are needed before seriously considering a mandatory year of postdoctoral training for all graduates prior to independent practice. Such a policy would require programs to restrict all positions for U.S. graduates of the previous May-June period, or the number of needed positions would be far greater than stated above.

The question of whether there should be a mandatory one year of postgraduate education prior to independent practice is a distant question, because of the large number of new positions needed. However, if we are successful in providing postdoctoral educational programs for all graduates by 2005, and we can show benefits for graduates and the public, than the move to a mandatory year will become evolutionary. A recent report showed the public benefits from an additional year of training in general dentistry resulting from improved skills in managing the more difficult patient type." As far back as 1981, a majority of graduates surveyed by the Council on Dental Education "perceived a need for additional experience as a transition between graduation and establishing their permanent career."12 More recently, most advanced education programs report a substantial pool of candidates applying for the number of positions available.13

Based on the current shortage of postgraduate positions, it is appropriate to continue the voluntary approach of filling slots. Expanding slots to meet the voluntary need will be difficult. A recent study conducted by the American Association of Dental Schools¹⁴ showed it is impossible to accurately predict how many new positions are needed to meet the demand on a voluntary basis. Estimates as high as 400 new positions are cited to accommodate the difference between estimated demand and the number of currently filled postgraduate general dentistry positions. The AADS report pointed out that as the number of positions increased, they were filled. A goal of moving towards providing a postdoctoral year for each graduate by 2005, as recommended in the Institute of Medicine report,6 and previous studies, will require continued attention to developing new programs while maintaining or expanding current programs. To expand positions or begin new programs in the current economic and political climate will be difficult; there will most likely be no major new funding from governmental sources for a large expansion of hospital or non-hospital based programs.

Next Steps

Although the question of whether there should be a mandatory year of postgraduate education prior to licensure for independent practice is far from resolved, there appears to be consensus around four points: 1) An additional year of training for dentists should happen at the postgraduate level, not the undergraduate level. 2) Expansion of positions should take place in general dentistry and not in specialty areas in order to continue the tradition of a profession of general practitioners. 3) Newly developed programs should meet some type of accreditation requirements to make sure recent graduates enroll in programs adhering to a set of agreed upon national standards. 4) The immediate task is to expand programs to meet the current demand of graduates on a voluntary basis, while considering the ramifications of a mandatory year for independent practice.

An AADS Committee assisting the development of new programs has recently outlined two broad approaches to expand the opportunities in postgraduate training. First, linkage of settings other than the traditional dental school clinic or hospital setting for clinical training with academic institutions can substantially expand the available positions. The alternate settings the committee suggests are community health centers and dental practices. The role of the "faculty" mentor in assisting the recent graduate in these settings and the type of academic affiliation will be important as demonstration projects are devised. Workshops are planned by the AADS to carefully consider existing models and organize efforts to further develop alternate settings of a national scope. Second, the role of existing focused postgraduate training programs that are neither recognized specialties nor general dentistry should be examined relative to contributing towards a national goal of providing sufficient positions for all graduates. Preliminary information indicates there may be as many as two hundred positions in specific non-specialty areas of dentistry currently funded by institutions in twentythree different program areas, such as geriatrics, epidemiology, and oral facial pain. These fellowship programs impart education beyond the undergraduate area. The programs should adhere to some general, to-be-developed guidelines in order to qualify as sites for a mandatory year; but, they should not be overlooked as valuable experiences for the recent graduate.

Finally, it is not too soon for the profession to begin a structured effort to explore the implications for a mandatory year of postgraduate education prior to independent practice. This is a difficult issue as it involves state dental practice acts as well as a system of education to support such a mandatory year. With the IOM report now joining other recommendations for a postgraduate year, it is best for the profession itself to approach this issue and to establish the ground rules for change. Knowing how difficult it is to initiate any change, the time we spend creating new positions over the next five to ten year period also could be productively used to envision the movement from a voluntary to a mandatory system of postgraduate education in the year 2005. An organized effort by the profession will lead to benefits for all parties - the public, the recent graduate and the profession.

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Postgraduate General Dentistry Residency: A Clinical Model

James Gowan, DDS

Abstract

Dental graduates today are expected to be knowledgeable in many more areas than their predecessors. Changing technology and increased competition require entering the dental profession with more experience and skills. One approach to achieving this skill level is a postgraduate general dentistry residency in a clinical setting during the year following dental school graduation (PGYI). The clinical residency provides new dentists with additional hands-on training and reinforces classroom learning. HealthPartners was selected as a clinical rotation for residents in the advanced general dentistry program at the University of Minnesota Dental School. The program provides dental graduates in PGY1 training in all areas of practice.

The HealthPartners rotation is highly unique. It is a staff model HMO with a clinical, multi-specialty setting. Today, HealthPartners — a Minnesota-based healthcare organization — has 116,000 members with prepaid dental benefits.

Residents trained in the program develop increased skills in all areas of dental practice. In addition, they develop a good working knowledge in the basic sciences. Methods of instruction include didactic training in the form of seminars, lectures, and clinical training in HealthPartners' dental clinics.

n 1980, a task force of the ADA Council on Dental Education published a report on advanced education in dentistry. The task force recommended that positions in advanced general practice education programs be available to approximately half of all dental graduates. They recognized such programs allow new graduates to gain additional proficiency and confidence in providing a wider range of comprehensive services. Since 1988, the concept of advanced dentistry education has gained tremendous momentum and the number of programs has risen dramatically. Today, postgraduate positions are available for 64% of all graduates, a 25% increase since 1983.

The University of Minnesota selected HealthPartners as a clinical rotation in 1987. HealthPartners is one of several rotations available to advanced general dentistry residents at the University of Minnesota.

The HealthPartners' rotation in advanced general dentistry provides the community with four proficient, wellrounded dentists each year. Residents obtain training in geriatric dentistry, treatment of medically compromised patients, and difficult and complex restorative cases. HealthPartners has staff specialists in pediatrics, periodontics, oral surgery, and prosthodontics. The organization also works closely with specialists in orthodontics and endodontics. HealthPartners also maintains a clinic devoted to the diagnosis and treatment of TMJ problems and craniofacial pain. The group also has full-time staff dedicated to the business and administrative aspects of dentistry.

History

When HealthPartners' clinical rotation began in 1987, two residents were selected annually; compared to four today. The residents rotated among five clinics over the year. In the first half of the year, one resident rotated among three clinics and the other rotated between the remaining two clinics. The residents switched rotations after six months. HealthPartners offered four different rotations for residents: oral surgery, periodontics, TMD, and orth-



Dr. Gowan, a graduate of the University of Minnesota, School of Dentistry, is Director of the HealthPartners Advanced General Dentistry Residency at 8100 34th Avenue South, Minneapolis, MN 55440-1309. odontics. The rationale for changing locations and rotations was to broaden residents' knowledge through exposure to many different patient profiles.

HealthPartners reduced the number of clinics in the rotation, recognizing that residents gain a more concentrated experience by practicing at one clinic at a time during their rotation. They are still exposed to all aspects of general dentistry, while benefiting from continuity and being part of a clinic team. Today, residents go through the TMD and oral surgery rotations at Health-Partners. The orthodontics rotation is completed through the University of Minnesota.

Selection Criteria

Four residents are selected for the HealthPartners rotation each year. Residents must be graduates of accredited dental schools and selections are based on dental school transcripts, interviews, letters of recommendation, and a strong desire to enter the practice of general dentistry.

Rotation

Residents practice three days per week at one of two HealthPartners centers located in the Twin Cities metropolitan area and spend two days at the University of Minnesota attending lectures and providing clinical care. Rotations are divided into six-month intervals. While the majority of time is spent practicing in the clinic, residents also spend three days in HealthPartners Craniofacial Pain Clinic on the craniofacial rotation, and two weeks in HealthPartners Oral Surgery Clinic. Residents also frequently consult with staff specialists in pediatric dentistry, periodontics, and prosthodontics, and contract specialists in orthodontics and endodontics.

Staffing and Program Administration

Residents are not considered Health-Partners' staff dentists. HealthPartners pays the University of Minnesota a fee for each resident, with the university handling all liability insurance, salary, and administration.

While a resident may complete a patient exam, a staff dentist reviews and cosigns the patient's chart. Once treatment is complete, the resident fills out a HealthPartners peer review form. The staff dentist reviews the form and the care delivered by the resident and signs off, as appropriate. This ensures ongoing feedback between residents and staff dentists and assists in the residents' professional development. There is at least one staff dentist in the clinic while a resident is practicing.

Residents are expected to manage their schedules and conduct themselves as a dentist in clinical practice. Each resident works with a full-time dental assistant, allowing them to develop the skills needed to work in a clinic setting with other professionals. They are encouraged to seek challenges in terms of case difficulty and procedure time.

Facilities and Equipment

Residents in the HealthPartners rotations practice in one of two large dental centers. The first is near downtown St. Paul and serves a cross-section of ethnic and age groups. The second clinic is located ten miles south of the Twin Cities in Apple Valley, and serves a growing community of young families. Both clinics are located with medical centers, allowing for integrated patient care through easy access to consulting physicians. Both dental centers are equipped with state-of-the-art dental equipment and supplies.

Objectives

The HealthPartners residency rotation has two key objectives: 1) to provide a comprehensive training program encompassing all phases of general dentistry; and 2) to provide experience with alternative modes of dental care delivery and financing. The eleven educational principles of the program are listed below.

University Partnership

The certificate program in Advanced General Dentistry at the University of Minnesota began in 1983. Its purpose is to provide advanced training in clinical dentistry and to refine the skills necessary for the general dentist to provide comprehensive oral health care. The program is accredited by the American Dental Association.

Through the program, residents attend courses in physical evaluation and conscious sedation, as well as advanced-level seminars and lectures pertinent to general practice. Treatment planning and case presentation seminars are also held on a weekly basis. The Advanced General Dentistry program focuses on comprehensive patient care, with emphasis on diagnosis, treatment planning, and clinical decision-making. Experience is provided in dental specialty areas as well as practice and patient management.

The HealthPartners residency program is a contracted rotation of the University of Minnesota dental school. The partnership in advanced general dentistry residency has been mutually beneficial. The University gains solid clinical practice for their residents and HealthPartners' dentists are able to contribute to the dental profession by helping recent graduates refine their experience and expand their skills in a clinical setting.

Eleven Educational Principles of the HealthPartners' Postgraduate General Dentistry Program

The resident will be:

- I. Very knowledgeable in current practices of preventive dentistry.
- 2. Experienced in screening and treating dental traumas, especially as they relate to pediatrics.
- 3. Knowledgeable in the business aspects of different dental delivery and financing systems.
- 4. Have a good working knowledge of the basic sciences as they relate to dentistry.
- 5. Proficient in the delivery of general dental care.
- 6. Capable of treating medically compromised patients.
- 7. Capable of treating management problems, e.g., difficult pediatric patients, geriatric patients, mentally challenged patients, and mentally ill patients.
- 8. Able to effectively utilize auxiliary personnel.
- 9. Able to effectively interact with colleagues and other healthcare professionals.
- 10. Proficient in proper record keeping, methods of quality assurance, and peer review.
- II. Exposed to and will participate in formal peer review and quality assurance processes.

Extramural Fellowship Program — The Oregon Model

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Abstract

Surveys of recent dental graduates indicated they were not ready for solo private practice immediately after completing their formal dental education. After assessment of the regional external and internal environment, the School of Dentistry, Oregon Health Sciences University established a voluntary one-year extramural fellow-ship program in a non-traditional setting. The program requires the fellow to spend 80% of his or her time in a general dentistry office and 20% in a public service setting. The preceptor dentists pay a stipend competitive with other residency programs. The advantages of this transition year are: I) the fellow further develops technical and diagnostic skills and confidence in a general dentistry setting; 2) the fellow receives first-hand experience about the many business decisions made when running a successful dental office; and 3) the preceptor dentist has the opportunity to teach a fellow eager to learn, who could become an associate in the practice after completion of the program.

ine years ago the School of Dentistry, Oregon Health Sciences University decided to make a change in the school's mission by adding an optional extramural fellowship program to the undergraduate dental education curriculum. The major components of the statewide program include community service in volunteer outreach clinics providing dental care for the disadvantaged, and practice in the office of a preceptor who provides a stipend, emphasizes practice management experiences and clinical training, and shares participation in continuing education and organized dentistry activities with the fellows. The issues con-

sidered in planning this program are described below.

Regional External Environment

Oregon has an established network of settings for providing services to the disadvantaged. Several migrant worker clinics serve populations that primarily come for the harvest and then move on. Senior Smile Clinics for the elderly are in operation. Several component societies operate clinics for indigent children and Oregon has several Indian Health Service dental facilities. Many of these activities attempt staffing by volunteer dentists and are chronically operated at an inefficient level due to lack of personnel.

The State of Oregon offered several opportunities to develop an extended undergraduate dental education program in extramural sites. The general dental population is highly receptive to cooperating with a school-sponsored, community-based program. In a survey conducted among all general dentists in Oregon, 86.5% of respondents favored this concept. Perhaps more striking was the finding that 68% of these dentists were interested in serving as a preceptor. Later it was found that a considerable number of interested dentists did not have the office facilities to accommodate the program. Added reflections of the close bonds between the dental school and the practicing community in Oregon include: representatives of the Oregon Dental Association sit on ad hoc dental school committees: the dental school dean is a past president of the ODA, a former delegate to the ADA, and presently an alternate delegate to the ADA; several faculty members are ODA delegates.



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Internal Environment

The outstanding strength of the dental school is the excellence of the undergraduate dental education. The faculty is strongly committed to an undergraduate dental education program culminating in outstanding student performance in the clinical sciences. Oregon student performance on regional board examinations, which is well above average, supports a similar conclusion. A recent effort to place more emphasis on training in practice management is noteworthy because, in addition to several specialty areas, it is the area in which students feel somewhat deficient when they graduate.

The dental school feels the outreach dental program, helping the marginal poor, is one service responsibility to the people of Oregon. The program also enables students to be well informed about dental practice management, a skill vital in today's competitive dental market place. Further, the ability to work in a private practice dental office for a transition year between dental school and solo practice allows the student to learn practice management and additional clinic skills in a realistic setting without undue financial pressure.

The analysis of the environmental factors support a conclusion that the new graduates' dental education must emphasize social responsibility by identifying opportunities for students to provide care to disadvantaged groups. Further, they must be better trained in the basic principles of good management of a small business and must have achieved better mastery of some of the specialty areas while still maintaining restorative skills. The Oregon fellowship program addresses these issues and provides the following benefits for several constituencies:

- People of the State and Region and Groups with Special Needs: The program is designed for students to spend 20% of the fellowship year providing free or low cost care to disadvantaged groups. The program provides for an easier financial transition year after graduation; students under less financial duress are more likely to practice in locations and have fee schedules advantageous to the general populace. The program provides further training in procedures to which dental students were introduced, resulting in a better level of care.
- Practicing Dentists: The indigent care program benefits the public image of dentistry. Participating in continuing education and organized dentistry activities underscores the necessity for perpetual scholarship and good dental citizenship. Serving

as a preceptor gives the dentist a chance to teach and to return something to the profession.

Students: Students, in effect, have guaranteed employment for one year after graduation. They broaden their knowledge of various forms of practice, build confidence and gain practice management skills before entering solo practice. They gain first-hand insights of the needs of disadvantaged persons. They benefit from a close, one-on-one preceptorship relationship in a dental office setting.

The Benefits

Several features of the Oregon Model make it more attractive than the usual residency program. A major advantage is the program provides for a transition period between dental school and private practice. The fellow becomes an integral part of a successful practice and active in its operation. This offers a firsthand look at the business aspects of practice, management of personnel, a recall system, and a functioning physical plant. A second advantage, the fellow is able to assess at least one of several delivery systems before making a long-term commitment. This additional knowledge and experience could be a major factor in how a practice is set up

PGY1

or the type of system one chooses for a professional career. Third, the preceptor has the opportunity to share clinical skills and experience with a receptive fellow. This adds to what the fellow learned in dental school and makes a more complete and competent dentist.

The paper by Formicola and Redding in this issue states that any additional formal dental education should have the following elements: It should be 1) at the postgraduate level; 2) in the area of general dentistry; 3) on a voluntary basis at present; and 4) new programs should meet accreditation requirements so all recent graduates have a similar program. The Oregon program meets all the above criteria except number four, which requires a similar accredited program for all students. It is difficult to set up a standard program in a community health center because of variations in patient populations and different goals for the center. Setting up a standard program in a private practice is not a reasonable expectation since there is so much variability among practices. Despite the problem of variable experiences, we should not assume that learning, although different in each case, does not take place. We firmly believe that some variability will have to be acceptable if non-traditional settings are used.

The Oregon Program at a Glance

- Student Selection: Students may apply for a position in the program at the end of the junior year. A panel of faculty select students using the following criteria: 1) overall scholastic record for the previous three years; 2) clinical progress towards achieving competency in all required disciplines; and 3) evaluation of professional skills and judgment. Only students who excel in all three areas are selected. There is no predetermined number of positions for the program.
- Fellow Status: Students in the extramural program are designated "fellows" of the university. Under state law this has the following advantages: 1) Fellows are still students so are covered for tort liability and malpractice by the university. 2) Fellows do not pay tuition. 3) Fellows' loan repayment is deferred until completion of the program.
- □ Preceptors: Preceptor dentists are selected based on a letter of interest which includes a profile of the practice and a statement indicating why the dentist wants to become part of the program, and a visit to the dental office by the Program Director to do a standard assessment of the practice.
- □ *The Match:* The program director matches a fellow and preceptor dentist after assessing the practice profile and the immediate goals, future goals, and personalities of the parties concerned.
- □ Contract: A standard agreement (contract) is signed by the university, fellow, and dentist. The agreement addresses issues such as purpose of the program, general duties of each party, compensation, vacations, meetings, disability pay, benefits, ownership of patient and business records, public service, covenant not to compete clause, and term and termination.
- □ Community Service: The fellow works 20% of the year in a community clinic such as a migrant care clinic, nursing home, transient clinic, etc. This reinforces responsibilities as a professional and extends the service mission of the school.
- □ Dental Practice: Fellows practice general dentistry for 80% of one year in the office of a practitioner. This experience includes: I) enhancement of fellows' clinical skills plus a very strong emphasis on increasing business management experience; 2) service is in a solo practice, group practice, or HMO type operation at option of the fellow; 3) fellow and preceptor jointly attend continuing education courses provided at the dental school; and 4) fellow and preceptor participate in component dental society functions.
- □ Stipend: The financial arrangements are covered in the agreement between the university, fellow, and preceptor dentist. The agreements for all practices are uniform. The preceptor dentist provides a stipend for the fellow which consists of a base guarantee and a production incentive. This agreement is very similar to that which dentists enter into with an associate and is competitive with other residency stipends.
- Dental License: The fellow must have a license to practice in the State of Oregon.

Innovative Approach to Postdoctoral General Dentistry at the Lutheran Medical Center

Neal A. Demby, DMD, MPH

t is apparent from conversing with pre- and postdoctoral dental students and educators, and from studies aimed at assessing competency areas in dental education¹⁻⁴ that serious weaknesses are pervasive. The dental school of today, with few exceptions and for a multiplicity of reasons, has found itself inwardly directed, with students often isolated from the reality of healthcare experiences needed to achieve competency for practitioners beyond the year 2000.⁵

This is particularly troubling given the cataclysmic organizational changes that health care and healthcare delivery are undergoing in this country. One study³ surveyed dentists about competency areas they termed the weakest in their professional education. These were: communication with patients and families; teamwork, involving patients, and cost implications; access to care; information systems and use of technology; accountability and treating culturally diverse populations; community needs, managed care, healthy lifestyles; and continuing to learn. This is not exactly news to many dentists, especially those teaching in postdoctoral general dentistry programs (PGD).

These issues arose in previous de-

cades and were addressed whole- or half-heartedly. Nevertheless, they continue to plague the educational process. They include general issues of access, quality (CQI/TQM), participative or collaborative management, team building, technology transfer, communication, and reengineering.⁶

Both PGD programs (GPR and AEGD) were characterized by traditional approaches, with few attempts at creative innovations.7 This may be due, in part, to barriers in the accreditation process (standards), failure to embrace tenets of reengineering processes ("outside the box thinking"),6 and constrictive financing mechanisms. Further, there is a belief among some dental educators that the further away from the university the residents are located, the more difficult, if not impossible, to control the quality of the educational processes. In other words, the value of providing care in settings other than the school or hospital was greatly limited and underestimated. While this paper focuses on the use of Migrant and Community Health Centers (M/CHCs) as training sites, there are a variety of existing ambulatory care settings that could serve as PGD venues in the future. A partial listing appears in Table 1.

The need to increase the number of primary care practitioners in the U.S., including those in PGD training programs, is at the heart of many current healthcare legislative agendas. Numerous task forces and reports over the past fifteen years called for an increase in new training positions in general dentistry to accommodate the need or the demand for graduates by the year 2000.5,8-11 To accomplish this, most manpower estimates indicate that between 1,200-1,500 new training positions will be required.¹⁰ Conservative estimates indicate Migrant and Community Health Centers might offer between 250-300 extramural training sites for dental residents, offering both new and full-time positions. Thus, the capability for the centers to impact upon the needed positions is significant and may approach 25%. This assumes the potential barriers of financing, accreditation,



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Table I. Ambulatory and Primary Care Sites Potentially Appropriate for Postdoctoral General Dentistry Training Programs

- Migrant and community health centers
- □ State health departments
- □ City health departments
- Maternal and child health facilities
- □ Job Corps programs
- Homeless health programs
- Correctional facilities and prisons
- Health maintenance and managed care organizations
- Group practice settings
- Area health education centers
- National Health Service Corps sites
- □ Substance abuse programs
- Mental health facilities
- Departments of family medicine
- Public/private initiatives
- Facilities for handicapped and patients with special needs
- □ Long-term care facilities
- Indian Health Service programs
- Charitable organizations involved in health services

licensure, and resistance to change can be overcome and replaced by innovative, non-traditional and collaborative approaches to postdoctoral general dentistry education.

When exploring non-traditional and innovative settings, several existing programs continue to receive interest.7,13,14 One of these programs, described here, is sponsored by the Lutheran Medical Center and The Sunset Park Family Health Center Network in Brooklyn, New York. The program uses full-time residents training within geographically proximate and distant M/CHCs linked by telecommunication technology, with the mission of providing access to quality care for low income, underserved and special needs populations. The LMC program, with continuing support from the Bureau of Health Professions within the federal Health Resources and Services Administration (HRSA),15 is

exploring and improving distance learning using interactive televisions (IATV) and video teleconferencing to bring remote M/CHCs into the teaching environment.

The Lutheran Medical Center (LMC) program relies on a commitment to community-oriented primary care and a new set of competencies to assure that M/CHCs remain the most fertile terrain for primary care training. The LMC has outcome data suggesting that residents trained in M/CHC settings tend to establish practices in alternative care settings.

Background

The thrust of this paper is to review the potential of Migrant and Community Health Centers as training sites for PGD residents, thus significantly increasing the number of positions available. The LMC program is described fully with an emphasis on: 1) characteristics that make M/CHCs ideal training sites and alternative career pathways for residents; 2) the residency program; and 3) implementation of distance learning applications.

Lutheran Medical Center, established in 1883, is a five hundred thirty-two-bed acute care community teaching hospital serving two ethnically diverse and distinct neighborhoods in the Sunset Park and Bay Ridge areas of Brooklyn, New York. The Sunset Park Family Health Center Network serves as the ambulatory care facility for Lutheran Medical Center, with over 250,000 patient visits per year. A full range of primary care, subspecialty, social service, school and mental health, and substance abuse services is available within a managed care framework. Importantly, in 1987, LMC established the first demonstration HMO (including dental services) for Medicaid recipients in New York State. There are presently over 12,000 enrollees. The medical center is committed to residency training and operates residency training programs in internal medicine, family medicine, pediatrics, obstetrics, gynecology, flexible internships, and dentistry. The mission of the hospital, in addition to supporting postgraduate medical and dental education, is to build a hospital without walls or traditional boundaries to assure access to primary health care for the communities served. The hospital provides exposure to and experience with the health problems of a broad cross section of the population. The environment and philosophy of the hospital encompass excellence in traditional and innovative clinical services and concern for the well being of the entire person and family unit within the community setting.

The Sunset Park Family Health Center Network of Lutheran Medical Center, serving as the out-patient resource for LMC, remains as unique today as it was over twenty-five years ago in its position and leadership as the nation's first teaching Community Health Center.

The dental general practice residency (six residents) began in 1974 and the AEGD (nineteen residents) in 1988: both have operated continuously. A graduate training program in pediatric dentistry (four residents) was initiated in 1994. Significant experience is provided in all phases of dentistry, within an interdisciplinary, multispeciality group practice mode. There is a strong evaluation component and an intense quality assurance system that received nationwide attention. In addition to teaching and service, residents may particpate in other health services and research opportunities within the department and medical center. The goals and objectives of the GPR and AEGD programs are displayed in Table 2.

PGD Programs

Residents in the AEGD program receive academic training with Lutheran Medical Center residents although their clinical training is conducted at a participating community health center. The academic and clinical experience for AEGD residents are similar to the GPR residents. Participating CHCs and other training sites must provide a comprehensive range of both primary care services and patients. Each ambulatory training site may also provide significant experience in case management and managed care recipients. Advanced clinical experience is obtained in restorative dentistry, fixed and removable prosthodontics, endodontics, orthodontics, periodon-tics, and oral surgery. These clinical skills are integrated with patient and case management knowledge and clinical decision making to achieve effective and efficient practice management skills. Residents are supervised by attendings, the program director, and several program

coordinators, with a ratio of one supervisor per five residents. Continuity of care is maintained throughout the program year.

The lecture seminar program, similar for both GPR and AEGD programs, is conducted at Lutheran Medical Center and consists of a well-rounded dental, medical, behavioral science, practice management, and dental public health curriculum. Aided by a series of planned faculty development workshops over a two-year period and the incorporation of a competency- and problem-based learning approach, the curriculum is undergoing dramatic change.

The Community Health Centers

Access to health services for minority and underserved population groups gave birth to and stimulated the growth of the Migrant and Community Health Center (M/CHC) movement over the past quarter century. M/CHCs are unique among healthcare organizations — they are community controlled, serve poor and underserved populations, and have a history of continuously improving the quality and efficiency of services. Today, there are over seven hundred M/CHCs providing primary care throughout the country. These centers are funded under Sections 329/330 of the Public Health Service Act. Facts about M/CHCs and a profile of their patient base are shown in Table 4.

Historically there were few alliances between M/CHCs and residency training programs. With this in mind, the Lutheran Medical Center and Sunset Park Family Health Center Network initiated an AEGD program that relies on a network of M/CHCs for dental postgraduate clinical training.

Table 2. Goals and Objectives of the Lutheran Medical Center GPR and AEGD Programs

The overall objective of both programs is to provide training to competency in the general practice of dentistry which will permit the individual to function as an effective and efficient general practitioner. At the completion of the program year, it is anticipated that the resident will exhibit the following:

- Competence to provide comprehensive range of dental services which will minimize patient referral and sufficient framework of knowledge to refer judiciously and coordinate treatment among generalists and specialist practitioners.
- □ Capability to pursue continuing education throughout his or her career.
- □ The necessary management and interpersonal communication skills to institute proper auxiliary utilization and manage a private or group practice effectively and efficiently while functioning within a managed care environment.
- □ Ability to deal with a family or other social structures utilizing those social and communication skills important in dental practice. This includes the ability to assess the patient's medical status as well as the social, psychological, and environmental aspects of health and disease as they relate to the patient and the course of treatment and within a community-oriented primary care model.
- □ The skills necessary to provide all phases of preventive dental care for patients.

Table 3. Characteristics of Migrant and Community Health Center Patients

- □ Virtually all patients have family income two times lower than the federal poverty level.
- □ 50% reside in isolated rural areas; the other half live in economically depressed inner-city communities.
- □ 44% are children.
- □ 29.6% are unemployed.
- □ 13.8% are migrant and seasonal farm workers.
- □ 7.4% are pregnant women.
- □ 4.7% are homeless.
- □ 2.3% are HIV-Positive.
- □ 11% are alcohol or other substance abusers.
- \Box 40% of health center visits are for preventive and maintenance care.
- □ M/CHCs have brought about a one-third increase in the percentage of poor residents who receive dental care.
- □ M/CHC patients receive more prenatal care than do other poor residents who receive dental care.
- □ M/CHC patients have 52% higher immunization rates and 20% higher PAP smear usage than do comparable non-M/CHC residents.
- Patients at comprehensive primary care centers have an enhanced use of primary care services compared to patients who use hospital emergency rooms or outpatient departments.
- □ In 1994 M/CHCs provided comprehensive care and preventive services to over seven million medically underserved Americans.
- □ Over 60% of M/CHC patients are members of minority groups.

The Migrant and Community Health Center is an ideal and innovative location for the clinical education of an AEGD trainee because of the commitment to providing a high level of quality primary care to all residents of the communities served; the importance placed on the provider's understanding of the social, ethnic, and cultural background of the patients; the high level of dedication of primary care health professionals within the centers; and the need to demonstrate practice and case management principles in order to remain competitive. Each M/CHC has contemporary medical and dental facilities, offering a full range of primary healthcare services. Trainees have the opportunity to coordinate patient's total care with primary care medical providers. The dental facilities are modern, have four to over twenty-four fully equipped operatories, and their own staff of attending generalists and specialists. In addition, specialist dentists from Lutheran Medical Center supervise trainees at the participating health centers.

By examining some of the basic characteristics of M/CHCs, we can visualize how residents increase their competencies in key areas:

 M/CHCs are accountable to their culturally diverse communities and operated in ways that make them accessible to people with varying needs offering convenient hours and locations and continuity of care.

- M/CHCs are usually "one stop shops," offering a comprehensive range of primary health care and preventive services within an organized multispeciality, interdisciplinary group practice milieu. Management systems are in place to assure effective and efficient managed care delivery within a cost-effective framework.
- M/CHCs are staffed by qualified physicians, dentists, hygienists, physician extenders, nurses, social workers, and other health professionals working as a team. M/CHCs adopted a collaborative approach to internal management.
- M/CHCs improve the health status of their communities by keeping patients healthy and productive, by developing healthcare plans, and by implementing managed care programs all within a conceptual model of community-oriented primary care.
- M/CHCs significantly reduce healthcare costs by decreasing the use of excessive testing, inappropriate use of emergency rooms and length of hospital stays; by emphasizing practice guidelines, utilization review and quality assurance, and continuous quality improvement as part of a total management program.
- M/CHCs are incorporated as not-forprofit organizations and governed by community boards with local leaders who set program policies and priorities. There is a genuine commitment to consumer involvement and community control along with community-oriented primary care concepts emphasizing strong interpersonal communication skills between provider and patient and

significant patient involvement in decisions about their own health care.

Innovation in Distance Learning

The Lutheran Medical Center recently received support from the Bureau of Health Professions to initiate a new program, "Innovative Approaches to Advanced General Dentistry Education."^{7,15} The major objectives of the program include:

1) expand the number of AEGD residents at sites both proximate and distant from the main teaching hospital; 2) develop a "New Competencies" curriculum as recommended by the Pew Health Professions Commission and faculty development training; 3) develop and analyze interactive video (IATV) teleconferencing and distance learning techniques; and 4) develop and disseminate "mini-residency" and part-time certificate programs in general dentistry for community-based practitioners.

Though much has been written on distance learning, particularly telemedicine applications, very little information exists on potential application in dentistry.^{16,17} Corporate America has used distance learning in the form of twoway interactive television (IATV) for over a decade; telemedicine has, for the most part, used the medium for remote site consultation resources. The project at the LMC uses the modality to broadcast and provide a broad based, standardized curriculum to PGD residents who receive their clinical training at remote ambulatory care training sites.

The growth of this technology can be gauged from the fact that state and federal allocations for telemedicine-related technologies are likely to exceed \$100 million in FY 1994-95; over \$4 billion will be spent on conferencing in 1995, and an estimated \$13 billion by 1999. At least seventy large electronic medical networks are currently under construction. The definition of distance learning, offered by the United States Distance Learning Association, is the delivery of education or training through electronically mediated instruction including satellite, video, audio graphic, computer multimedia technology.

The method currently used for distance learning at the LMC-Sunset Park Family Health Center Network sponsored PGD residency training program includes multiple interactive teleconferencing sites capable of two-way audiovideo and multimedia exchange via telephone lines and compressed video. The capability exists (and is being used six to nine hours weekly) to transfer information using voice, sound, motion video images, texts, and documents in real time.

A strategy was developed that relied on distance learning using IATV and a large, well organized network of M/ CHCs. Given the quality of the educational program that could be achieved using IATV, the number of positions became virtually unlimited. The arrangement of the current sites is based on the concept of developing clusters of fulltime training sites. Each cluster has between five and ten residents training at sites within a radius of sixty to ninety minutes from the central teleconferencing studios. At least weekly, all residents come together at the teleconferencing site for the entire day to participate in the curriculum.

While the program presently is using large and centralized teleconferencing studios to broadcast the curriculum, the technology is available to do the same type of IATV via desk-top or laptop video conferencing. This technology soon will be integrated within the LMC program at training sites that are too geographically remote and cannot be part of a cluster.

The current distance learning project allows gathering and analyzing data on the impact of distance learning via IATV on the educational processes associated with PGD residency training programs. There is little doubt that if managed

Table 4. Characteristics of 1983 - 1993 Lutheran Medical Center Dental Residents

General Practice Residency (GPR)

- □ 40% female
- □ 48% represented minority groups
- □ 52% presently practicing either full- or part-time in settings caring for underserved and minority populations.

Advanced Education in General Dentistry (AEGD)

- □ 50% female residents
- □ 60% minority groups
- □ 63% presently practicing either full- or part-time in settings caring for underserved and minority populations

These data suggest that GPR and AEGD training conducted in a M/CHC environment may strongly influence future practice choices of residents, at least on a short- and intermediate-term outcome basis, as well as their commitment to caring for and improving access to care for minority and underserved patients.

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correctly and used in conjunction with a faculty development approach, this technology can standardize, if not revolutionize, the quality of education at a level previously thought to be unobtainable.

It is important not to forget the following issues and the potential implications for the profession and dental education:

- How can we use the technological revolution that is underway to our best advantage?
- What will be the impact of the technology on access and quality management issues?
- What are the legal and social issues that may arise? And will they be resolved?
- How can we best resolve licensing and reimbursement issues, if any?

It is clear that the day is here and the technology is available to provide every PGD resident (indeed all residents, students, and faculty) with the capability to avail themselves of desktop or lap-top videoconferencing technologies. These technologies can be applied to continuing education courses, specialty consultation, curriculum standardization, and communication with patients on responsibilities for their healthcare decisions and preventive behaviors. It is up to us to begin to explore the boundaries.

Conclusion

The growth of the teaching community health centers and the multiplicity of creative and innovative alliances that must be formed to sustain them will not come easily. Help must be found in the form of changes in the accreditation process to allow greater flexibility in program design and in resource allocation.

Rapid changes in technology make it difficult to predict the role of "teledentistry" in the future of dental medicine. The technology is here. It is available, but remains largely untapped by the dental education community. Depending on one's point of reference, distance learning using IATV may be seen as a valuable resource to bring badly needed access to speciality or primary care to underserved areas, a more efficient use of existing healthcare resources, a way of establishing a standardized qualitatively superior curriculum for residency training or continuing dental education programs, or a serious miscalculation on how to use increasingly scarce healthcare dollars.¹⁷

However or wherever the technology is used it is likely to be driven by factors based on the politics and economics of a managed care approach to health service delivery and the national effort to develop the electronic information superhighway.¹⁷ As competition heats up and educational resources available to academic health centers dwindle, the likelihood of greater use and applications for IATV technology increases.

There is little doubt the capabilities of this technology are virtually unlimited. The ability to link providers of care, residents, faculty, patients, families, and databases in appropriate combinations and permutations is not far off. Though this may fill some with trepidation, one thing remains clear: above all else, the telecommunication revolution should improve both access to most types of care and, critically, the overall quality of the uses envisioned.¹⁷

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Postgraduate General Dentistry in the Federal Services

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upport for PGY1 is alive and well in the federal services. As the recipients of a significant portion of graduates from our nation's dental schools, the federal services have long recognized the need for additional training for their new accessions. The general feeling is that recent graduates, as a whole, acquire adequate levels of knowledge but inadequately transfer this knowledge to clinical understanding and to clinical experience. Numerous programs have evolved to focus on the graduates, with programs varying from close supervision and tutoring on an individual basis to what has been called a credentialing tour or credentialing rotation. This is usually an organized series of rotations through clinics of various disciplines to practice under supervision and mentoring until the "expert" feels confident to sign-off clinical privileges. These credentialing rotations vary in length from several weeks for a single discipline up to a year for a complete program. These programs have evolved toward greater formality in most of the services, and have become Advanced Education in General Dentistry programs (AEGDs) in many instances in the military service

and are under study in the Public Health Service.

Graduate Dental Education (GDE) in the federal services logically focuses on the needs of the services and the requirements to provide for the operational readiness of their beneficiary populations. Therefore, the majority of the training positions traditionally were focused on the more experienced dentist, at the three to ten-year point in his/ her career. The federal services provide three general levels of graduate dental training: entry level (GPRs and AEGDs); fellowships (for experienced dentists, including advanced clinical programs in dental specialties and AEGDs); and residency training in the recognized specialties and general dentistry (two-year AEGDs). These programs are described in Graduate Dental Education in the Military Health Services System, by the DOD Tri-Service Dental Chiefs, published in January, 1994. The federal services currently have approximately two-hundred and seventy dental officers in PGYl training, including all the specialties and general dentistry programs. In recent years, most of the services have developed AEGDs to focus specifically on new accessions from dental schools. Currently, there are approximately one-hundred and eightytwo PGYl general dentistry positions in the federal services in a variety of programs. These programs include oneyear and two-year AEGDs and hospitalbased GPRs. Table 1 illustrates the distribution of these programs.

These general dentistry programs are predominantly clinical training positions. The AEGDs for new accessions are in excess of 90% clinical. The fellowships or mid-career one-year AEGDs are predominantly 80% clinical and 20% didactic. The two-year AEGDs are 60% to 80% clinical, with heavy didactic and research components. The curricula of the programs vary somewhat, based upon the needs of their individual services. However, the curricula focus on the competencies developed by the American Association of Dental Schools Section on Postgraduate



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| Table I. | PGY1 i | n General | Dentistr | y in the | Federal | Services |
|----------|--------|-----------|----------|----------|---------|----------|
| | | | | | | |

| Program Type | Air Force | Army | Navy | PHS/IHS |
|-------------------------------|-----------|------|------|---------|
| One-Year AEGD | 42 | 32 | 22 | 0 |
| One-Year AEGD (Mid-career) | 0 | 0 | 12 | 0 |
| Two-Year AEGD | 16 | 20 | 10 | 0 |
| (Mid-career) One-Year GPR | 0 | 0 | 24 | 4 |

Note: The Public Health Service Dental Corps is made up of dentists in the Indian Health Service (IHS), the Coast Guard, the Bureau of Prisons, and the National Health Service Corps. Only the IHS has its own training programs. The IHS also has two, two-year GPRs for a total of three positions.

General Dentistry Programs and are fully accredited by the Commission on Dental Accreditation.

Issues

The Federal Services Dental Corps have always been heavily committed to a general practice model of care. In the U.S. Navy, more than 75% of the clinical facilities are staffed by five or less dentists — a general practice model is appropriate. The dental corps of the different branches of the Public Health Service has also been predominantly general practitioners, with more than 90% of the clinicians in general practice. The military services traditionally have been general practitioners, with currently about 75% of the corps being general dentists.

Like much of society over the past twenty years, there has been increased specialization as seen by increased training of specialists and subtle changes in the practices of general dentists. These changes occurred organizationally, as many general dentists without advanced training became members of a department of operative dentistry and thereby became defacto specialists in operative dentistry, or as general dentists were assigned as rotators in specialty departments, limiting their practice to that specialty. The trend toward specialization also emerged in programs where mid-career federal services general dentists were trained in specialty fellowships to be augmenters for specialists. While remaining general dentists, many of these individuals subsequently limited their practices to a specialty.

The advent of credentialing and quality assurance also had a significant impact on specialization in the federal services. This trend seemed to have come from the old adage, "more is better." As a profession, we were unable to define quality or the credentials necessary to ensure quality; so, we collectively decided more training must mean better quality. Therefore, federal services dentists without advanced training found their practice privileges shrinking.

In recent years, there has been great progress in defining levels of care, competencies, and proficiencies. This served to better define general practice in the federal services and to focus training accordingly. Even though a general practice model has been used to varying degrees in the different services, the utilization pattern for general dentists described above had a detrimental effect on morale in some of the services. However, recent pressures on dentistry, and particularly military dentistry, to downsize, cutback, close facilities (e.g., bases) are leading to an apparent natural and gradual evolution to more general practices in the military. The trend also is moving to a health management program that organizes eligible federal services beneficiaries into "catchment areas." The eligible beneficiaries within these catchment areas are divided into managed care networks. Typically these networks depend heavily on small local clinics staffed by general dentists serving as primary care providers and "gatekeepers" who refer specialty level care to large centers. The large centers are also developing general dentistry departments to provide routine care.

The efficiency and cost effectiveness of using general dentists to provide routine care seems obvious but, unfortunately, we have a long way to go on this issue. The overwhelming majority of the oral healthcare needs of any population fall within the treatment parameters of general dentists. Some estimates for the federal services indicate as much as 80% of dental care needs can be performed by general dentists. This suggests that statistically, if not in reality, 80% of the quantity and 80% of the scope of required expertise falls within the realm of general dentistry. Thus, if one is providing dental readiness in a federal service or oral health in a managed care facility, it is cost-effective to put training dollars into developing well-trained general dentists.

The life blood of the Federal Services Dental Corps is a steady influx of recent graduates from dental schools. When reflecting on PGY1 training, the logic of in-house federal services training programs becomes convincing. Hence, the numbers of AEGD positions for new accessions in Table 1 represent a significant increase and promise to continue to increase annually. The commanding officers in the federal services are as concerned about the costs of these programs as their civilian counterparts. Dentists in training are not as productive as experienced clinicians. However, when you consider the quality and quantity of work of new graduates without extra training, the up-front investment of time and training will enhance productivity over an individual's career.

The need for what has been called *credentialing tours* was noted previously. This need is still valid and will only grow as a consequence of OSHA requirements, quality assurance, and credentialing standards. The explosion of techniques and technologies, and related products is another factor of current dental practice making the transition from dental school particularly difficult. It is unfair to expect anyone to transition into a current state-of-the-art dental practice without focused training and clinical experience.

Perhaps the most challenging obstacle in developing PGYl training programs is access to a patient base. In civilian training programs, this critical element makes a program financially viable. Unfortunately, many civilian AEGDs find the income base of their patient population insufficient to support the dental care needed both for the patient and the training program. Fortunately, patient base is one thing the federal services have in abundance. Any program that increases quality and quantity, and provides needed services to an eligible beneficiary population is tremendously attractive. Until governments provide access to care for the needy, inner-city populations served by many civilian training programs, the federal services are a realistic avenue to pursue the goal of providing a PGY1 opportunity for each dental school graduate by 2005.

The Future

If there is anything about the future of which we can be certain it is the cost of training programs will continue to be a paramount issue. All programs must be focused on the principles of efficiency and productivity. This point is clearly reinforced by the frequent observation that a successful general dentistry training program is achieved when the practice of quality comprehensive care is the primary goal and quality training is the by-product. The challenge is to place residents in a well-run, high volume practice with close contact and interaction with expert faculty. The anticipated results are a vibrant learning environment producing an unlimited number of "teachable moments" — as teacher and student interaction opportunities have been called. These pro-

Current Programs in General Dentistry in the Federal Services

Army

- Three, one-year AEGD programs for mid-career Army Dental Officers offered at Ft. Benning, Georgia; Ft. Campbell, Kentucky; Ft. Carson, Colorado; and adding this year one at Ft. Lewis, Washington.
- Two, two-year AEGDs offered at Ft. Bragg, North Carolina, and at Ft. Hood, Texas.

Air Force

- One-year AEGDs for new accessions from dental school are offered at nine Air Force facilities throughout the continental United States.
- Two, two-year AEGDs are offered at Wilford Hall Medical Center in San Antonio, Texas, and at Keesler Medical Center in Mississippi.

Navy

- One-year GPRs for new accessions from dental school are offered at five Navy hospitals in the continental United States.
- One-year AEGDs for new accessions from dental school are offered at Norfolk, Virginia; San Diego, California; and Great Lakes, Illinois.
- One-year AEGDs for mid-career Navy Dental Officers at Norfolk, Virginia, and San Diego, California.
- Two-year AEGDs for mid-career Federal Services Dental Officers at their Naval Dental School, Bethesda, Maryland.

Indian Health Service

- One-year GPRs at Tahlequah, Oklahoma, and Phoenix, Arizona.
- Two-year GPRs at Gallop, New Mexico, and Anchorage, Alaska.

grams will not only achieve the profession's goal of extra experience and training for recent dental school graduates, but will have the added benefit of an influx of new practitioners who are focused on quality practice and have the self-confidence and experience to achieve it.

A last comment about the future is as much a prayer as a prediction (even though many have come to this conclusion). The practice of general dentistry is extremely difficult and most importantly, it is much more than the practice of parts of a bunch of specialties. It is very different to practice endodontics in an endodontist's office while on a rotation than to practice endodontics in your own office where you are just finishing a crown prep and have a pedodontic patient scheduled the next hour.

This paper discusses, at length, the impact of specialization within the general dentistry community. This is one area where it is critical to turn things around. In order for a dentist to practice a full range of general dentistry s/he must be trained in the general practice

format. This does not eliminate the use of rotations as a part of training to provide particular skills and experiences. However, the purpose of these programs must be to provide clinicians equipped to practice a full range of general dentistry in an independent setting. It then follows that this type of practice requires not only the ability to perform certain treatment procedures but also necessitates the ability to establish an office for multi-discipline practice and to train necessary ancillary personnel. These skills are as important to the ultimate success of a graduate as the specific technical and clinical skills. Therefore, our programs must provide each resident with a fully equipped general practice operatory where the overwhelming majority of training is received. Especially in the federal services, this general dentistry scope of practice must be sustained through clinic construction and management. The training and subsequent practice envision general dentists who formulate the initial diagnosis and treatment plan for all their patients and continue to manage the patients' care until oral

health is achieved and a maintenance program is initiated. This type of managed care makes the general dentist the responsible clinician for each patient's oral health. S/he should perform the portion of care within his or her level of expertise and then make referrals to the appropriate specialists when needed, while maintaining contact and overall responsibility. A future with practices like those just described will not only strengthen the general practice community but will facilitate more quality referrals and stronger specialty practices. Ultimately, this means more practice satisfaction for all.

The contents of this paper are my own and for this I take full responsibility. However, I want to express my sincere appreciation to the following friends and former colleagues for their counsel and support: Colonel Donald J. Buikema, USAF; Colonel David B. Clem, U.S. Army; Captain David R. Fitch, National Naval Dental Center; Captain R. Frank Martin, U.S. PHS; and Rear Admiral William H. Snell, Jr., USN.

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Accreditation of Postdoctoral General Dentistry Programs

Paul Glassman, DDS, MA

here has been a call for expanding the education of primary care practitioners in dentistry by creating more positions in Postdoctoral General Dentistry (PGD) programs.¹⁻⁹ This call is repeated and amplified in other papers in this issue. As noted by Formicola and Redding, the concept is often voiced as a suggestion that enough PGY1 positions be developed for all dental school graduates, or for any graduate who wants one. They also point out, however, the growth in PGY1 positions in the last fifteen years was in PGD positions and this is not likely to change in the future. Therefore, efforts to meet the demand for PGY1 positions must be centered around PGD programs.

Currently, PGD programs are accredited as either Advanced Education in General Dentistry (AEGD) or General Practice Residency (GPR) programs.^{10,11} Although there are many non-accredited positions for recent dental school graduates, there is strong pressure to offer accredited programs. Since graduation from an accredited PGD program confers a certificate of completion, rather than board specialty status, it does not grant authority for a general dentist to perform any procedures graduates of non-accredited programs cannot perform, to advertise any differently, or to charge higher fees. It does mean, however, the graduate can expect a higher quality of education and can offer the certificate of completion as proof in applications for further education, hospital privileges, or academic appointments. Program directors want their programs accredited since evidence of program review enables them to attract the highest quality graduates to their programs.

Since it has been difficult to create enough new PGD positions in traditional settings in spite of federal investment of over \$40 million dollars, interest turned to creating new and innovative models for programs.^{8,12} In 1993, the federal government supported several innovative program models from funds previously reserved for accredited programs.^{13,14} The new models recently were reported and included placing residents in community health centers, at remote sites to the sponsoring institution, and using distance education technology.^{15,16}

If expanding PGD opportunities are to continue, and the incorporation of new innovative models proceeds, then the current accreditation process must be examined. This paper reviews the historical development of the existing models, examines some of the problems caused by the existing system, and proposes an alternative model. The premise is that it is time to change the accreditation process to one allowing and encouraging new innovative and flexible models for PGD programs in order to prepare future primary care practitioners in dentistry to meet this country's oral healthcare needs.

History of PGD Accreditation

PGD programs can trace their origins to dental services in hospitals and dispensaries already in existence in the early 1900s. These programs had no formal educational requirements or accreditation structure. The hospital-based training sites became Rotating Internships or Mixed Programs in the middle of the century. In 1972, the American Dental Association Council on Dental Accreditation (CODA) officially changed the name to *residency* and issued accreditation requirements for General Practice Residency Programs because they perceived the existing programs were not



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well defined and were not always of high quality.^{12,17} Since the GPR programs and their precursors had their origins in hospitals and represented the available PGD positions, sponsorship or co-sponsorship by a hospital was incorporated into the accreditation requirements.

From 1974 to 1982, the number of programs and residents actually decreased. This has been attributed to the depressed economy, which forced closure of programs for financial reasons and also to the fact that many programs could not meet the new accreditation requirements.¹² During this time, many non-hospital institutions felt they could offer high-quality advanced general dentistry programs. After considerable lobbying and debate, CODA appointed ad hoc committees to study this situation and developed the first accreditation standards for AEGD programs allowing non-hospital institutions to sponsor these programs.¹⁸ The two-program PGD accreditation model was thus created from history and politics rather than from a rational analysis of what type of accreditation model would best serve the healthcare system in this country.

Comparing AEGD and GPR Programs

Many individuals reviewed the similarities and differences among these programs.^{7,8,19-21} While there are some fundamental differences, there are many similarities. Both build on and complement predoctoral dental education. In the postdoctoral programs, dental school graduates learn new techniques; become proficient in previously learned techniques; become capable of providing dental care for patients with complex medical, dental, and social situations; and learn to integrate professional values with various aspects of dental treatment to provide long-term comprehensive care to individuals and communities of patients.

There is some evidence that PGD programs are becoming increasingly diverse. Several innovative program models were already described. A report on the UCSF AEGD program discusses the institution's decision in 1990 to combine its GPR and AEGD programs into a program with several areas of special emphasis, including hospital dentistry, geriatrics, oral medicine, and TMD.²⁰ The stated reason for the combination was the considerable overlap in the ADA requirements for the programs and the difficulty managing two programs with existing resources.

The increasing diversity and overlap among AEGD and GPR programs is leading to greater confusion among dental students who are applying to these programs.

The AEGD program at the University of the Pacific School of Dentistry also has elements of both types of programs. In the 1994-95 academic year each resident was involved in fifteen to twenty general dentistry operating room procedures. The residents typically did all the necessary preparation, performed the dental treatment, and handled all the hospital protocol. In addition, this program has a heavy emphasis on training residents to care for patients with complex medical, dental, social, and psychological problems. This AEGD program serves as the primary dental consultation service for a major hospital that is located across the street from the dental school. Residents consult on and perform operating room procedures on patients with heart, liver,

and kidney transplants, advanced HIV disease, and many other conditions.

As some AEGD programs began to offer training in hospital dentistry and dental care for severely compromised patients, many GPR programs had difficulty meeting accreditation requirements in these areas. CODA changed the standards for GPR programs in 1993 to allow less stringent application of the standards requiring residents to have in-patient hospital experience. An analysis prepared by the CODA staff of recommendations made after accreditation reviews of seventy-seven GPR programs from July 1, 1992 to October 14, 1994 showed the recommendations on in-patient and same day surgery patient care were among the most frequently cited areas. Thirty-seven programs received recommendations regarding inpatient records and twenty-eight received recommendations regarding specifics of comprehensive management of patients treated in a hospital setting. Not reflected in these numbers was the experience of a number of commission consultants who reported many GPR programs only satisfied the requirement for in-patient or same day surgery experience by sending their residents on rotations to ENT or Plastic Surgery services. These residents actually provided little or no general dental care in the hospital operating room.

The increasing diversity and overlap among AEGD and GPR programs is leading to greater confusion among dental students who are applying to these programs. A survey of dental students at the beginning of their senior year at the University of the Pacific School of Dentistry revealed much confusion about the similarities and differences among programs. Many dental school faculty now counsel students to investigate each program individually since the program type is not a reliable indicator of the program content.

Competency-Based Program Descriptions

There is a growing trend in dental education to describe curricula and training programs in terms of their impact on students (expressed as competencies), rather than on discipline-based content (expressed as behavioral objectives).²²⁻²⁸ Such a description focuses attention on the outcome, in terms of graduates' abilities, and of educational experiences, rather than on the process of education. This focus is more likely to create a graduate with the desired skills and to encourage program directors to choose educational experiences that will lead to developing graduates with those skills.

The Pew Commission described seventeen global competencies for dental practitioners of the future.29 A recent conference, sponsored by the PGD section of the American Association of Dental Schools and attended by representatives from the American Association of Hospital Dentistry, CODA, and several other organizations involved with postdoctoral general dentistry, produced a draft set of competency and proficiency statements for graduates of PGD programs.30 A subsequent survey of directors of PGD programs demonstrated considerable overlap in the perceived competency of graduates of these programs.³¹ Between forty-four and sixty-five competency statements were regarded as highly important to directors of both GPR and AEGD programs and could serve as a "core" set of statements to describe graduates of all PGD programs. These competency and proficiency statements could be used as the basis for a new type of accreditation process.

A Flexible, Competency-Based Accreditation Model

To recognize and encourage increased PGD program innovation and diversity,

an accreditation model can be developed whereby programs declare their intention to train graduates to be competent or proficient in specific areas. The choice of areas can be made from a list of core and optional areas. The declared competency areas would be published and specific accreditation guidelines developed for each area on the list. Programs can be evaluated and accredited based on the areas in which they prepare graduates. This model would focus attention on the *outcome* of educating general dentists rather than on the *process*.

Another advantage of this model is the fact it clarifies the strengths of individual programs for applicants, program directors, staff, and faculty. By publishing the list of declared and accredited areas, applicants can clearly understand the training they will receive in individual programs and make informed choices about program applications.

Further, this model makes the accreditation process more relevant to individual programs. Currently PGD programs must conform to one of the two (GPR or AEGD) sets of accreditation standards. With increasing program diversity, many programs do not easily fit into these two categories, yet they may be excellent training programs for producing general dentists with skills needed by our country's healthcare system. This model allows these programs to be evaluated on criteria relevant to their particular circumstances and strengths. The inclusion of core areas insures that all programs provide training in fundamental areas of advanced general dentistry.

Finally, this model allows and encourages more innovation and diversity in program design and function. Diversity and innovation are essential if PGD programs are to grow and prosper in the face of a dramatically changing healthcare system and the need for more and better trained primary care practitioners in dentistry.

The Section on Postdoctoral General Dentistry of the American Association of Dental Schools and the American Association of Hospital Dentists are the two organizations that best represent program directors of PGD programs. At the 1995 annual meeting of both organizations they passed similar resolutions calling on the American Dental Association Commission on Dental Accreditation to appoint a working group, with representatives from organizations involved with PGD programs, to analyze and develop a flexible, competency-based accreditation model.^{32,33}

Summary

There is increasing demand for PGD positions. New and innovative models for accrediting these programs will be necessary if the number of positions is to grow to meet the anticipated need. The current accreditation system is the result of a historical and political evolution and now does not reflect the increasing diversity among PGD programs. Ad hoc attempts to respond to changing workforce pressures led to difficulties for program directors in meeting accreditation requirements and confusion among applicants to these programs. At the same time, there is a growing trend to describe educational endeavors using a competency-based model, emphasizing the outcome rather than the structure or process of the educational experience.

This paper presents a proposal and advantages of a competency-based accreditation system for PGD programs. The proposal to restructure the accreditation process is supported by the major organizations that represent these programs.

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Changing Paradigms in Restorative Dentistry

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Abstract

Dramatic improvements in oral health have occurred during the last twenty years. Success is most noticeable in children and young adults, but also extends to the general population. The impact from declining disease rates, improved restorative materials and techniques, new diagnostics and treatments, a broad array of preventives, and better ways to deliver products and services to the public are demonstrated in the decline in the number of restorative procedures performed each year, including a 40% decline in the use of amalgam over the last eleven years.

The new paradigm for restorative dentistry calls for an increasingly conservative approach to treatment. The question now is not primarily whether amalgam, composite, or any other material will fill a cavity. The real issue is to make the distinction between caries as a disease and caries as a lesion. Treating caries as a disease requires a new approach to patient management. A diagnosis of caries requires that a patient risk profile be established. We can no longer be limited in our efforts to merely restore the individual tooth surface. This paper discusses the need to cure disease and restore the total integrity of our patients' oral health.

nce upon a time the sight of rampant caries was commonplace in dental practice. By the time adolescents finished high school, most of their permanent teeth were full of fillings and of course most of the elderly had lost all or nearly all their teeth.

Today, particularly in many of the industrialized countries, we are more likely to see completely caries-free children and adolescents, fewer and smaller lesions in adolescents and young adults, and more adults and elderly with their own dentition but heavily restored or with implants. This fundamental change in the patterns of oral and dental diseases, brought about by research developments, has had a dramatic impact on the practice of dentistry, in America and in many industrialized countries of the world. Success truly is most noticeable in children and young adults but clearly extends to the majority of adults as well.^{1,2}

Changing Disease Patterns and New Research Developments

The 1987 National Institute of Dental Research (NIDR) survey representing forty million U.S. school children showed a significant decline in the prevalence of caries in boys and girls between five and seventeen years of age. Today, 50% of American school children are caries-free, never had a cavity and never had a filling in their permanent teeth. Today, the average seventeen-year-old has only eight out of 128 surfaces affected by caries - a 53% decline in the last two decades (Figure 1).^{2,3} Smooth-surface caries is becoming a rare occurrence in these youngsters, with most of the caries confined to buccal and lingual pits and occlusal fissures.² It is important to remember these are averages; there still are pockets of disease among children, adults and the aged that for one reason or another have not been a part of this general progress. The trends among



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working Americans up to forty years of age are also extremely promising¹ and surveys in several other industrialized countries display similar trends.⁴

There are many reasons for this extraordinary achievement: water fluoridation, topical and systemic fluorides, improved oral hygiene products and practices, better nutrition, dietary modifications, and improved socioeconomics. In addition, more people are seeing a dentist on a regular basis, enjoying better self-care and professional care. More people expect to maintain their natural dentition for a lifetime. In addition, during the last fifty years there has been — and continues to be — a profound commitment to the prevention of oral diseases by the dental profession. Indeed, it is hard to find any other clinical health care discipline which demonstrates a similar level of engagement and success with the preventive approach.

Impact of Declining Disease Rates

As we get caught up in our daily lives, it is easy to lose track of the bigger picture of oral health care and the longterm trends. For example, recent figures from the American Dental Association (Table 1) reveal that during the 1980s the number of restorative procedures performed each year declined by over 13%; the number of amalgam restorations placed per year dropped from one hundred sixty million in 1979 to ninety-six million in 1990, representing an amazing 40% decline in just eleven years.5 Also, there are consistent clinical reports that caries lesions are smaller, easier to treat, and require less destruction of healthy tooth structure to restore form and function.

Scientific research continues to develop new and better materials and techniques, new diagnostics and treatments, a broad array of preventives, and better ways to deliver these prod-

ucts and services to the public. Our immediate goal is to find replacements for the current metallic restorative materials requiring excessive destruction of sound tooth structure. The new materials will be better and cheaper, provide improved bonding for less leakage, be more user- and technique-friendly, be of equal or greater strength and durability, provide better esthetics, and at the same time, satisfy stringent criteria for biocompatibility. Some newer restorative materials and sealants are already available. Some are incorporating preventive features, such as the controlled release of fluoride or chlorhexidine.6-8 and may include other therapeutic agents as well. Indeed, many of the new materials are blurring the distinction between treatment and prevention.

The New Paradigm

But, the question now is not so much whether amalgam, composite or any other material will fill a cavity. The real issue is for restorative dentistry to make the distinction between caries as a lesion and caries as a disease. Treating caries as a disease requires a new approach. First, if a carious lesion is detected, it is evidence that disease is present. So, instead of putting on the automatic pilot and reaching for the handpiece, the concept of caries as a disease dictates that we should evaluate all the factors responsible for the disease in this particular patient and bring them under control or eliminate them altogether.

Diagnosis

Today, caries diagnosis places less emphasis on a sharp explorer and more on sharp eyes and advances in imaging techniques.^{9,10} Once a diagnosis of caries is reached, a patient risk profile must be established. This profile now includes measures such as salivary flow rate, buffering capacity, and especially

the levels of cariogenic bacteria, such as strep mutans and lactobacilli. A complete profile must also consider diet, oral hygiene performance and habits, and a fluoride exposure history. With this knowledge at our disposal, it is possible to identify and diagnose patients at high risk for caries and to respond with appropriate and targeted preventive and conservative therapies.

In many instances this approach to disease management includes profiling family members as well. As with most bacterial infections, cariogenic bacteria are transmissible.¹¹⁻¹⁴ We can reduce or eradicate the organisms by dietary modifications or antimicrobial mouth rinses such as chlorhexidine.^{68,15} We can even prevent their initial transmission to children by treating mothers and other close family members with antimicrobial means.¹⁴

Treatment Choices and Clinical Decision-Making

The decision to restore a tooth or replace an existing restoration, while seeming outwardly routine, is actually quite complex and may often generate little agreement among dentists chosen at random.¹⁶⁻¹⁹ But first, it is important to note that caries activity cannot always be assessed during a single clinical exam. Treatment decisions made on the basis of such single exams might even be inappropriate.²⁰ An assessment of the risk of caries should be an integral part of treatment planning. Also, a continuous monitoring of the patient's risk level constitutes the appropriate patient-provider working relationship in the long-term.

Today, non-cavitation caries or the "white spot" lesion of early caries can be reversed through the use of demineralizing agents — fluorides and calcium phosphate agent,^{21,22} diet modification, oral antibacterial rinses such as chlorhexidine, and personal and professional oral hygiene measures. If appropriate conditions have been established by these means, remineralization of "white spots" usually occur within four to eight weeks.²³

If the decision is made to restore a tooth, the process should proceed with a conservative preparation in such a way that the maximum amount of sound tooth structure will be preserved. Dental sealants or preventive-resin restorations — not amalgam — should be our first choice for the initial and limited cavitation and the first filling.

For moderately-sized lesions and even deep or larger lesions, we need to proceed in the same conservative manner, destroying as little of the healthy tooth as possible. Glass monomers and composites have become viable alternatives to amalgam in many situations. While still lacking some in stress-bearing characteristics, they have the advantage of conservation of tooth structure, esthetics, and secondary caries prevention or arrest if fluoride is released by the material.²⁴⁻²⁷

The concept advocated here is that the moment of restoration should be approached with great care (Figure 2). The first filling represents a critical step in the life of a tooth. The limited clinical durability of dental restorations necessitates awareness and acknowledgment of the long-term consequences of the insertion of the first restoration in any tooth. It is very likely not the end of the story. In fact, it is more likely to be the beginning of a chain of repairs and replacements - procedures that will destroy more and more of the tooth's structure, requiring larger and larger restorations (Figure 3).28,29

Black's Principles

The time is long overdue to reconsider G. V. Black's traditional principles for cavity preparation. Our new understanding of the disease process, of the role and development of bacterial plaque and the lack of a selfcleansing system, as well as the availability of new materials, necessitate the abandoning the basic principles of "extension for prevention and retention" in cavity

| Table 1. Number of Restorative Procedures Performed by U.S. Dentists During the 1980s. | | | | | |
|--|-------------|-------------|--|--|--|
| | <u>1979</u> | 1991 | | | |
| Operative Procedures | 233 million | 202 million | | | |
| Amalgam Restorations | 160 million | 96 million | | | |
| From Nash (JADA 1991) | | | | | |



preparation. Proper procedures should require the removal of only diseased tooth structure and maintenance of maximum healthy tooth tissues. "Wait and watch," when carious lesions are found in their early stages or if they are simply suspected, is the appropriate approach for patients with low caries levels or for those who can adopt more positive oral health practices and for practitioners who are able to offer effective preventive interventions.

Patients with extensive caries or needing replacement of restorations also require aggressive preventive interventions. Generally though, care cannot be provided for them as conservatively as patients with few small and moderately-sized lesions. However, it is wise to remember always that once a large restoration has been placed, it cannot be replaced with a smaller one.

Repair vs. Replacement

Even after the first restoration is in place we can delay what has usually been a steady decline in the health of the tooth. Further conservation can be achieved by reconsidering "repair" versus "replacement" of defective restorations. Traditionally, most practitioners regard "repair" as "patchwork dentistry" and frown on the practice. Thus, restorations defective in only one area have routinely been completely removed and replaced, resulting in more loss of healthy tooth structure.

Data suggest that up to two-thirds of the restorations placed each year are actually replacements.^{30,31} So, the decision to replace or repair an existing restoration is an important one. Lack of standards to determine restoration failure and the lack of sensitive diagnostic tests to detect recurrent caries often cause dentists to err on the side of caution when faced with an uncertain diagnosis.^{30,32}

Lack of standards means reliance on subjective judgment, which can vary widely. For example, a bad restoration margin judged by Dentist A, may be judged acceptable by Dentist B. Likewise, a color mismatch may be acceptable to Patient A and Dentist A, but not to Patient B or Dentist B. There is a need to develop clear and objective criteria for making such decisions. For patients at low risk for decay, with a good diet, proper oral hygiene and acceptable salivary flow rate and bacterial counts, repair can be a more conservative and preferable option than total replacement of the restoration.

Although tooth loss has decreased significantly, replacement of teeth and edentulousness will remain an issue of concern for the future, because large cohorts of people still suffer from the life-long sequelae of dental caries and restorative treatments and because these cohorts will be living longer lives.

Most people want to retain their teeth. When this is impossible, they want a replacement to maintain an aesthetic, functional, and socially acceptable appearance. If a replacement is made, however, it should be done with minimal damage to the surrounding tissue and teeth. For this and many other reasons, the goal in the rehabilitation of partially dentate arches should be fixed and not removable replacement.

Osseointegration of dental implants has made this goal more realistic. It has become a highly predictable procedure and contributed to the rapid increase in replacing removable dental appliances with fixed restorations.³³ This eliminates the need in many instances for destroying healthy tooth tissues in order to fill in missing spaces. In addition, new materials and stronger bonding agents also are making bonded prostheses, such as Maryland bridges,³⁴ more predictable appliances.

What is the Future?

The trend is clearly toward a higher level of oral health. The key reason for this improvement is a person's oral health is intimately related to his/her total physical and emotional well-being. People are more attentive to their overall health and wellness, including their oral health.

Although the future of dentistry will require increased technical sophistication, the ultimate technology will be in health promotion, disease prevention and in minimally invasive techniques. Research in molecular biology and biotechnology will continue to reap innovative and powerful ways to diagnose, prevent and prognosticate.³⁵

The center of gravity of the profession is shifting from repair and restoration to prevention and oral health promotion. The new agenda behind this shift is generated by molecular biologists, microbiologists, immunologists, epidemiologists and behavioral scientists. However, with new knowledge already at our disposal, it is possible to identify and diagnose patients at high risk for oral disease and to respond with the appropriate and targeted preventive and conservative therapies.

Throughout its recent history the dental profession has shown great public leadership by promoting fluoridation, by emphasizing preventive personal hygiene, by advocating good nutrition and healthy diet and by preaching and practicing many other things promoting "the prevention ethic" that now clearly holds sway among the people of many nations.

Although an earlier section called for a repudiation of G. V. Black's cavity preparation design, his visionary outlook is seen clearly in this quote from 1895, "The day is surely coming...when we will be engaged in practicing preventive, rather than reparative, dentistry. When we will so understand the etiology and pathology of dental caries that we will be able to combat its destructive effects by systemic medication."³⁶

The day for this type of medication has long since come. Now is the time

for a new paradigm for restorative dentistry. Or, as Dr. Max Anderson of the University of Washington said, "In the modern management of dental caries — the cutting edge is not necessarily a dental bur."³⁷

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State Dental Boards' Policies on a Practitioner's Duty to Care for HIV Seropositive or AIDS Patients

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he acquired immune deficiency syndrome (AIDS) epidemic raises the question of whether a physician or dentist has an ethical or legal duty to care for patients infected with the human immunodeficiency virus (HIV). Numerous articles discussing this question have appeared since the advent of the epidemic.1-6 Authors attempted to ground a physician's duty to treat HIV-infected individuals in ethical principles, legal principles or the historical record. Authors stated the historical record does not provide a tradition to treat patients with HIV positive or AIDS patients.5,6 Others though, expressed countervailing opinions.3 Some physicians advocated that a physician has an ethical duty to treat an HIV-infected individual.^{1,7,8} Yet, for every such opinion there appears to be a retort denying such a duty exists.9-11

Professional organizations published policy statements or guidelines for their members. The American Nurses' Association considers it morally obligatory for a nurse to give care to AIDS patients.² By contrast, the American Academy of Orthopedic Surgeons issued a more general statement merely asserting a physician has an ethical obligation to treat all patients.² The largest physicians' group, the American Medical Association stated, "a physician may not ethically refuse to treat a patient whose condition is within the physician's current realm of competence solely because the patient is seropositive."2 A major shortcoming, however, is that the AMA unequivocally declared it has no intention of enforcing its own guidelines.12 The American Dental Association stated a "decision not to provide treatment to an individual because the individual has AIDS or is HIV seropositive, based solely on that fact, is unethical."13

A relatively new federal act, the Americans with Disabilities Act,¹⁴ provides HIV-infected individuals with some measure of protection.¹⁶ Under the Americans with Disabilities Act, the federal government may take action against persons who discriminate against individuals who are seropositive or who have AIDS. Indeed, the Justice Department has already begun to take action. In one case it has sued a dental chain for allegedly discriminating against people infected with the AIDS virus.¹⁶ Given divergent viewpoints on a healthcare provider's duty to treat HIVpositive patients, the authors undertook a study of state dental boards' policies on this issue.

Purpose

To the authors' knowledge, there is no comprehensive study of state dental boards' positions on a dentist's duty to care for HIV-infected persons. This study was undertaken to address this vacuum. The purpose of the investigation was to conduct a preliminary survey of the existing state laws, as seen



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through the eyes of the dental boards, concerning the obligation of dentists to treat individuals who are HIV seropositive or who have AIDS.

Methods

A list of all the dental boards was obtained from the Massachusetts Board of Registration in Dentistry. The initial contact consisted of a cover letter and questionnaire, mailed in October 1993 to every dental board in the fifty states, the District of Columbia, Guam, Puerto Rico, and the Virgin Islands. Thus, questionnaires were sent to a total of fifty-four jurisdictions. A self-addressed envelope and an additional self-addressed mailing label were included. Five weeks after the first mailing (December 1993), follow-up correspondence was sent to boards that had not responded. No telephone follow-up was done. The results were collated through the spring of 1994.

Results

The principal question of the survey asked "Does the state (whether through the board or the board's supervisory agency or any other agency or the legislature, etc.) have a policy concerning a dentist's duty to treat an HIV-positive or AIDS patient?" The question did not ask whether the board per se had a policy, since it was felt if the state had a policy, the board would be able to rely on this policy to take action in the event there was a complaint against a dentist for refusing to treat an HIV-infected or AIDS patient.

The following guidelines were used in deciding whether a state had a policy:

- 1. A state was considered to have a policy only if the law was specific to HIV and AIDS. The word "law" was used to include a statute, rule, regulation, or board policy. An example of such a law is the Maryland Health Occupations Article, SS 4-31(a), which provides that the dental board may "reprimand any licensed dentist, place any licensed dentist on probation, or suspend or revoke the license of any licensed dentist, if the applicant or licensee: ...Refuses. withholds from, denies, or discriminates against an individual with regard to the provision of professional services for which the licensee is licensed and qualified to render because the individual is HIV positive."
- 2. A state responding that the issue was covered by the Americans with Dis-

abilities Act was not considered to have a policy, since it appeared they regarded the matter as a federal, and not a state issue. Indeed, one state dental board responded that since October 1990 it referred seven complaints alleging discrimination to the United States Department of Justice's Human Rights Commission and to the Office of the Americans with Disabilities Act. The board itself took no action. This confirms suspicion that states replying that the Americans with Disabilities Act covers the issue regard the matter as a federal matter. By contrast, a state was considered to have a policy if it explicitly incorporated the act by reference into its own laws. An example of such an incorporation by reference is the Washington Annotated Code 246-816-075, stating, "It shall be unprofessional conduct for any dentist ... to violate any of the provisions of any state or federal anti-discrimination law."

3. A statement that abandonment of an HIV positive or AIDS patient constitutes grounds for disciplinary action was not construed as a policy since abandonment is applicable to any person who is already a patient.

Table I. Dental Board Information on a Practitioner's Duty to Care for HIV Seropositive or AIDS Patients.²¹

| Existence of Policy | | | Previous Experience | | nce | Anticipated Action | |
|---------------------|-----|---------|---------------------|--------|-----------|-----------------------------|--------|
| | No. | Percent | | Boards | Incidents | | Number |
| Formal Policy | 12 | 26% | Complaints | 8 | 30 | Will Take Future Action | 15 |
| No Formal Policy* | 34 | 74% | Action Taker | n I | 2 | Will Not Take Future Action | 2 |

*Two jurisdictions are in the process of developing formal policy.

4. A board policy on HIV positive and AIDS patients, even though not expressed in the form of a rule or regulation, was regarded as a policy. An example is a response from a dental board stating it was board policy that a practitioner may not refuse to treat a patient without good cause, and HIV is not good cause. Another state dental board responded it is board policy to follow the American Dental Association's Principles of Ethics and Code of Professional Conduct. Since it is that board's policy to follow the ADA guidelines, and since the American Dental Association's Code of Professional Conduct states a "decision not to provide treatment to an individual because the individual has AIDS or is HIV seropositive. based solely on that fact, is unethical," the response was accepted as the board having a policy.

Each author independently determined whether a particular state had a policy. In cases of disagreement, there was consultation to reach a mutual decision.

Findings

The policies are not listed by state since the purpose of the survey was to ascertain in a general way the existing state of affairs in the United States. The results of the survey are depicted in Table 1. The response rate was 85%. Of the responding dental boards, only 26% have formal policies prohibiting a dentist from refusing to treat an individual who is HIV seropositive or has AIDS. Of the dental boards with no policy, two reported they were in the process of enacting some kind of legislation. One is considering enacting regulation on this issue, but the expected effective date of the regulation was not specified. The other state is considering enacting both a statute and a regulation. Neither

of these two dental boards reported it had received any complaints from the public. Interestingly, one board responded it "has no law or regulation specifically requiring a dentist to treat any patient. The dental laws regulated by the dental boards give patients free choice of dentists, but do not obligate a dentist to provide treatment."

Of the responding dental boards, only 26% have formal policies prohibiting a dentist from refusing to treat an individual who is HIV seropositive or has AIDS.

Complaints to dental boards occurred predominantly in two states. One of these boards received fifteen complaints, and the other received seven complaints, of the total of thirty reported by all states. Only one board has taken any action and in each case the offending dentist was "admonished."

When asked whether the dental board would consider taking action in the future if it received a complaint, fifteen boards responded they would consider taking action. Six of these boards have no policy and are not contemplating enacting any legislation. The boards did not indicate how they intend to proceed in the absence of any policy.

The questionnaire asked boards about AIDS-specific laws because the authors believed that boards are more likely to take action if laws existed. It is possible, however, for a board to take action despite the absence of an AIDSspecific law. A Utah statute defining "unprofessional conduct" to include "violating or aiding or abetting any other person to violate, any generally accepted professional or ethical standard" provides an example of a non-AIDS specific law that could serve as a vehicle for board action.¹⁷ The remaining boards either did not respond or indicated they did not know whether the board would consider taking action in the future. Surprisingly, two dental boards that have a policy indicated they did not know whether the board would consider taking action in the future. One of these boards had two complaints in the past but did not take action against the offending dentists. Two dental boards responded they would not consider taking action in the future. Neither of these boards has a policy concerning the issue and neither reported receiving any complaints.

Discussion

Few states or boards have adopted an explicit policy concerning a dentist's duty to care for HIV seropositive or AIDS patients. This may be due to the fact that states have received so few complaints that they have not deemed it necessary to devote often scarce resources to an issue that is rarely a problem. This is not to say there may not, in fact, be more discrimination, but only that there are relatively few complaints.

Even given the limitations of this study, it is abundantly evident that individuals who are HIV seropositive or have AIDS can take little comfort that existing board policies assure them a dentist must provide care within his or her sphere of competence. For example, one state dental board that received fifteen complaints has taken no action against the alleged offenders. True, these dentists, or some of them, received substantial fines from the state's Division of Human Rights. Nevertheless, one wonders whether the dental board would have received fifteen complaints had it taken quick ac-

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tion of a nature putting the state's dentists on notice that the board would not tolerate such behavior.

The issue of HIV-infected patients' access to treatment is not inconsequential. Studies have shown that many healthcare providers are reluctant or refuse to care for HIV-positive or AIDS patients. A 1990 survey of Missouri physicians showed that only 45% of physicians were willing to treat HIVpositive patients.¹⁸ The number willing to treat AIDS patients - 38%, was even lower. The Delaware Medical Journal, citing statistics from a study published in The Alabama MD, reported that 23% of American physicians said they would not care for AIDS patients if they had a choice.19 In a 1988 poll of forty-one hundred members of the Chicago Dental-Society, only three dentists were willing to accept new AIDS referrals.20 In a 1991 national survey 50% of physicians indicated that they would not work with AIDS patients if given a choice.²¹ While the number of healthcare providers, including dentists, who

refuse to treat HIV-positive or AIDS patients may have declined, there are still some providers who refuse to treat these patients.¹⁶ Thus, there are patients in need who may find it difficult to obtain care. For this reason, dental licensing boards should be more active in the sphere of HIV-positive and AIDS patients.

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Dental Care Coverage Among Older Americans

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Abstract

Dental expenditures increased by almost \$20 billion during the past twenty years. A contributing factor to this growth was the rapid proliferation of dental insurance. Unfortunately, dental care coverage is not uniformly distributed. For instance, while many younger Americans are offered assistance in paying for dental care through dental insurance, few older Americans are offered coverage because it is usually job related. Whereas several studies reported that dental care coverage is directly related to dental utilization, no significant empirical study of multiple factors has shown who is most likely to have dental insurance. The purpose of this study was to determine who is most apt to have dental insurance and what factors may influence or be related to having dental care coverage. Findings indicated that individuals with low income, large families, those having a poor health status, who are not married, are older, unemployed or female were least likely to have dental care coverage.

ccording to the Department of Health and Human Services, dental expenditures increased by almost \$20 billion during the past twenty years.¹⁻³ A contributing factor in this growth was the rapid proliferation of dental insurance.2-3 During the late 1960s, insurance companies began offering coverage for dental expenditures to large groups already underwritten for medical expense coverage. In 1967 only 4.5 million persons were covered by dental programs; by 1985 approximately 100 million persons had some form of dental care coverage.24 Increasingly, dental care coverage became a popular fringe benefit sought

during contract negotiations between employers and employees.

Dental benefit plans differ from their medical counterparts and have been designed with a basis found in the uniqueness of dental care needs. Unlike medical insurance plans, primarily fashioned to protect against unpredictable, unanticipated and significant economic loss, dental benefit plans are usually arranged to reimburse participants for dental care expenditures that are routine, anticipated, or preventable.5-7 With the exception of accidents and some dental infections, dental care needs are universal, ongoing, expected, and more or less predictable.5-7 Compared to medical expenditures, dental

expenditures are relatively small, expected, and not catastrophic.⁷

According to Feldstein, dental care is not insurable in the same sense as hospital or surgical services and dental insurance is not really insurance but a "form of forced savings."⁷⁻⁸ In fact, Zatz, Landy, and LeDell suggest that the term dental "insurance" is actually a misnomer and submit that dental benefit programs are not truly insurance but are rather a form of prepayment for a universal need.⁶ Accordingly, dental insurance may be more appropriately referred to as "prepaid" dental care or dental care coverage.

According to the Health Insurance Association of America, during 1990 approximately 100 million people were covered by dental insurance.³ Unfortunately, dental care coverage is not uniformly distributed. For instance, while many younger Americans are offered assistance in paying for dental care through dental care coverage or insurance, few older Americans are offered



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Table 1. Percent sample of older Americans with dental care coverage arranged by various sociodemographic variables

| Variable | Category | % Covered |
|----------------|------------------------------|-----------|
| Income | < \$20,000 | 15% |
| | \$20,000 - \$39,000 | 39 |
| | \$40,000 - \$49,000 | 50 |
| | \$50,000 + | 50 |
| Family size | 1 | 19 |
| | 2 | 30 |
| | 3 | 39 |
| | 4 | 39 |
| | 5 + | 21 |
| Age | < 65 | 39 |
| | 65 + | 17 |
| Employment | Employed | 41 |
| Status | Unemployed | 22 |
| Health status | Poor | 15 |
| | Fair | 23 |
| | Good | 30 |
| | Excellent | 35 |
| Education | Some high school | 19 |
| | High school graduate | 32 |
| | College graduate | 42 |
| Marital status | Single | 21 |
| | Married | 33 |
| | Widowed, divorced, separated | 19 |
| Race | Black | 25 |
| | White | 30 |
| Gender | Female | 26 |
| | Male | 33 |
| Teeth present | Yes | 32 |
| | No | 22 |
| Total | | 30 |

this opportunity because dental care coverage is usually job based. In addition, some workers presently covered by a dental benefit program are faced with the loss of dental care coverage upon retirement. In fact, the findings of the National Survey of Oral Health in U.S. Employed Adults and Seniors noted that 52% of all employed adults age sixty or older had dental care coverage while only 34.5% of non-employed seniors had similar coverage.¹

While several studies reported dental care coverage is directly related to dental utilization, no significant empirical multi-variate study has shown who is most likely to have dental insurance. The purpose of this project was to determine who is most likely to have dental care coverage among older Americans and what factors may influence having dental care coverage.

Method

This study involved the examination and analysis of secondary data available from the National Center for Health Statistics.9-11 The National Health Interview Survey (NHIS) is the "principal source of information on the health of the civilian noninstitutional population of the United States."9 The NHIS is a yearly cross-sectional survey with a sample size of approximately 62,000 persons. The objective of the survey is to address current major health issues through the collection and analysis of national data on the incidence and prevalence of illness and utilization of healthcare services.9-11 The 1986 NHIS included questions on the dental health care of the civilian, noninstitutional population of the United States over the age of two years.9-11

Data analysis focused on non-institutionalized adults between the ages of fifty-five and seventy-five who were not eligible for Medicaid. Bivariate analysis made use of two-way tables to show the percentage of individuals with dental care coverage by several sociodemographic variables. For the multivariate analysis, comparing the combined effect of several variables at a time, multiple logistic regression was employed to describe the presence of dental care coverage. Multiple logistic regression is an analytical technique used to help predict or understand one variable (dependent variable) in the context of several other variables (explanatory variables).

The dependent variable in this study was presence of dental care coverage. Several sociodemographic factors were hypothesized to influence dental care coverage and were included as explanatory variables. Explanatory variables included: income, family size, age, marital status, presence of teeth, employment status, health status, education, gender, and race.

Results

Table 1 provides a breakdown of dental insurance coverage by several sociodemographic variables and indicates 30% (N=1584) of older adults had dental care coverage. Persons who earned less than \$20,000, lived alone, were sixty-five or older, not employed, in poor health, did not finish high school, were not married, female or without teeth were least likely (p<.03) to have dental care coverage. In addition, Blacks were less likely (P<.02) than Whites to have dental care coverage.

Parameter estimates from the regression analysis in Table 2 indicate employed older adults were more likely (p<.005) to have dental care coverage than a similar group of non-working older adults; older women were less likely (p<.02) to be covered by dental insurance than older men. Further, older adults with higher levels of family income were more likely (p<.0001) to be covered by dental insurance than

| Table 2. | Analysis of maximum likelihood estimates from multiple logistic |
|----------|--|
| | regression analysis of predictors of having dental health insur- |
| | ance in a sample of older Americans. |

| | Parameter | |
|--|-----------|-------------|
| Variable | estimate | Probability |
| Income | 0.000038 | .0001 |
| Family size | -0.1166 | .0018 |
| Age | -0.0710 | .0001 |
| Employment status: Employed | 0.2127 | .0047 |
| Health status: Poor | -0.4502 | .0040 |
| Health status: Fair | -0.0132 | .8965 NS |
| Health status: Good | 0.0500 | .5052 NS |
| Education: Some high school | -0.2055 | .0790 NS |
| Education: High school graduate | 0.1990 | .0452 |
| Marital status: Single | -0.3924 | .0373 |
| Marital status:Widowed, divorced, separated | -0.3375 | .0004 |
| Race:White | -0.2310 | .0503 NS |
| Gender: Female | -0.1740 | .0115 |
| Teeth Present:Yes | -0.0019 | .9819 NS |

comparable older adults with lower income levels. In addition, parameter estimates indicate single (p<.04) and widowed, divorced or separated (p<.0004) older adults were less likely to be covered by dental insurance than married older adults.

Interestingly, high school graduates were more likely (P<.05) to be covered by dental insurance than college graduates. As expected, individuals over sixty-five were less likely (p<.0001) to be covered by dental insurance than individuals less than sixty-five. Older adults in poor health (P<.004) were less likely to have dental insurance than older adults in excellent health. Table 2 also suggests that older adults living in multiple-person households are less likely (p<.002) to have dental insurance than older adults living in households with fewer individuals. Table 2 suggests that several explanatory variables do not significantly add to the precision of the model. For instance, race, health status of fair or good, presence of teeth, and education status of some high school were not significant (p>.05) and do not add to the precision of the model.

Discussion

While analysis of NHIS data has been productive and useful, it does have limitations. For instance, since NHIS data provide only a limited measure of certain explanatory variables, such as presence of teeth and family size, analyses are limited. Other limitations exist because certain valuable data are not available. Since NHIS data do not include a price variable, the demand for dental care coverage cannot be estimated. Dental care coverage is often

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provided to employees as a fully or heavily subsidized employee benefit. Frequently, employees are offered one plan only and, since dental care coverage plan selection is made by the employer and not the employee, individuals typically do not purchase dental care coverage independently. While it is possible that an employee may accept or reject a job opportunity on the basis of dental care coverage, this is highly unlikely.

Therefore, since employees often are not offered a true choice, dental care demand would be difficult to estimate with or without a price (premium) variable. While the addition of a price variable is highly desirable, regression analysis can be conducted without it and used to adequately describe an association between several non-price explanatory variables and the dependent variable (presence of dental care coverage) to estimate a consumer's intent to obtain dental coverage subsequent to retirement.

Survey limitations also exist. NHIS data are retrospective and do not directly provide information on individuals' intent to acquire dental care coverage. In addition, self-reporting may be less accurate than collection by observation, further limiting the results of this study.

On the other hand, data analyses have been productive and information gathered during this study can be used to provide a better understanding of who is more or less likely to have dental care coverage or which factors may influence having dental care coverage. Specifically, analyses indicate that age, employment status, health status of poor, education status of high school graduate, marital status of single, widowed, divorced or separated, and gender are factors influencing dental care coverage. Multiple logistic regression analyses indicate individuals with low income, large families, a health status of poor, unmarried, or female were less likely to have dental care coverage. Although findings indicate employed individuals were more likely to have dental care coverage than a similar unemployed or retired group, a surprisingly large number of unemployed or retired older adults had dental coverage. Perhaps dental coverage was maintained as a post-retirement health benefit or extended to some unemployed or retired older adults as an employment benefit of a working spouse.

Some dental care coverage findings are not obvious. For instance, when controlling for covariates, high school graduates were more likely to be covered by dental insurance than college graduates. Perhaps, non-college graduates were more likely to receive postretirement health benefits as a consequence of previous union employment. Additionally, older adults in poor health were less likely to be covered by dental insurance than older adults in excellent health. Unfortunately, older adults encumbered by poor health were at greatest risk for systemic complications secondary to oral disease and may require the greatest assistance to access dental care.

Although race does not significantly add to the precision of the proposed model, Black older adults appear to be no less likely to be covered by dental insurance than White older adults. On the other hand, previous studies reported that Blacks have lower rates of dental utilization than Whites.¹² Perhaps Blacks are unable to use their dental coverage in numbers comensurate with Whites because of other access barriers to care such as income, travel or health.

Although additional study is warranted to focus on the relationship between race, health status, dental care coverage, and dental utilization, data analyses have been productive and information gathered during this study can be used to provide a better understanding of the acquisition of dental care coverage.

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Ethical Checklist for Dental Practice

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Abstract

A checklist for verification of unethical business practices, originally formulated by Drs. Blanchard and Peale, is adapted to dental practice. A scenario is used as a model to demonstrate the applicability of this instrument to dental practice. The instrument asks three questions in regards to an ethical dilemma: 1) Is it legal? 2) Is it fair? 3) How does it make you feel? The paper concludes the giving of gifts to general dentists by dental specialists for the referral of patients is unethical.

ertainly, there are instances when a person with questionable business ethics is appointed or elected to a high position/office based solely on his/her business skill. It seems character may be ignored in the business world or other positions of trust; the poignantly pervasive view is that the only requisite for business success relates solely to economic factors. In today's world it may be difficult to find a person who possesses both business acumen and moral character.

In academia, cases of cheating and dishonest behavior by students and faculty occur — students cheating on exams and faculty falsifying research data in pursuit of publications, research grants, and tenure. However, a physician or dentist who graduates from medical or dental school with honors and possesses great skill, but performs unnecessary surgeries or treatments for financial gain has compromised his/her integrity and character. It may be better to be treated by a person who did not graduate as high in the class but possesses sound ethical character. We in the health professions are entrusted with much by being in the position to provide patient care. Surely, our ethical standard should be of the highest order.

In their book, *The Power of Ethical Management*,¹ Drs. Kenneth Blanchard (author of the *One Minute Manager*) and Norman Vincent Peale (author of *The Amazing Results of Positive Think-ing*) developed a checklist for evaluating business situations that present an ethical dilemma. Their checklist analyzes an ethical dilemma from three perspectives: 1) Is it legal? 2) Is it balanced? Do all parties involved in the issue, or conflict, benefit? (e.g., a win-win situation), 3) How will your decision, or manner of resolving the ethical dilemma make you feel?

Blanchard and Peale believe if you answer negatively to any one of the three ethical questions, you should not engage in the activity, behavior or practice. Some of the principles developed by Blanchard and Peale are:

- There is no right way to do a wrong thing.
- Nice guys may appear to finish last, but usually they're running a different race.
- Managing only for profit is like playing tennis with your eyes on the scoreboard and not on the ball.



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In addition to their

Mr. Deluzio is a partner in an accounting firm in Jeannette, Pennsylvania. There are many examples of unethical practices carried out by dentists, such as disparaging other dentists for personal or financial gain or overtreating or overprescribing patient therapies for monetary gain. The latter could include orthodontists performing Phase I treatments that may not be necessary, or performing treatments with questionable or no scientific validity for monetary reasons. Other examples include enrollment in capitation or HMO programs, where the circumstances make it difficult to maintain treatment

this method as 2.4 on a 4.0 scale (where 4 = excellent and 1 = poor).

Is It Legal?

This question generally is a conscious and logical deduction about the facts of the dilemma (a left-brain, analytical thought process). Typically, it is not illegal to give a gift to a referring dentist. This can be interpreted as standard business practice.

However, some Internal Revenue Service (IRS) guidelines should be considered. Giving a gift or entertaining a

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standards; engaging in misleading advertising; dental specialists treating family and staff of referring dentists or potential referring dentists for little or no cost for the explicit or implied purpose of benefiting from patient referrals.

This paper demonstrates the applicability of Blanchard and Peale's ethical instrument to dental practice by citing one example — a dilemma arising when dental specialists give gifts to referring dentists for the referral of patients. The example was developed from the perspective of orthodontics, where in 1993 it was reported that 69.1% of the orthodontists responding to the *Journal of Clinical Orthodontics* practice study gave gifts to general dentists as a means of soliciting referrals.² Respondents rated the effectiveness of referring dentist, if not a violation of a specific federal or other statute, could fall within the IRS statutes of a deductible business expense. In general, a taxpayer - whether a corporation, an individual, or a partnership - may deduct from gross income in the tax year the ordinary and necessary expenses of carrying on a trade or business. With this in mind, the type and amount of gift given, along with the existing business relationship dictate the deduction claimed (e.g., business gifts), whether made directly or indirectly. Business gifts are limited to \$25 per recipient per vear.

Business entertainment expenses are deductible if directly related to the active conduct of a trade or business, or if they are associated with such busi-

ness if the expense is for entertainment directly before or after a substantial and bona fide business discussion. Although objective in nature, these perspectives are considered by the tax professional and the IRS when determining the tax deductibility of such expenses. Entertainment expenses are further limited by preestablished amounts (50%) which further reduce the amount of otherwise deductible entertainment expenses. Recurring or wide-spread expenditures to or on behalf of a specific individual or group of individuals can be considered compensation. These amounts are then subject to income and possibly employment taxes; not to mention the possible implications of fee splitting.

However, just because something is legal does not necessarily make it ethical. An ethical standard should be higher than a legal standard.

As a referring dentist, one is legally and professionally responsible and may be held accountable for the dental specialist's work or the work of other professionals to whom you refer patients. The dental specialist who is giving the dentists gifts for referrals may be very competent; but, the dentist may know little or nothing of the dental specialist's professional competency and is only referring to a specialist for the gifts received. It is prudent for the referring dentist to know the capabilities and limitations of the specialist. It may be possible, or even likely, that if a dental specialist is sued by a patient the referring dentist also may be sued.

In other parts of the world, the giving of gifts is a questionable practice. In Queensland, Australia the dental practice act prohibits a dental specialist from giving a gift, a payment, or other benefit to another dentist for the referral of a patient. The Queensland Dental Amendment Act 1991. No. 56, under Prohibited Practices (5C) states, "A dental specialist must not make or give, or agree to make or give, any payment or benefit to any person in respect of the referral by a dentist of a patient to the dental specialist for any advice, service, treatment or operation in respect of the practice of dentistry."

Is It Balanced? Is It Fair?

This question relates to situations with "win-win" outcomes - all parties benefit. In the case of giving gifts or buying-off dentists for referrals, only one clinician wins, at the expense of the others in the community who are trying to earn a living. It is also possible that the referring dentist loses. His/her integrity may be questioned by the patient, who may not receive the best care and therefore finds another dentist. In retaliation or response, the other specialists in the community could use the same tactic of gift giving and even try to outdo each other. Alternatively, the other clinicians could disparage each other and develop ruthless relationships. There are specialists who want every patient in the community and feel angry if another dentist gets a patient, even though they are financially secure. Overall, a "win-lose" relationship is not a healthy working environment.

The checklist requirement for being fair places ethics in a social or professional context. It is related to the Golden Rule and asks the question, "Would I want to live in a community or practice in a profession where everyone behaved as I am considering behaving?" Being fair means contributing to the quality of the profession, not just one's personal interests.

How Does It Make You Feel?

If your family or significant others knew of your actions, how would you feel? If your actions were published in the newspaper, how would you feel?¹ This question focuses on your emotions,, your intuition, your subconscious mind, and your standard of morality (a rightbrain, holistic, and emotional thought process).

Perhaps, one reason ethics and morality are often ignored is the rationalization they are personal or private matters. Arguments often ensue because of the question, "Whose sense or opinion of morality is going to be followed?" Certainly, there are different views on morality from person to person; cultural and religious beliefs also impact on ethical standards. But, for the most part, the standard of morality in the United States is based on a Judeo-Christian model. Several biblical passages may

Your referral pattern should be based exclusively on the quality of treatment you expect for your patients.

have guided our sense of morality: "What good will it be for a man if he gains the whole world, yet forfeits his soul" (Matthew 16:26). Similarly, in the holiest book of the Hindu religion, the *Bhagavad Gita*, Arjuna is directed by God to serve Him and to serve others, "Strive constantly to serve the welfare of the world; by devotion to selfless work one attains the supreme goal of life. Do your work with the welfare of others always in mind...The ignorant work for their own profit, Arjuna; the wise work for the welfare of the world, without thought for themselves."

Dr. Ken Blanchard³ said he never heard of anyone on a death bed saying, "I wish I had worked more." Rather, they express regret for having not spent more time with loved ones. Faced with serious illness or death, an individual may wake up to the true priorities in life, which are not money, prestige, rewards, and achievements.

Joan Borysenko, in her audio presentation, The Power of the Mind to Heal,4 recounted a trip she made to an impoverished community in India where there was very little food and the women owned only one dress. However, a woman of this community expressed to Borysenko remorse for the people of the United States. This woman felt sorrow for the stressful pursuit of materialism in the U.S., and how the people of the U.S. leave their children with strangers all day long so they may work for materialistic ends. Also, the Indian women expressed concern that Americans do not know their neighbors and they place their elderly in institutions. Comparably, Mother Theresa said, in reference to the United States, that there is too much materialism and too little spirituality.5

It sometimes seems appropriate and easy to give a gift, a material token, in return for a child's love, or friendship, or dental referrals. However, love, friendship, and dental referrals should be *unconditional*. In other words, it should not make a difference whether you, as a referring dentist, receive a gift from a dental specialist because of patient referrals. Your referral pattern should be based exclusively on the quality of treatment you expect for your patients.

If a small gift from the dental specialist is an expression of gratitude for referrals — a way of saying thank you — and the quality of patient care is excellent, then there should not be an ethical dilemma. On the other hand, extravagant gifts are inappropriate. In these cases it is only proper and ethical for the referring dentist to refuse these elaborate material rewards for patient referrals.

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Conclusion

Often, the first step to change is awareness. The purpose of this paper is to demonstrate the utility of the Blanchard and Peale model for ethical problems in dentistry. The example presented here concludes that gift-giving by dental specialists to dentists for patient referrals may not be illegal by strict definition of the law, but it appears to be unethical.

The giving of gifts presents an ethical dilemma for both the dental specialist and the referring dentist and represents a possible conflict of interest. Perhaps the dental practice act of Queensland, Australia could be adapted or incorporated into the American Dental Association's Code of Ethics or into the dental practice acts of individual states. It may be appropriate first to develop a symposium or conference to discuss this issue and other ethical concerns within our profession.

The American College of Dentists can serve as a conduit for stimulating research, ideas and experience in the area of ethical behavior in dentistry. The objectives of the College — "to promote the highest ideals in health care...to encourage the free exchange of ideas and experiences in the interest of better service to the patient" — are congruent with these ideals.

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Leadership



The Service Model

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Seventy-five percent of America's gross national product (GNP) comes from the service segment of the economy; nine of every ten new jobs are created there.

The service model is built on a simple but revolutionary premise: *give the customers what they want, now*. In contrast, the principle of the industrial or manufacturing model (now waning in significance) is to *give the customer something tangible they need*. Roughly speaking, there are four types of service industries: *Fix-it* (mechanics and lawyers), *entertainment* (college football and church camps), *information* (teachers and county government employees), and *service value-added to manufacturing* (product warranties and dinner at a fancy restaurant).

Dentists make crowns and engage in other forms of manufacturing, although this aspect of the profession declined substantially over the past thirty years as a portion of dentists' time. Dentists are engaged predominantly in the professional side of "fix-it" type service. To a lesser extent, they provide information, add value to products through their professional reputation and convenience of practice location, and even engage in "entertainment" if this is the proper term for a courteous staff and the dentist's professional deference to patients.

What Is Service?

There are four characteristics that distinguish service from manufacturing. The first is the *intangible nature* of service. Some authors say manufacturing is having something you can drop on your toe. Service, on the other hand, is "consumed" or "experienced." Thus, there is an immediacy about service that does not exist in manufacturing, as well as a psychological component. "How" service is delivered becomes as important as "what" service is delivered, and a great deal of service work is done in the presence of customers.

The second characteristic of service is that it has virtually no shelf life. There are only insignificant gaps between creating value and delivering it to the customer. In most cases, the customer must be present for any value to be created. Although it is possible to assemble needed supplies and to rehearse service, it is impossible to stockpile it. The approach to quality in service is different from the approach in manufacturing because of the inability to store service products. Careful attention must be paid to quality degradation which occurs during natural fluctuations in peak demand. Further, quality cannot be ensured through inspection and elimination of defects before delivery; greater attention must be placed on developing a service delivery team and perfecting its performance. Finally, what is held out to the public is not a product they can inspect, but rather a promise.

The third characteristic of service is *customization*. Although there are examples of standardized services (movies) and customized manufacturing (options on cars), generally, services are more individualized to the customer. Responsiveness to individual customer needs is one of the distinguishing characteristics of service in the professions.

The final characteristic distinguishing service from manufacturing is the participation of customers in producing the service. Aside from the obvious fact that patients (customers) participate in their treatment planning, they also participate in delivery of care through accurate answers on health history; attending dental appointments and exhibiting cooperative behavior; telling the dentist when something is uncomfortable or looks awkward; and complying with professional suggestions concerning post-surgical medications or home care routines. This is such an important aspect of service that it will be discussed in detail below.

Because service is so noticeably different from manufacturing, it is important to point out a problem that exists in dentistry as a result of choosing the wrong model. In quality evaluation, we assume dentistry is a manufacturing process. Restorations are evaluated in dental schools, on licensure examinations, and by third-party carriers as a

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means of quality control. This is necessary, but insufficient since it ignores the more complex and more important service components of dentistry.

Researchers in the field of quality estimate that technical quality accounts for about 10% of customer satisfaction with a service. One of the challenges facing the dental profession is to identify and measure the components of variation in dental service that correspond to the four characteristics identified above. Specifically, we must distinguish among the variation due to naturally occurring and acceptable random chance; variation between good and poor procedures and their delivery (the traditional concern of controllable poor quality); uncontrollable variation in the environment caused largely by individual patient differences; and, legitimate differences in how quality is defined.

All of the characteristics of service focus on the importance of customer satisfaction. The customer is now "king" or "queen" and service means ensuring their satisfaction. What is not as obvious in service is that customers also are the score keepers. They decide when service is effective and when it is deficient. This presents a special challenge for professional services such as dentistry, where patients lack the education to judge many of the characteristics deemed important by dental professionals.

How Do Customers Define Quality Service?

Research has identified that customers view service along five dimensions. First is *reliability* — "Is the service what I was promised and will it predictably meet my needs?" Customers also look for *responsiveness* — "Is the service customized to my needs — timeliness, convenient location, ease of participation, and availability?" A third dimension is *assurance* — "Is the service delivered in a trustworthy environment; does the service provider have my best interests at heart?" The next dimension, *empathy*, has received a lot of attention in the service literature — "Is the service friendly, courteous, delivered by attractive individuals, and designed to make me feel special?" The final dimension is the *tangible aspects* of service — "Do the office appearance, dress of employees, equipment, paperwork, and other visible elements of service imply that the intangible elements are also of high quality?"

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There appears to be consensus among experts in the quality field that the importance of these dimensions runs in the order that they are listed above: reliability - meeting customer expectations — is the critical element. while the tangibles are only an important adjunct. Research on the convenience store industry produced the surprising finding that empathy, as expressed in a smiling and personable environment, was negatively associated with ratings of service quality. Customers go there for quick service, not friendly service. The stories of service quality at Nordstrom are legendary and they feature heroic efforts of sales associates. Too often overlooked is the fact that Nordstrom carries a wider range of shoes than anyone in the world and its billing and other financial arrangements are always perfect. Good service often comes with a smile, but the smile is not the service.

Customers appear to assess quality as though they are evaluating an equation. The components of the equation include the experience they receive, their expectations for the service, and the costs. Positive service occurs when the experience exceeds customers' expectations. In situations where experiences exceed expectations by comparable amounts, customers prefer service with the lower costs. The equation looks something like: Value = (Experience - Expectations)/Cost. All three components in the service value equation can be adjusted.

Dentistry traditionally focused on the experience component. Arguably, the profession was more successful than service industries, in general, and than the medical profession, in particular, in adding value to patients' oral health experience. Some dentists focused on the educational component of creating realistic expectations for patients, although the profession as a whole has not paid a great deal of attention to this need.

The issue of cost is and will be critical to the identity of the dental profession. Two important questions must be addressed: "Is it professional to compete in dentistry on the basis of cost?" and "What is the long-range impact on the nation's oral health to add value to patients' dental experiences by reducing their cost?"

Of course, we must be cautious to avoid confusing cost with fees paid to the dentist. A self-employed professional with a dental plan will find the fee insignificant as compared to lost income, driving time, and perhaps the psychological costs of facing deteriorating health or being placed in a vulnerable environment. An uninsured and unemployed individual who loves social contact with professionals may evaluate the same dental treatment in a very different light with regard to cost.





Management guru Peter Drucker is famous for his quip, "All organizations are in business to make customers." One could refine this notion in the context of service to read, "The organizations that win the service game will be those with the best customers." Because service is customers' experience and there is an intimate connection between creating and consuming this experience, many organizations view customers the same way they view employees - they are recruited, trained, informed, and rewarded for their appropriate participation. Some companies have written job descriptions for customers. Of course, these aren't shown to customers, but firms do evaluate customer performance with an eye towards providing help in office layout, traffic flow, directions, assistance, and removal of barriers standing in the way of customers performing their jobs well. Some service organizations go farther and involve customers in formal programs to improve service. Focus groups, questionnaires, and even paid consulting positions are used to make service organizations more userfriend-ly.

The big surprise for many in service organizations is discovering customers also play a managerial role. Try this mental experiment: on average, how many minutes per day do you spend providing immediate feedback to your employees about how well they are doing in their service roles? Now imagine how many hours a day this is done by patients. On the basis of this comparison, decide who is managing your customer service, training, and reward programs?

The manufacturing model treats customers as commodities — undifferentiated units — and therefore, focuses on the numbers of customers. In contrast, the service model looks toward the quality of the customers and the depth of the relationship created between providers and customers.

Service research has shown it is considerably more cost effective to add value to the services of existing customers than to seek new ones. In fact, it costs about six times as much to get a new customer than it does to keep a current one satisfied. The recent history of the dental profession supports this wisdom as the oral health of most Americans increased dramatically. Although economically sound, this strategy created a noticeable political liability in the stubborn pocket of underserved Americans who do not match the prevailing delivery system model.

Building customer relationships in service is different from the same task in manufacturing because of the inherent variability of service encounters. As mentioned previously, this variability is large and never entirely under the control of those delivering the service. The motto of the manufacturing model is, "Leave me alone while I work on this. When I make it perfect I will give it to you and you will like it." In service, the approach is, "Let's work together on this. With your help, I can achieve something I have never accomplished before and you will have something that delights you."

Service recovery (from defects) makes sense in a way that manufacturing recovery does not. We were taught by the quality movement that variation is anathema and must be designed out of products before delivery. There are limits to this thinking in the case of service. Organizations which respond effectively and immediately to service glitches actually develop stronger customer relations than similar organizations where no glitches have yet occurred.

The Japanese say a defect is a treasure, or they sometimes state that as you stumble, you may trip over a treasure. There are two lessons to be gained from this view. First, service is a relationship which begins before and extends after the purchase of a service. Second, service is an experience that has the potential for improving both the customer and the provider.

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Recommended Reading

Carlzon J. Moments of truth. Cambridge, MA: Ballinger, 1987.

Now a classic. Carlzon turned around an ailing Scandinavian Airlines by reducing the number of management levels to get the top people closer to the customers and by empowering employees to solve customer problems themselves. A moment of truth is any encounter where a customer can form an impression of the company.

Hart CWL, Heskett JL, Sasser WE, Jr. Soothing the savage customer. *Harvard Business Review*, 1990, 68, 14-20.

The issue is not blame, but an opportunity to build customer loyalty. No system of fail-safes prevents all service problems, but some companies have a reputation for excellent recovery. Speed and empowered customer contact personnel are the keys.

* Maister DH. Managing the professional service firm. New York: The Free Press, 1993. ISBN 0-02-919782-1; 375 pages; about \$40.

Although an expensive book; it is the best bargain in advice I have come across in years, with the potential to change any professional service firm — an organization of professionals offering service to the public. Finding the right size, the correct mix of customers, and ethical ways to add value to service are all covered with practical examples.

* Schneider B, Bowen DE. Winning the service game. Boston, MA: Harvard Business School Press, 1995. ISBN 0-87584-570-3; 295 pages; about \$25.

Excellent summary of the service model. After defining service, each of the primary business functions (management, personnel, finance, etc.) is examined from the service perspective. * Zeithaml VA, Parasuraman A, Berry LL. Delivering quality service: Balancing customer perceptions and expectations. New York: The Free Press, 1990. ISBN 0-02-935701-2;225 pages; about \$25.

A technical gold mine. The research literature on service quality is summarized by investigators who contributed much to the field.

Dimensions of service. These journal articles describe various aspects of service from back room support to dress. The titles are accurately descriptive:

Bitner MJ. Servicescapes: The impact of physical surroundings on customers and employees. *Journal of Marketing*, 1992, 56, 57-71.

Bitner MJ, Booms BH, Tetreault, MS. The service encounter: Diagnosing favorable and unfavorable incidents. *Journal of Marketing*, 1990, 71-84.

Chase RB, Hayes RH. Beefing up operations in service firms. *Harvard Business Review*, 1993, 71, 65-77.

Kerr S. On the folly of rewarding A while hoping for B. Academy of Management Journal, 1975, 18, 769-783.

Lovelack CH, Young RF. Look to consumers to increase productivity. *Harvard Business Review*, 1979, 57, 9-20.

Rafaeli A, Pratt MG. Tailored meanings: On the meaning and impact of organizational dress. *Academy of Management Review*, 18, 1993, 32-55.

Editor's Note

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

Agencies

The American Association of Dental Schools

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

he mission of the American Association of Dental Schools (AADS) is to lead the dental community in addressing contemporary issues influencing education, research, and the health of the public. The AADS office is located in Washington, D.C. and is led by Executive Director Preston A. Littleton. There are three divisions in the association:

The Division of Application Services and Resource Studies reports on issues, such as the workforce, and operates the centralized, computerized application services (AADSAS) for pre- and post-doctoral programs. Last year, AADSAS processed applications for dental schools across the United States for approximately 3,900 available positions.

The Division of Educational Affairs is responsible for initiatives such as curriculum reforms, competency-based education, PGY1, response to the Institute of Medicine report, and faculty development workshops. "The big issues facing the profession, and especially dental education, are not technical," says AADS President Lisa Tedesco, a behavioral scientist and associate dean for academic affairs at the School of Dentistry, University of Michigan. "We now are looking at major questions of how students learn; the balance between diagnostic ability and surgical skills; the length of time to become a dentist; methods to ensure continuing competency; mechanisms for delivering patient care; and financing dental education. A concern that is especially important to me is the growing multiculturalism of America and our obligation to train future professionals for their role in a pluralistic society."

The AADS is interested in issues of licensure, patient access, mobility of dentists, and the use of human subjects on initial licensure exams. The AADS is an active partner in DISC, the Dental Interactive Simulations Corporation, a consortium that is developing computer-based simulations to be used in dental education and evaluation. These issues are coordinated through the Education Division activities.

The Governmental Affairs Division is the branch working closely with the ADA's Washington office to monitor and influence legislation that impacts on dentistry and dental education. In a Congress looking to trim the federal budget, health care, education and research are major targets. AADS is very active in spreading the message that dentistry and dental education are successful and should not be penalized for this success by too-close an association with the problems in medicine. Currently, the AADS is fighting to insure dentistry is considered a primary health care profession.

There are four additional offices in the AADS: women and minority affairs; business and financial affairs; meetings; and publications.

The AADS is structured much like the ADA, with a central office and professional staff. There are individual and institutional members who come together annually for a meeting devoted to educational activities and policy development. The membership is kept informed through a journal, newsletter, and other communications.

A major difference between AADS and ADA, however, is the basis upon which members are grouped. The ADA is geographically structured by state and trustee districts. The AADS is organized in a more complicated, overlapping fashion. There are seven councils in the AADS: Allied Dental Program Directors, Corporate Members, Deans, Faculties, Hospitals, Students, and Sections. Allied dental education programs and hospital-based programs each have one representative. Every dental school has a representative on the Council of Deans and on the Council of Faculties. The Council of Students represents a cross-section of dental, postdoctoral,

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and allied dental students. There are forty sections in the Council of Sections, representing disciplines of dentistry such as anatomical sciences, biomaterials, continuing education, dental hygiene education, educational research/ development and curriculum, endodontics, practice administration, etc.

The AADS also appoints members to the ADA Council on Dental Education, the Commission on Dental Accreditation and its site visit teams, the Joint Commission on National Dental Board Examinations, and the independent Dental Assisting National Board.

The American Association of Dental Schools can be contacted at:

1625 Massachusetts Avenue, NW Washington, DC 20036-2212 Phone: (202) 667-9433 Fax: (202) 667-0642 Internet: aads@umab.umd.edu WWW: http://www.aads.jhu.edu

Mission

The mission of the American Association of Dental Schools is to lead the dental educational community in addressing the contemporary issues influencing education, research, and the health of the public.

AADS Objectives

- 1. To stimulate the production, exchange, and dissemination of ideas and information among dental educators, educators of other health professions, and educators in the community of higher education.
- 2. To study and investigate the educational aspects concerned with providing and maintaining optimal oral health care for the public.
- To communicate with the public, other health professions, and the community of higher education to improve their understanding of the importance of oral health in relation to the general health and well being of individuals and society.
- 4. To establish and maintain liaison with governmental and other appropriate agencies that may further the development, support, and improvement of dental education, research, and service.
- 5. To assume its major responsibility for the development of policies and standards used for the accreditation of dental education programs.
- 6. To advise and provide consultants and consultation services regarding dental education programs.
- 7. To promote the understanding and enhancement of human diversity in dental education.

Strategic Directions

- 1. To help assure the high quality of dental and allied dental education programs through the Association's leadership activities in the areas of curriculum revision and reform, professional development, accreditation, licensure and credentialing, continuing education, and quality assurance.
- 2. To stimulate innovative ideas and research that will lead to improved oral health for the public.
- 3. To make the public and the higher-education community aware of dental education's value to society and academia.
- 4. To expand and strengthen dental education's role in the academic health center, the university, and other institutions of higher education.
- 5. To promote the understanding and enhancement of human diversity in dental education.

History

Bombastic Ballyhoo: The Extraordinary, Advertising Life of Painless Parker

Eric K. Curtis, DDS, FACD

n 1917, San Francisco newspaper editor Fremont Older took a fancy to the flamboyant dentist Painless Parker. Parker's theatrical street pitches for outdoor dentistry had provoked a rash of malpractice suits against him in the city, as well as a sensational murder charge, and the newspapers were having a field day. But Parker claimed that the dental societies in the area, jealous of his success, were conspiring against him. Older, an anti-establishment political crusader, sympathized, and introduced Parker to local society by gaining him membership in a prestigious businessmen's group.

Sparks were bound to fly. When a well-known local dentist at one of the club's daily gatherings recognized Parker, the room went silent as he launched a verbal attack. The dentist denounced Parker as a threat to public health. "You know, Painless," the other dentist said as he raised his voice for the whole group to hear, "you really are risking your patients' lives by pulling [their] teeth on the streets. Although you may not know it, there are harmful microbes in the air..."

Parker was laughed out of the meeting, but he recognized an opportunity. Instead of limping home to lick his wounds, he went to a costume store and hired a man to dress up as a giant green bug. Parker walked the man back to the scene of his humiliation. "Gents," he barked, "you have just heard a learned discourse on microbes in the air from this so-called doctor. This noted scientist has told you that these germs can't be beaten by man. Well, I've gone out and brought back a bona fide microbe, and we will see if the doctor's theories hold water." As the astonished businessmen looked on, Parker wrestled his microbe. Although he had paid the man to lose, he was beaten in two noisy bouts. "Head for the exits," Parker yelled to the crowd as the microbe man pinned him to the floor for the second time. "That damn dentist was right all along!"

Who really was right? How should dentists announce themselves to the public? The story serves as a neat allegory, a sort of real-life morality play that illustrates the struggle to define ethical standards for dentists' public behavior. The question of professional advertising is especially complicated, and a handsome 1995 book by prominent dental historians Arden Christen and Peter Pronych meets it head on. *Painless Parker:* A *Dental Renegade's Fight to Make Advertising "Ethical"* is an exhaustive study some thirty years in the making that examines the life and times of the greatest advertiser of all — the dental showman born Edgar Randolph Parker (1872-1952).

"There is no such thing as bad publicity," media-manipulating real estate tycoon Donald Trump reportedly once said. Americans keenly sympathize with Trump's urge to be known, for, as Leo Braudy writes in his 1986 book *The Frenzy of Renown,* "We live in a society bound together by the talk of fame." Painless Parker likewise had an intuitive appreciation for the rewards of at-



Dr. Curtis is in private practice in Safford, AZ. He is a dental historian and editor of the Journal of the Arizona State Dental Association.

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Painless Parker, sporting a necklace of 357 teeth extracted in a single day, in San Francisco shortly before his death at age 80 in 1952.

tracting attention, any kind of attention. Often posing in a top hat and a necklace made of three hundred fifty-seven teeth he had extracted in a single day, Parker employed trumpet players, organists, mind readers, and jugglers and for several years, even an entire circus — to gather crowds for his sales pitches. One observer described the Parker advertising approach as a spectacle of "bombastic ballyhoo."

Parker pressed the boundaries of not just respectability, but legality. He frequently called himself an "outlaw" dentist, and in many respects he was exactly that. He worked first the East Coast and then the West, sometimes practicing without a license, often staying just one step ahead of the law. When a 1915 California bill was passed prohibiting the use of an assumed name for professional purposes, Parker appeared in the San Francisco superior court and had his first name legally changed to "Painless."

Indeed, Parker's notion of professional reputation meant mostly name recognition. His trademark strategies for advertising were exaggeration and repetition. An elderly woman who had once worked for the famed dental showman was asked what she thought of Painless. "Well," she answered at length, "he wasn't." It didn't matter to Parker that wherever he went, he stirred up storms of controversy. "When you stand up in a wagon or appear on a street corner and give a dental-hygiene sermon, some people will think you are crazy," he explained. "However, when you separate them from their cash, then who's crazy?"

Brilliantly anticipating marketing techniques that would become commonplace in other segments of American business, the relentlessly entrepreneurial Parker also franchised his operation. "You have to be organized, systematized, capitalized ... standardized, and specialized," he advocated. "These are the major principles of business economics." Multi-state Painless Parker clinics were opened, offering a predictable appearance and standardized care, with extended hours and low fees. Parker boasted that he "brought the cost of dentistry within the reach of the masses."

The system paid off handsomely. Parker lived luxuriously, acquiring mansions, real estate, fine automobiles. and a seventy-five-foot yacht that he sailed to Tahiti. By the early years of the 20th century Painless Parker was said to be as well-known as the president of the United States. As a result of his enormously successful advertising campaigns Parker's fame even transcended his business aims and passed into popular culture. He inspired at least two movies - the 1948 Bob Hope film Paleface and its 1968 remake, Shakiest Gun in the West, starring Don Knotts. The morose dentist in the 1972 hit movie Mash was nicknamed Painless in an irreverent nod to Parker.

It was precisely because of his fame,

however, that Parker's principles infuriated other dentists and even embarrassed his own family. For all his forward-thinking, bottom-line business savvy, Parker remained a dental anachronism. His brand of primitive outdoor exhibitionism was a quaint relic of the 17th century. Brash, reckless, arrogant, manipulative, and relentlessly self-aggrandizing, Parker nevertheless symbolized dentistry to many Americans. Unfortunately, he had a particularly narrow view of dentistry to offer them. "Ninety percent of the time, a dentist is nothing more than a mechanic," he proclaimed. "When he pretends otherwise, he is hoodwinking his patients." For their part, mainstream dentists whom Parker derisively called the "ethicals" - believed Painless Parker himself was blatantly deceiving the public with his claims of painlessly superior treatment. And Parker's celebrity made his attitudes particularly damag-



Cover illustration, January 16, 1919, issue of Life magazine, titled, "A Testimonial."



ing to a profession laboring both to become scientific and raise public esteem.

Ironically, Parker came to believe he was a "dental prophet" who was modernizing the profession. In a 1920 announcement titled "Two Kinds of Dental Ethics," Parker wrote, "Under oldstyle ethics, a dentist who advertised was a quack. The only way a dentist could be ethical was to sit tight, say nothing, and keep the masses ignorant. Under new-style ethics, it is a dentist's highest duty to advertise dentistry, so the people will know all about the dangers of bad teeth and the blessings of good teeth."

Even more ironically, Parker actually was a prophet. He forced the entire profession to examine questions of advertising and how the professions interface with society. His antics played a key role in the development of dental codes of ethics, state dental practice laws, and advertising practices among dentists. And much of what he championed — patient advocacy, increased access to dental care, and advertising itself — has come to pass in America.

Even organized dentistry in the last decade has begun experimenting with advertising. As Painless Parker himself asked, "If it's considered legitimate to use advertising to get a man to buy a suit which he may not need, why is it considered illegal to use advertising to get a man to buy dental health which he *does* need?" Whether such events as the California Dental Association's recent television and print-media campaigns represent either a vindication of Parker's message, or a repudiation of his methods, it's clear that honest, effective communication between dentistry and its public has never been more important.

Acknowledgement:

Photo illustrations are from the text of the book Painless Parker: A Dental Renegade's Fight to Make Advertising "Ethical" and are reprinted here by the permission of Dr. Arden G. Christen.

Painless Parker: A Dental Renegade's Fight to Make Advertising "Ethical" is available from Dr. Arden G. Christen, Department of Oral Biology, Indiana University School of Dentistry, 1121 West Michigan Street, Indianapolis, IN 46202, for \$24.95 plus \$3.00 shipping.

Statistics



Dental Workforce Projections

he American Association of Dental Schools (AADS) and the American Dental Association (ADA) collaborate in monitoring changes in the dental workforce. Significant policy turns on the numbers of applicants and graduates for positions in dental, dental hygiene, dental assisting, and dental laboratory technology programs. The data below are reproduced, by permission, from the AADS *Deans' Briefing Book - 1993-1994*. Readers were asked to comment on these data.



nology — while some recovery is apparent, the numbers of graduates is down significantly.

Individuals are attracted to dental hygiene today for the same reasons they were twenty-five years ago — a career offering some autonomy and mobility, and satisfaction from providing a service with reasonable remuneration — all without a great financial burden.

Will the many changes affecting dentistry today keep dental hygiene attractive as a career? Will graduates remain in the workforce? Some strategies for future workforce planning are suggested in the recent IOM study, *Dental Education at the Crossroads*. Perhaps acting now on these suggestions will prepare us to meet the oral health needs of the next century.

Hazel Torres, RDA

Retired program director and current member of the California State Board of Dental Examiners

The pattern of applications and enrollments in dental assisting programs shows a wide swing over the past

Dr. Phyllis Beemsterboer Director, Dental Hygiene Program Los Angeles City College

It is interesting to note the similarities in trends between dental and dental hygiene enrollment over the past twenty years. The downward slopes in the late 1980s were replaced by gains in applicants and graduates in the early 1990s. Data from the *ADA 1994-95 Annual Report* show the numbers of dental hygiene graduates at the same level as in 1983. The picture is not as rosy for dental assisting and dental laboratory tech-

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twenty years — but not as great as the fluctuations in dentistry or dental laboratory technology. While there are undoubtedly many reasons for these variations, I believe two main factors that kept qualified and otherwise interested individuals away were the HIV scare of the late 1980s and the relatively weak salaries for the assistant during that time.

Now that we are making some recovery, we can more clearly see dental assisting is a profession that will always attract people who are interested in service and caring. Many tried something else and they found there is no better career than health care.

But we have also discovered something not reflected in these numbers. The mean age of applicants to dental assisting programs increased by several years. Thus, dental assisting is a delayed career choice and a second or third career for many. The other lesson learned — it is easier to close programs than to reopen them. Dental assisting, along with dental hygiene and dental laboratory technology, are among the most expensive programs in community colleges, just as dentistry is expensive on a university campus. Administrators were accommodating in closing programs when interest was down. However, we are experiencing difficulty getting these programs back now that demand is rising. Better workforce planning is obviously needed.

Stanley L. Handelman, DMD Professor Emeritus Eastman Dental Center

The data on the increase in dental school applicants and stabilization of the first year predoctoral enrollment is straightforward and would indicate that dentistry is again perceived as an economically viable option for those making career choices. Another factor in the increase in applicants may be that other career options such as business, law, and teaching are seen as less favorable than in the past.

With the decline in enrollment, the continued high number of dentists entering specialty programs and concomitant decrease in qualifications of the average applicant, there was concern that dental schools would not be able to adequately train sufficient numbers and maintain the quality of general dentists

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for the 21st century. With the increase in the applicant pool and the growth of postdoctoral general dentistry education, this is of less concern.

The stability in enrollment and numbers of graduates in dental hygiene and dental assisting over the past two decades may be misleading since there may be a significant increase in the actual number of dental hygienists and dental assistants employed. The necessity and interest in women remaining in the workforce after marriage and having children would suggest that there may be an increase in the number of auxiliaries employed by dentists over the same time period. Data on the actual number of auxiliaries employed by dentists would be of interest.

[Editor's note: See the editorial in this issue.]

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