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FROM THE EDITOR

The Role of Patients in Dental Ethics

Question: How many people does it take to be ethical? Answer: More than one, and it helps if they have divergent self interests.

This is certainly a frightening prospect to those who have learned that ethics is a matter of individual conscience. And there is no real consolation in asking others who have the same point of view whether they agree. Let's imagine a scholar who received a large grant of money to study ethics in dentistry. He worked for many years studying right and wrong and died of exhaustion just as he finished his code. I would say this person might have been a good scholar, but I have no way of knowing whether he advanced ethics. First, those affected by the code had no knowledge it even existed. Second, there's no test of whether the world is better with the code than it would be without it. The same conclusions apply if the code had been written by a committee or if it had been published in a journal that is only read by scholars who could have done the work themselves.

Now let's consider an example closer to practicing dentistry. The dentist sits alone in her office after all the patients have left, pondering a particular case. Something wasn't quite right with the impression or the lab work and she had struggled to make it fit. The work was acceptable but the patient had expressed some misgivings about the whole procedure. Finally, the dentist phones the pa-

tient and offers to redo the procedure at no cost to the patient because she "just doesn't feel she has done her best work on that procedure." To her surprise, the dentist discovered the patient to be more upset at this suggestion than when he had left the office. He wanted a reduction in price because of the extra time he would have to take out of his architecture practice to have the work redone, and his original dissatisfaction was a result of what he considered to be pressure on the dentist's part to "sell" a more expensive treatment than was really necessary.

In this example the dentist's behavior is praise worthy in her own eyes, and perhaps in the opinion of most other dentists as well. But the behavior was not praise worthy to the patient, and it is not certain whether it was ethical behavior at all. Although the action was taken with the best of intentions, it was done in isolation and without consulting the true interests of the other parties involved.

It is fashionable to weave a statement about "putting the patient's interests first" into one's ethics code. As attractive as this sounds to me, as a typical patient and typical consumer of many professional services, it simply won't work. I can't remember the last time anyone asked me what my interests were; but I do get a fairly regular diet of messages telling me what my interests should be. An ethics code that says, "put the patients' interests first (as professionals define them)" comes pretty close to fulfilling the definition of paternalism.

"Putting the patient's interests first (as they are defined by the patient) is equally unworkable. The California Dental Association recently released the results of their survey of what patients and dentists consider most important in oral health care. Number one in the patients' mind, and well ahead of any other alternative was cost containment. Although there have been laudable initiatives on the part of dentists to make dental care more accessible to certain segments of the population, I'm unaware of any efforts on the part of organized dentistry to reduce the costs of overall care to patients or those who are funding patient care. In the extreme, doing what the patient wants is plain silly. Even after being fully informed of the consequences of their choices, some of them would ask for ridiculous or unhealthy treatment and would want it for free.

The Golden Rule—do unto others as you would like them to do unto you—suffers similar limitations as a foundation for ethics. There are some strange people in the world and I don't want them doing unto me anything like what I see them practicing as a lifestyle.

The problem with the various approaches to ethics I have just criticized is all in their being one-way. In each case the limitation comes from an individual or a group of people deciding what is best for others. Even when that is done with the noblest of intentions and when it is done in a way that one's colleagues would approve, it still denies the indi-

viduality and the opportunity for self determination in someone else. Inherently it cheapens the relationship no matter what ethical principles one might invoke.

One of the ingredients, then, in ethics might well be that no action will be withheld or taken that affects others without their having the opportunity to freely express how they feel about the consequences of the action. This is the very essence of informed consent. Such a conversation between dentist and patient might have helped in the earlier illustration of the dentist who congratulated herself on deciding to redo a patient's treatment only to find that the patient was dissatisfied with everything but the technical characteristics of the restoration. It is exactly the approach that recommends itself now to the profession for addressing the ethical issues in cost of oral health care. Equitable funding or oral health is not something for dentistry to decide and then announce to the public and the payers; it is an issue of great significance to many parties and they must be all given the opportunity to freely express their views and an equal chance of influencing each other.

Although it falls short of a definition, an important part of ethics seems to be the moment of grace when one drops the pride of superiority or the illusion of objectivity and realizes that others who are affected by our actions have the same right to express their feelings about the outcomes of mutually dependent behavior that we do. It should automatically be

unethical to refuse to listen to those whose future we affect or to attempt to coerce them. Historically, dentistry has been a powerful profession, and thus would be especially vulnerable to these problems. Editors are well aware of them.

Ethics is a community activity; it is also one which inherently embraces conflict. Heroes arise in troubled times. Discussions of the well-ordered social interactions of colonies of ants seldom turn towards ethical matters. Managed care, consumerism, the growth of an em-

We need three codes of ethics in dentistry.

ployee class of dentists, matasizing regulations, slow integration of women and minorities into organized dentistry, and the shift from therapeutic to cosmetic care provide an expansive field for ethical action. Who would want to restrict this field by denying that the problems exist or by assuming they can all be handled the same way problems were handled twenty or thirty years ago? Abraham Lincoln had something useful to say about this, "I don't like that man; I had better get to know him better."

Patients, the Federal Trade Commission, insurance companies, and other health professionals are all affected by what dentistry does. This means they have a role to play in making dentistry

ethical. They live in worlds different from the dentists' world which makes communication harder. But it is probably better to have communication of words than communication of confrontational action.

Dentistry has one code of ethics. It was written by dentists and is intended to cover all situations where ethical behavior is an issue. As good a document as it is and as typical as it might be for codes written by and for professionals, it is inadequate. We need three codes of ethics in dentistry. One of them would address the relationship among dentists themselves and would be written by dentists. A second would address the relationship between dentists and patients—the very heart of any profession. That should be written by patients and dentists together. A third code would involve the relationships between individual dentists and between dentists collectively as a profession and all other entities such as insurance companies, government, other professions, and the public at large. The creation of such a code would be a significant undertaking because of the great number of voices that would have to come to the table.



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



Letters to the Editor

Dear Editor:

The recent issue (Summer 1997) devoted to lawyers and dentists was great! The American legal system exists so that a civil redress of wrongs is possible instead of some sort of anarchic "self-help" (taking the law into one's own hands) alternative. The general idea is to compensate for unjust injury—that is to make the righteous plaintiff whole again (at least legally). However, a major problem is that U.S. defendants and their insurers have become the chief financiers of international tort R&D—forced to unwillingly underwrite the continual modernization of the common law. The resulting body of legal precedents is used both here and in other common law countries.

A glut of American attorneys combined with a costly judicial process (thereby encouraging "cheaper" out-of-court settlements) is part of the problem. A system like ours that permits a plaintiff and his attorney to sue with little more than nothing at risk except their time, sets the stage for a legal system that is loathed even more than it is misunderstood.

The British do it differently. If a defendant prevails in a civil proceeding, the plaintiff is stuck with the defendant's litigating costs. This threat of monetary

penalty to the plaintiff discourages the legal "fishing expeditions" for which the American Bar is infamous. Not surprisingly, lawsuits for negligence-based torts are far fewer in Great Britain.

Proponents of the American status quo argue that the British Rule exerts a "chilling effect" that would unduly restrict the ability of less-well-off U.S. citizens to sue. Furthermore, there is little doubt the British Rule retards the (needed) evolution of the common law. Yet, a reasonable question that we Americans should ask ourselves and our leaders is how much of our inefficient, largely non-productive and costly system we should continue to underwrite.

In my opinion, too many working Americans (including some dentists) pay big percentages of the outsized monetary and psychological costs associated with our well-intended but absurdly expensive civil court system. Others pay little or nothing while some look at the system as one more way to "play the lottery."

There must be a better way! America would do well to find it.

Yours truly,

Mike Rethman, DDS, MS, FACD
Kaneoho, HI

Dear Dave,

Thank you for publishing information about the pass/fail rates on dental clinical licensure examinations (June 1997 *News & Views*). After many years of speculation and innuendos, the public deserves the facts as they exist.

Please keep up the wonderful work you're doing with the *ACD Journal*. You have brought to that periodical a level of intelligence and intellect that is unrivaled.

Kindest personal regards,

Don-N. Brotman, DDS, FACD
Baltimore, MD

Introduction to Theme Issue on Financing Oral Health Care

The Woods Hole Group, aided by a grant from the Kellogg Foundation, was organized with the mission of having knowledgeable people from a variety of backgrounds in oral and general health care practice and policy study and evaluate changes occurring in the delivery of dental care. Reimbursement of the dental provider is but one facet of the study. Predoctoral education, student indebtedness, access to care, and quality and cost of care are some of the other agenda items being deliberated by the Group.

Findings and recommendations of the Group, upon completion of its studies, will be widely reported through the dental literature and through presentations. It is our hope that necessary and rational discussion of oral health care policy will be stimulated by this.

The papers by Steven Bader, DePorter, Douglass, Guralnick, Hunter, and Ryan were presented at the first meeting of the Woods Hole Group in Boston in April 1997. A paper on direct reimbursement, presented by Dr. Kevin McNeil was not submitted for publication, although the Group feels that the official view of the American Dental Association must be considered in assessing dental care reimbursement policy.

Dr. Walter C. Guralnick
Professor of Oral and Maxillofacial Surgery, Emeritus
Harvard School of Dental Medicine

Editor's note: The other articles appearing in this issue, those written by Jim Bader and Dan Shugars, by Cornelis van der Wal and Cathye Smithwick, and by Dick Wilson, are similar in theme to the Woods Hole papers, but were submitted independently and passed through peer review separately.

Quo Vadis?

W.C. Guralnick, DMD

Abstract

Despite the shift in third-party dollars for dental care to dental managed care payment systems because of payers' perceptions that they are more cost effective, significant segments of the population still have no access to oral health care. Costs to consumers continue to rise faster than the economy, generally placing pressure on the profession. The accelerating cost of dental education places pressure on young practitioners. It is unclear whether organized dentistry or market forces will have the strongest influence in addressing these problems.

Whether it is called transformation or corporatization, the delivery and financing of dental care is rapidly changing. I will cite a substantial body of evidence to support this statement. As a beginning, consider the fact that there were 7.5 million members enrolled in managed dental plans in 1990, in 1996 the number had grown to 23.7 million. Their distribution is interesting. Sixty-seven percent were in the top ten DHMOs. The National Association of Dental Plans (NADP) trade group estimates that there will continue to be a 15% yearly increase in managed care enrollment. Patients are, obviously, either choosing or being directed into managed care plans. The direction of the enrollment side of the dental care equation seems clear while the provider side remains interesting but ambiguous.

Can Fee-For-Service and Indemnity Handle the Job?

There are approximately 150,000 dentists in the U.S., of whom 105,000 actively practice. Of these, 27,000 currently participate in managed care plans and another 10,000 in PPOs. Almost 70% of dentists are in solo practice, a mode that has been sustained by individual preference, the historical dominance of indemnity insurance, and the tradition of out-of-pocket, fee-for-service payment by a large proportion of dental patients. Does this traditional situation still exist?

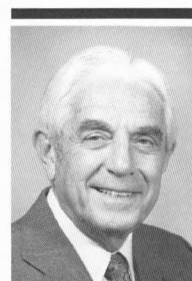
Solo practice is coming under more and more critical scrutiny for at least two reasons. Dental students graduate with such enormous debt that opening an office, which was in the past the customary way, has become financially impossible for many (if not most) recent graduates, and, additionally, the reality of office overhead. Patients are, obviously, either choosing or being directed into managed care plans.

What about indemnity insurance as a principle mainstay of fee-for-service practice? The facts are that as DHMO enrollment has increased, the FFS share of the market has decreased from 41.7% in 1994 to 31.4% in 1996. The cost of one when compared with the other has been a major influence upon employers switching from indemnity to managed care. According to a Foster Higgins report, "Dental benefit costs continued to rise for the fourth year in a row in 1996 and have climbed more than 30% since 1992...Overall health benefit costs, in contrast, have risen just under 12% during the same time period. The combined effect is likely to aid growth of dental managed care."

Managed dental care and dental HMOs are priced 30-50% lower than indemnity dental plans according to the January 1997 issue of *Pulse - Analysis*. The cost advantage was bluntly explained in these words by Dr. Marvin Zatz, a Prudential Vice President, "lack of interest in anything but cost points employers toward HMOs." David DePorter, Vice President, Dental Care Management, CIGNA Dental, agrees with the importance of price, but adds a substantial amendment to Zatz's statement, saying, "Cost was the driver in the past but tomorrow it will be cost and quality."

In the introduction to a monograph, "The Managed Dental Industry: Today and Tomorrow" by Sheila Moldover, Gutman, its publisher wrote, "What we do know, however, according to a survey conducted by benefits consultant William M. Mercer, Inc. in late 1995, is that more than half the companies that offer only fee-for-service benefits to their employees planned to switch to managed dental coverage or add it as an option by the end of 1997."

There are other tangible developments which have begun to affect the financing and practice of dentistry. The merger of managed care companies, often through acquisitions, has brought



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new capital into the dental market and increased membership. As an example, Comp Dent Corp (of Atlanta) added almost one million members to its rolls in 1996 when it acquired Chicago-based Dental Care Plus and Texas Dental Plans. Such large membership gives a company access to capital and, along with that, the ability to market and grow in a way that is denied small organizations.

Granger Vinall, President of Dental-Net of Arizona describes his seeking venture capital in these enthusiastic

Cost was the driver in the past but tomorrow it will be cost and quality.

words: "I've never been this popular. I feel like the prettiest girl in town." His remark reflects the awakening of venture capital to the profit potential in the annual \$45 billion-plus United States dental market. Moldover described the investment community's view in more modest terms, but with equal optimism. She wrote, "The financial markets continue to feel confident that managed dental companies remain good investments." She further noted that analysts in some investment houses feel that dental stocks are less of a risk than medical HMOs, principally because in dentistry there is no "catastrophic risk" such as in by-pass surgery.

A logical corollary to the sanguine attitude of venture capital is the relatively recent entry into the managed care dental marketplace of the dental practice management company. The DPMC is a product of venture capital, and such companies have been sprouting up all over the country. Two New England firms are examples of the genre. One is American Dental Partners with headquarters in Wakefield, Massachusetts, which currently manages the practices of one hundred and thirty dentists. It began operation in 1995 with \$30 million in

venture capital funding. Another is First New England Dental Centers which, after eighteen months of operation, now manages thirty-three dental offices, mostly in Massachusetts, but with a few in Rhode Island, Vermont, Connecticut, and New Hampshire. Its target is much broader and it is presently awaiting approval to issue stock. The thrust of the DPM is to consolidate a "cottage industry" and provide it with the efficiencies and financial advantages of an expertly managed large corporation.

Another significantly large segment of the population that is increasingly subscribing to managed dental care is covered by Medicare and Medicaid. A number of HMOs are attracting Medicare patients by offering dental benefits at no additional cost. Next to pharmaceuticals, dental care is the most desired benefit of HMO subscribers. Pacificare's Secure Horizons and Kaiser Permanente's Senior Advantage programs are examples of HMOs which have each enrolled 150,000 Medicare members in their dental HMO programs. Considering the fact that Medicare covers thirty-seven million aged and disabled individuals, 14% of the country's population, the size of this potential dental benefit market is awesome.

Despite the fact that, as already noted, millions of patients have access to care, the profession must acknowledge that this is not a universal situation. Approximately one half of our population, 139 million people, have no type of dental insurance. Some of these can pay for their care themselves, but the majority cannot. The damage to oral, and even general health, due to lack of professional dental care is highlighted by Eklund's report in the February 1997 *Journal of the American Dental Association* "Trends in Dental Care Among Insured Americans: 1980-1995." The author concludes that "the patterns of dental care among a large group of insured people show clear trends during the past fifteen years that suggest profound improvement in oral health. The challenge remains to extend these considerable gains in oral health to the ma-

jority of the United States population who do not have dental insurance." Eklund's study reinforces the importance of accessibility as well as financing and reimbursement. To do this we must pose the question: "How are organized dentistry and practicing dentists reacting to change?"

The American Dental Association's view is expressed in its sponsorship of direct reimbursement, an indemnity insurance plan. Dr. Gordon J. Christensen presented the ADA's position in a paper "Educating Americans About Dental Care Benefits" in the February 1997 *Journal of the American Dental Association*. He boldly states, "Dentistry has had a long history of excellent service and cost containment in the private enterprise system. The dental delivery system in America is not in need of major change. Health maintenance organizations, preferred provider organizations, and similar groups have had easy access into other parts of medicine because of the need to contain costs and the catastrophic nature of some medical problems. Dentistry does not have either of these problems."

If most dentists agree with Christensen's doctrine, change will take

The result of physician indifference to obvious problems has been the present frenetic bottom-line driven health care system.

place, probably at an accelerated pace, without involvement and guidance of the profession. David Nash, writing in the *Journal of Public Health Dentistry* (Special Issue, 1996), points out the danger in being a bystander. "Those individuals who believe we will preserve the current circumstances in the profession of dentistry—the status quo—whether they are practitioners or educators are, to use a term of natural science, 'Neanderthals!'"

He further suggests that "Burying our heads in the sand and hoping for change to stop,...is not only foolish, it is deadly." The same thought was simply expressed by Zayra Calderon of CIGNA in these words, "will the dentist be at the wheel [of change] or just be a passenger?"

What I believe to be most important is for us to learn from medicine's experience during the past fifteen or twenty years. The medical profession ignored the public's cry for cost control, easier accessibility, and simplification of the health care process. Because the period since World War II, and particularly since the enactment of Medicare in 1965, was a boom time for physicians, little attention was given to the need and desirability of some practice changes. The result of physician indifference to obvious problems has been the present frenetic bottom-line driven health care system that has major deficiencies for both physicians and patients. Dentistry still has the opportunity to be a major voice in structuring a system of oral health care that improves upon the current base.

Student Debt and Trained Auxiliaries

I have focused upon some of the changes taking place in the dental marketplace and described some of the "products" being used for reimbursement. There are two other factors which need to be considered in discussing dental practice. One is the enormous expense of dental education and its result-

ing student debt. Aside from the worrisome financial situation of schools, most students have an equally grave financial problem. At Harvard, for instance, graduating seniors customarily leave with a debt of \$100,000 or more which influences future plans and goals. The need to pay off such debt has, in some cases forced graduates to work as hygienists or take jobs as independent contractors in

Solving the student debt problem is not easily accomplished.

offices with less than ideal standards. The question is, what can be done to help?

I believe there are at least two ways to mitigate the problem. One is the establishment of an Educational Opportunity Bank. Funding of the bank could be sought from several sources. One is the government, both Federal and State, which would have to be convinced of the need for and desirability of supporting dental education. Another source consists of dental school alumni, private individuals, and foundations. Another potential funding resource is in group practice. If group practice becomes more of the norm ("group" herein defined as a "sharing" organization rather than an entrepreneur's business), young graduates could be accepted with the un-

derstanding that the group would help pay off their debt by withholding a specific percentage of the individual's earned income. This is, in a sense, a variant of the Educational Opportunity Bank plan.

Solving the student debt problem is not easily accomplished, but it must be considered in discussing the future of dental practice. Dr. William S. Ten Pas, when President of the ADA, expressed the same view in the November 1996 *Journal of Dental Education*. He wrote, "A growing concern for the profession is the increase in debt among dental students. We believe indebtedness affects all aspects of dentistry and we should acknowledge it as a problem in order to find solutions for students."

The final matter to which we should give some thought, politically sensitive as it is, is the training and use of extended duty auxiliaries. The fact that lay people can be educated to perform certain duties well, under the direction and auspices of a practicing dentist, has been demonstrated and proven both here and abroad. Medicine was as resistant as dentistry to the idea of extended duty auxiliaries, but has appreciated their effectiveness and helpfulness and now uses physician assistants and nurse practitioners to good advantage. The Institute of Medicine's report on dental education significantly recommended that dental educators "continue efforts to increase the productivity of the dental work force, including appropriately credentialed and trained allied dental personnel."

California and Dental Managed Care— State of the State

Richard B. Ryan

Dental Management Decisions was recently commissioned by the California Dental Association to provide a statistical perspective or overview of the dental managed care marketplace within that state. That paper will become a part of the CDA's much larger new business curriculum headed by Temple University. The program was unveiled to CDA membership at the CDA's April 1997 Scientific Session in Anaheim. The CDA's plans are to create a practice management business curriculum, with some educational attention or emphasis placed on dental contracted care. The project will be an annual commitment by the CDA and available to all CDA membership.

While the research paper prepared for the CDA is their exclusive property for purposes of their educational program, there are certain statistical findings that are simple fact and are of public record. The following represents a small excerpt from Dental Management Decision's research paper.

California presently has 19,000 practicing dentists. According to the best estimates there are currently 6,100 dentists in California (32%) who are participating as providers of dental HMO programs. There are approximately 9,000 general dentists and specialists (47%) who are providing contracted care for one or more dental PPO programs.

It is important to point out that many of those participating in PPO programs may also be participating in dental HMOs; so the number of doctors participating in managed care is not the cu-

mulative total of the above figures. Best estimates indicate that approximately 11,000 dentists in California (58%) are contracted with at least one HMO or PPO plan (excluding those 17,500 California dentists or 92% who are contracted Delta Dental members).

There are approximately thirty-two million people residing in California. Of this number, about twenty million (62%) are estimated to have some type of dental coverage. The table shown on this page is an approximation of these insured individuals.

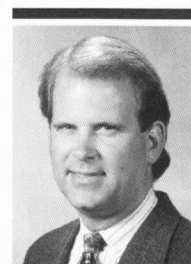
It should be pointed out that the above totals exceed the previously stated twenty million insured in California, and similarly, the market share exceeds 100%. The reason for this, and historically the difficulty in obtaining accurate benefit statistics, is primarily attributed to the indemnity and PPO figures. The nature of a PPO benefit is that the patient may, on any given day of the week, be one benefit type or another. For example, a patient today receives treatment from his or her family dentist who is not a PPO provider and therefore the patient receives "indemnity benefits." Next week that same patient decides to receive additional care and accesses a PPO provider dentist. The patient is then counted as a PPO member. The same patient is counted

Plan Type		
Traditional indemnity	3,100,000	15.5%
Delta Dental (Premier)	4,900,000	24.5
Delta Dental (DentiCal)	4,900,000	24.5
Dental HMO	6,400,000	32.0
Dental PPO	2,300,000	11.5
Non-risk referral plan	400,000	2.0
Total	22,000,000	110.0%

twice—as a traditional insurance patient and as a PPO member.

Similarly, there are a large number of California employees or insured individuals who belong to a two-income family, and thus may have dual insurance coverage. In other words, an individual may be counted twice because he or she in fact has both a managed care and a traditional indemnity insurance plan, possibly through a spouse.

In summary, the best numbers available indicate that traditional indemnity and Delta Premier coverage collectively represent eight million lives and 40% of the market share. Managed care programs (HMO and PPO coverage) presently represents 8.7 million lives and 43.5% of the market.



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The Future of Dental Benefits

David J. DePorter, DDS, MS, MPH

Abstract

The past twenty years have seen dramatic growth and consolidation in DHMO and PPO segments of the dental benefits industry. Purchasers and patients are becoming more vocal in their demands, primarily for controlling costs. It is predicted that emerging trends will include greater emphasis on quality (and its relationship to cost) and on dental practice management companies. It is less clear what role organized dentistry will play in these changes.

The dental benefits industry has gone through a considerable change over the past five years.

Based on these changes, the current status of dental benefits, and the trends we are observing as we look to the future, the dental benefits industry will undergo even more dramatic shift than we have witnessed in the past. A careful study of dental HMO (DHMO) and dental PPO growth numbers and trends, helps to form the conclusion that the majority of privately insured patients will be covered under a DHMO or PPO benefit plan by the year 2005. Purchasers of group dental plans, employer benefits consultants, and consumers continue to show their readiness and eagerness for the change to network-based dental plans. The marketplace will continue to evolve and adapt. A key question that remains is whether dentists and organized dentistry will play a role in helping to shape the new world of dental benefits or will they remain an unattached observer or detractor, missing the opportunity to help determine their destiny.

Change Drivers Are in Place to Remold Dental Benefits

Out of the total U.S. population it is estimated that about 177 million are offered a dental plan through private or public insurance. Of the 177 million, 117 million are currently covered through group dental plans. In addition, 26 million Medicaid participants have dental benefits and another 30 million are eligible for dental coverage through Medicare. There are also another four million with coverage through other means. Among those with private insurance, coverage types continue to evolve toward network-based plans. According to a recent Tillinghast-Towers-Perrin survey for the period of 1994-1995, fee-for-service dental plans declined 11.20%, while dental PPOs increased by 16.20% and dental HMOs increased by 14.40%.

Currently, 34% of privately insured dental plan participants are enrolled in an HMO or PPO plan. Of the 117 million privately insured individuals, 17 million are enrolled in PPOs and 22.8 million are enrolled in DHMOs. Dental HMO enrollment has nearly tripled in the past five years, according to a recently completed study by the National Association of Dental Plans, from 7.8 million in 1990 to 20.6 million in 1995.

Employers are either adding managed dental plans (both DHMOs and PPOs) to their benefit packages or switching to the managed plans entirely, and at record rates. According to William Mercer, Inc., seven of ten dental managed care programs currently in place were added between 1990 and 1996. Mercer also indicated that this migration will continue.

While 61% of employers did not offer a managed dental plan as of the end of 1995, Mercer predicts that number will shrink to 36% by the end of 1998.

Why the change? Employers are looking for value. Sixty-five percent of employers who added a managed dental care program in the 1990s cited cost as the primary reason. Increased benefits were a secondary reason.

Studying the Game

To understand the impending market changes, study the "game film." A study of the evolution of the medical market offers a keen insight to the future development of the dental benefits industry. The successful players in tomorrow's market will study the medical "game film," learn important lessons, make critical adjustments applicable to the dental industry, and implement changes more rapidly than the industry has experienced previously.

In the medical benefits market, we saw that HMO enabling legislation in 1972 led to the development of the first medical HMOs. Many of those first HMOs were small and primarily doctor capitalized. In 1982, U.S. Health Care became the first publicly traded HMO which led to the resurgence of small public companies (IPOs). Following the growth of IPOs came the growing wave of consolidations.

As the consolidation boom led to bigger entities, the regionals became super-regionals and some national players disappeared. The next phenomenon to ap-



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pear was the medical practice acquisition era that started in the middle to late 1980s and continues into today, although at a less aggressive rate.

Medical benefit demand from purchasers of benefits, benefits consultants, and consumers began to shift from a "pure" cost-based decision to a combination of quality and cost advantages by the mid '90s. This has been accompanied by efforts to demand a sharp focus on wellness, outcomes, and other quality measures.

Applying the Lessons

The future of dental benefits lies in the ability to apply lessons learned from the "game film." Managed dental plans (primarily DHMOs) were started in the 1970s and early 1980s by both dentist and non-dentist entrepreneurs. These DHMO plans were locally based and many were built exclusively for unions or individual employers. In the mid-to-late '80s, larger regional and national plans emerged. Large national indemnity carriers

Purchasers and consumers know what they want—value demonstrated by measurable outcomes for lower cost.

ers like CIGNA and Prudential entered the business in 1984 and 1985 respectively.

In the mid '90s, alliances developed between regional dental plans and indemnity carriers to offer dual-choice products. This has been rapidly followed by the consolidation of dental plans through acquisitions and mergers. At the same time, the large, national carriers began offering a full range of dental benefits: HMO, PPO, and traditional indemnity plans.

As we approach the end of the '90s, two additional trends that developed in the medical plan industry have begun to proliferate in the dental plan industry. First, the acquisition of dental practices

by dental practice management companies has begun and is growing at a meteoric pace. The impact of this change to the practice of dentistry will be dramatic, shifting the focus of dental care delivery from a solo practice mode to one of a group systems focus. Second, group purchaser demand for quality and cost advantages, combined with wellness and outcomes measurement demands continues to reshape the way dental plans operate, dental benefits are designed, and dental practice is conducted.

Transformation is Current and Inevitable

Radical change is taking place in the dental market. The available capital and other resources that were once tied up in bringing medical costs down are now directed toward the dental benefits industry. The knowledge gained from the medical experience means change will happen more quickly, more dramatically. Purchasers and consumers know what they want, and when it comes to managing their health care costs, they will use their leverage to get it.

With a more knowledgeable market, dental benefits entities will be transformed from administrators of benefits to advocates of quality and outcomes, while still producing significant cost savings as compared to current plan offerings. Buyers of dental benefits, who continue to become more discriminating in their purchasing decisions, and consumers, seeking and gaining more knowledge of treatment cost and efficacy, are quickly moving from silent obedience to active participation in treatment decisions. The sophistication of the consumer (the patient) will continue to drive change, both in the dental benefits arena as well as in the manner in which dentists practice and communicate with their patients. For both the group purchaser and the consumer, the catch phrase has become "value demonstrated by measurable outcomes for lower cost."

A big remaining question is what role will the dentist and organized dentistry play? Will dental professionals learn from what happened in the medical industry and assume a responsible role for shaping

the architecture for the integrated delivery system of the year 2000, or will they be passive participants and abdicate the responsibility for change to the market? This is a most important decision and important moment for the dental profession.

The National Association of Dental Plans estimates that over 37,000 dentists are currently participating in managed care plans (DHMO and PPO). Dentist participation in these plans is expected to

A big remaining question is what role will the dentist and organized dentistry play?

exceed 60,000 over the next five years, a milestone of critical mass. While organized and individual vocal resistance to managed dental is at an all time high, the change toward more managed dental benefits accelerates due to marketplace forces. The American Dental Association has dedicated millions of dollars both to promote federal and state legislation to weaken managed dental care and to sponsor direct reimbursement financing of dental care. Neither of these two efforts respond to the market, and they demonstrate an unfortunate sign that the change may occur despite dentists, rather than as a proactive, joint effort between all the players.

Fortunately, other professional dental organizations perceive the benefits of managed dental care and are helping to lead the charge. The American Dental Hygiene Program Directors Conference this year had a feature presentation and discussion on managed care and dental hygiene. The American Dental Hygiene Association recently came out with a bold document entitled "Position Paper on Managed Care," which clearly promoted the synergistic relationship between the preventive focus of managed care programs and clinical dental hygiene.

Dental education also has an opportunity to play a key role in the changing

nature of dental care delivery and dental benefits. Although dental education has a history of traditionalism and inflexibility, there are some signs of a potential change of direction. In 1995, the Institute of Medicine noted that "dental educators—individually and collectively—have important choices to make. They may attempt to preserve the status-quo—in effect, a path toward stagnation and eventual decline." This same study further recommends "to prepare students and faculty for an environment that will demand increasing efficiency, accountability and effectiveness, the committee recommends that the dental students and faculty participate in efficiently managed clinics and faculty practices."

Many of the nation's dental schools are now incorporating curriculum changes which include significant time relative to the business aspects of den-

tistry and realistic discussions about managed care. Failure to do so would be a serious error and disservice to the students and dentists of the future. Several dental schools have also established contracted provider relationships with managed care organizations for both their faculty clinics and their post-doctoral residents.

The Path to 2002 and Beyond

The future path of dental benefits, and even that of dental care delivery, is predictable. Managed dental plan offerings will proliferate and evolve. Dental HMOs and PPOs will dominate the dental benefits industry, although indemnity-type dental plans will remain for a few employers. This evolution and growth pattern will be fueled by the emerging change toward group and group-systems practices fostered by dental practice

management companies and dental service organizations (DSO). These integrated primary care delivery systems, IPOs and mini-IPAs have a market-specific focus.

The growing awareness of purchaser and consumer demand for outcomes measures and treatment protocols and standards on the part of dental benefits organizations and DSOs will foster new relationships to meet market demand and drive a more standardized and measurable approach to delivering dental care. Drivers of change and active participants in setting the future direction of dental benefits and dental care delivery will help fulfill the demands of an evolving and more demanding market. Those who yearn for the days of yesteryear or who remain passive as the market changes will simply be left by the wayside.

Delta Dental Plan of Massachusetts' Perspective on Financing

Robert E. Hunter, DMD

Abstract

The continually increasing costs of dental treatment have stimulated searches for alternative means of financing care. Cost has also raised questions about the definition of quality in oral health. Payers are beginning to evaluate alternatives based on prevention and health outcomes rather than volume of treatment delivered. Not-for-profit organizations, such as the Deltas, have a proactive role to play in this search for alternatives. In the end, it is the combination of market forces which will shape both how dentistry is financed and how it is defined.

What Do We Find in 1997?

Purchasers are concerned with cost, cost, and cost—according to a 1996 Mercer Meidinger study. This study of the market revealed that cost was the most important influence of a buying decision, with access and quality of care far down the road. The facts speak for themselves. Figure 1 compares the percent increase in dental CPI to the CPI for all items. The percent increase of the dental CPI has consistently outpaced the CPI for all items. Figure 2 demonstrates that the dental Health Insurance Trend Model (HITM) has, for the years 1994 and 1995, been twice the medical HITM. Dental care is a small, but costly, part of the overall health care burden and thus needs to be a part of the solution.

How long can American corporations compete in a global economy paying health care costs second to none? The challenge for dental insurers is to influence the reengineering of the American dental care delivery system. Delta Dental Plan of Massachusetts does not see its role as defining the changes, but rather as influencing a change to evidence-based treatments, continually modified by scientifically validated outcomes studies.

The aggregation of dental practices is beginning to take shape here in Massachusetts. Four different venture capital backed companies are bringing professional management to dental care delivery. The question is, can they make a significant difference in reducing costs in a system that has most of its providers (78% in solo practice) operating at an average of 33.2 hours per week? They certainly think so, as they aggressively aggre-

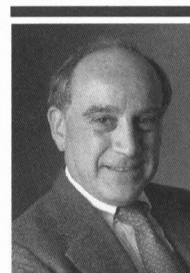
gate in Massachusetts and elsewhere. Will reduced costs mean lower consumer prices or merely higher corporate profits? Can we extend access to the Americans without insurance—92% of the poor, 85% of the elderly, 68% of African-Americans, and 61% of Hispanic-Americans—from savings generated?

Managing Care or Managing Health?

We at Delta Dental Plan of Massachusetts believe that in order to deliver cost-effective, appropriate care aimed at maintaining the oral health and function of the patient, the dentist must play a key role. Is that happening today? Not at all. Today the dentist is compensated primarily for performing treatments, not managing health. The elements of managing health include risk assessment through means such as diagnostics to determine *streptococcus mutans* levels, anaerobic activity in the periodontal sulcus, and the body's immune response. Radiographs, oral examination, general health status of the patient, past caries activity, and age, among the other criteria, will shape the treatment plan. The first step in manag-

The anchor for many successful companies is their mission statement. Do they have a compelling *raison d'être*? Can they give employees incentive to move beyond the usual? Delta Dental Plan of Massachusetts, in its ten years of self-operation and administration, has not only survived but excelled in a market composed of large insurance corporations competing for benefit dollars. Its mission is:

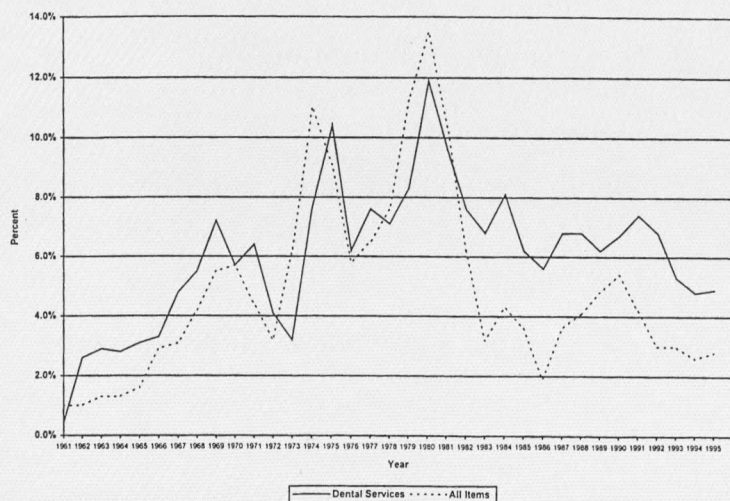
- To improve the oral health of the residents throughout the regions in which we are authorized to operate by providing needed dental care to more people at a reasonable cost through service and managed care benefits provided by participating dentists
- To pursue related growth opportunities within our area of expertise.



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Financing Oral Health Care

Figure 1
Percent Increase from Previous Year of CPI of All Items and CPI of Dental Services



ing health is to heal the patient; reduce or eliminate *strep mutans*; remineralize the tooth; use sealants, varnishes, and other non-invasive procedures; and reduce or eliminate periodontal pathogens. Then, proceed to repair damage in the best, cost-effective manner before proceeding to elective procedures. The patient will then be ready for a vigorous maintenance program that includes behavior modification, diet modification, etc. Currently we believe that wellness programs can be instituted at the workplace to sustain and support the maintenance of good oral health. With the help of dental researchers, academics, and practicing dentists, this type of evidence-based diagnosis, treatment, and maintenance can be defined. It will take time and effort and coordination among payers, providers, researchers, academics, and the patient to achieve results in this wellness model of care.

Defining "quality dental care" usually evokes different (and often emotional) responses from various audiences. The dentist will speak of technical evidence; the insurer will speak of cost efficiencies; the payer will speak to healthier, more productive employees. At Delta Dental Plan of Massachusetts, when we speak about quality care, we look at the life

cycle of a tooth. A virgin tooth today that in twenty years is:

- Still a virgin tooth equals success and represents quality
- A one-surface filling indicates that something failed which equals less quality
- A two-surface filling shows a bigger failure, equaling even less quality
- A crown represents a huge failure and equals poor quality

- An extraction is the ultimate failure, no quality.

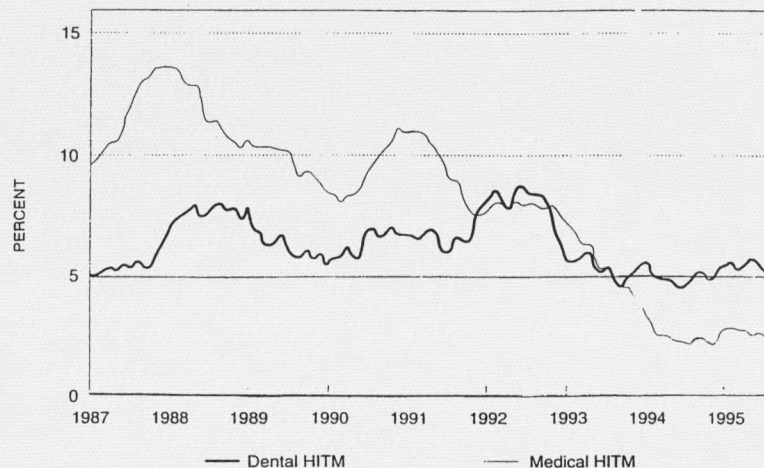
Thus it may be said that the need for a technically proficient crown represents a failure, not a success. But of course, this is not to demean the ability of dentists, but to change perceptions from treatment to the wellness model. It is necessary to digress to discuss responsibility. Regardless of how well the dentist diagnoses, treats, and educates, failure can and will occur. The patient must accept the responsibility to achieve health. The payer must allow time and place for wellness programs at the workplace. The insurer must provide these programs as well as design benefit plans that reward patient responsibility and provider responsibility yet also benefit the payer/purchaser.

What is the Role of Not-For-Profits?

I feel it is necessary to comment on the not-for-profit status of Delta Dental plans. This tax-free status is used by government to encourage actions not generally found in the commercial market place. The first Delta Dental plans were formed to meet the needs of a Pacific Coast longshoremen's union that wanted to provide dental benefits to their mem-

Figure 2
Annual Percent Change of 12-Month Moving Average

Source: Health Insurance Trend Model, Published by Milliman & Robertson, Inc.



bers. The commercial carriers did not see this as a viable market so the unions sought help from practicing dentists who then formed the first Deltas in California, Oregon, and Washington. Delta, as a not-for-profit, is not taxed on the federal level, nor by most states. There are no shareholder-owners, therefore, no dividends nor profits are expended. There are stakeholders: the members/subscribers who have the insurance, the payers/purchasers who decide to make the benefit available to employees or members; the dentists/providers who agree to participate in the plan and give needed care to the members; the regulators (usually the Division of Business or Insurance of the enabling state), who ensure that the fiscal state and the policies of the insurer, are sound. This type of not-for-profit is a change agent set up by governments to bring needed services and products to the market. For example, some of the state of the art military systems have been designed and built by not-for-profits. They channel resources not expended on profits or taxes into research. For us at Delta Dental Plan of Massachusetts, this means engaging in development of standards of care, treatment protocols, and outcomes studies—metric developments necessary to define quality in dental care. If you can't measure it, you can't

determine quality, appropriateness, effectiveness, or efficiency of care.

Who Will Participate in the Solution?

The health care market is searching for a solution to the problem of runaway costs that contribute, for instance, more to the cost of an automobile than the steel from which it is made. The market never loses; it always wins. Someone will provide a satisfactory solution, probably arrived at by consensus of payers, providers, and subscribers. There is a huge demand for dental care, albeit appropriate care. Dental benefits are usually

Change will be driven by information technology.

found in the top third or fourth most sought after benefit by employees. Dentistry has a bright future for the insured and the provider who can put the right pieces of a solution together at a price point that is competitive. It will drive the change—that is, the reengineering of dental care delivery. It is not a question of if, but rather when, it will happen.

This change will be driven by information technology—information de-

rived from vast data bases many insurers currently have but cannot access. Data warehouses are being built that will yield the information needed to define and measure effective and appropriate care. New delivery organizations such as the professional management companies, now forming, will emerge. New payment incentives for dentists will be developed, giving a reasonable standard of living to a caring professional.

Dentists strive to maximize income, and that is not un-American. Insurers influence dentists' behavior by how they pay for treatment. Can we not also influence this behavior by paying for health? Purchasers want to minimize expenses—nothing wrong with that either. They must compete in a global economy. The market solution to those seemingly opposite positions will emerge based on scientifically proven, measurable protocols of treatment.

In closing, it is insightful to review a quote from a leading dean, extraordinary provider, and innovator of dental care. "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."—G. V. Black, 1895.

Group Practice vs. Solo Practice— A Dentist's View

Steven Bader, DMD

Abstract

The percentage of dentists joining group practices has increased sharply in the past fifteen years. Many advantages to practicing in a group setting including social, clinical, and financial aspects have contributed to this change. Solo practice has become increasingly difficult for new dentists. Market forces as well as insurance changes have accelerated the transition to group practice. Multispecialty groups have particular features that have allowed them to become much more popular. The advent of dental practice management companies has fueled the growth of multispecialty groups and has created new business opportunities for dental practice owners.

Dental students learn to make diagnostic and treatment planning decisions with the help of our peers and more learned superiors. Although the coordination is not always the smoothest, dental school is certainly the ultimate multispecialty group practice. It seems unusual that the overwhelming majority of dentists graduate school and choose to practice in a solo environment. It sounds so constricting; so limiting.

My personal background is very analytical, with a chemistry degree from MIT and my DMD from Harvard. I also have several years of retail sales experience in electronics in New York City. I like to think I learned how to solve problems

rather than how to memorize facts. Although I considered private practice and teaching positions, I had the opportunity to be a part of building a whole new concept of dental delivery in 1982, and I found this very intellectually stimulating. It has kept me clinically and financially interested for fifteen years. My first dental position involved designing, equipping, and staffing an office to deliver high quality, traditional, personalized multispecialty dental treatment within a Sears store. My group felt that it was the dentist who created the practice, not the location. We also felt that the multispecialty group practice provided the most intelligent, convenient, and efficient model for delivery of dental treatment.

In the solo "traditional" practice, one doctor works alone with the support of trained auxiliary staff. If the doctor has gained some practice experience as an associate or in a GPR, he or she may have developed adequate technical skills in some areas. The dentist will take some number of required continuing education courses and will decide when to complete a procedure or when to refer it to a specialist. He or she will choose some referral partners based on reputation, some based on the number of patients they refer, and some based on their golf scores. But most importantly, he or she will learn many of the most critical lessons by making mistakes. Experience will come primarily from personal success and failure.

In the multispecialty group there is a hierarchy of practitioners similar to a network of hospital providers. At my first position, with one year of GPR experience, I was clinical director of a

group of seven doctors. But I had technical mentors in every dental specialty. These were doctors in my office available for consultation, cooperative treatment, and observation at least once a week. We started a tradition of weekly clinical conferences similar to my dental school training that I have continued to this day. By my estimate, a general dentist can receive at least three years of experience for every year practicing in a multispecialty group compared to the same time spent practicing solo. I formed this opinion based on observations of dozens of doctors I have interviewed and hired over the past fifteen years. I found repeatedly that many doctors I hired with only solo practice experience exhibited more limited comprehensive treatment planning skills, more difficulty relating to specialists within the office, and more difficulty relinquishing their patients' treatment to the specialists.

Another factor in favor of group practices that cannot be overlooked is camaraderie in the social and clinical sense. The ability to share experiences with peers in the office can tremendously reduce stress and possibly burnout in the long term. In my current multispecialty group practice, we have thirteen doctors



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representing general dentistry, prosthodontics, periodontics, oral surgery, and orthodontics. The number of years of practice experience ranges from eighteen months to forty-one years. Every day we take advantage of the pure physical presence of other doctors in the office by showing off our best work to each other. We also use every opportunity to display

The ability to share experiences with peers in the office can tremendously reduce stress and possibly burnout in the long term.

failures, either our own or those we see from other practitioners. We may ask another doctor to give injections when our third mandibular block attempt fails. Of course, this reinforces the teaching environment by expanding the horizons of our less experienced associates. We also have a built-in second opinion mechanism for emergencies and any complex case questions. The patients are always impressed when we have multiple general or specialist doctors available immediately for examination.

This leads to another interesting potential that exists in the group setting—quality assurance. Dr. Rob Compton of Delta Dental of Massachusetts spoke at my office recently relating his experiences in Michigan with large multispecialty groups where the clinical director was very formally involved in QA via required review of prosthetic impressions and endodontic final films. This type of process is not feasible in the solo setting. We have informally practiced the same type of reviews in my office for fifteen years. We emphasize this aspect of our practice when interviewing potential associates, and I feel it has been very effective in eliminating marginal candidates from consideration. If the group emphasizes quality of care from start to finish, it would be impossible for a mediocre

dentist to survive, since at one time or another all of our work is seen by the other doctors in the group.

This comparison is not intended to chastise all solo practitioners by any means. Clearly, the solo practice model has predominated around the world for all of the modern dental age and has produced dentistry at the highest levels. And there certainly have been plenty of multispecialty groups that have delivered substandard care. However, the percentage of dentists practicing in groups has steadily and substantially increased over the past decade and all indications point to a continuation of this trend. There are indications that the value at time of sale for a solo practice has been on a steady decline as patients' choices for treatment broaden. Also, as insurers play a larger role in directing patients in their choice of doctors, the history of a practices referral patterns—so called "goodwill"—becomes much less valuable. In California, at this time where capitated care contracts are much more prevalent than in the Northeast, the value of a practice is very dependent on the number and quality of capitation contracts the doctors owns. There are many forces at work to accelerate these changes.

Patients are looking to all service industries for increasing flexibility and convenience. This includes the convenience of extended hours which are much more common in the group setting. It also includes treatment convenience which can be offered by a multispecialty group. Patients have expressed enormous satisfaction with the ability to complete all of their treatment with one office, and they are equally dissatisfied when they must be referred out for any reason. Many new patients seek treatment in a multispecialty group solely due to this factor. They like the convenience of one office, one bill, and one staff to deal with. Many larger groups choose locations in high traffic areas, and this increases patient convenience. The relatively high rents in these areas can easily be offset by the much higher revenues generated, giving an advantage to the larger group. Another important area of

patient flexibility is payment options. A group can afford to offer a wide variety of payment programs to ease the financial burden on patients. They can purchase these programs at a substantial discount compared to the average solo practitioner due to higher volume, allowing the plans to be more affordable to the practice as well as the patient.

Economic pressures have continued to make solo practice less feasible. As student debt mounts to astronomical levels, the ability of any new graduate to finance the opening or the purchase of a new office becomes virtually impossible. It becomes necessary for the recent graduate to become an employee first to be able to hope to pay off loans and accumulate capital to contribute to ownership of an office. However, the average current solo practitioner no longer has need for an associate as the number of dentists has increased and competition for existing patient bases has heightened in many desirable practice areas. Some groups are eagerly hiring recent graduates at low to medium salary levels to take advantage of this market phenomenon.

Market and insurance pressures to keep fees lower also contribute. A group practice should generally be more cost-effective than the same number of practitioners practicing separately. Resources including facility and staff can be used

The value at time of sale for a solo practice has been on a steady decline.

more efficiently and can result in substantial cost savings. Volume purchasing of materials and services can contribute additional benefits. Although our group does not consider lower fees a goal, we do feel we provide a very high level of service at a fee lower than many comparable offices. Insurance companies are looking for the ability to work with offices that can treat a larger portion of their patient base, which can reduce the

insurance administration costs. Therefore, larger groups can often negotiate preferential contracts with insurers at favorable rates.

Then why would a high quality, successful multispecialty group practice choose to merge with a dental practice management company? Let us look at two areas: financial and professional.

For the owners of a profitable multispecialty group practice, the question of ultimate sale of their portion of the practice—or “exit strategy”—has become an increasing potential problem. As the practice grows to the \$2 or \$3 million size the value of a 50% share in the practice grows to an amount that is difficult for a new purchaser to afford. A common scenario for transfer of a portion of ownership involves the current partner financing the purchase to the new partner, usually an associate of the practice, through the use of existing practice profits ordinarily paid to the current owner. In other words, ownership is transferred to an associate using the partner's own money. The main justification for this type of transfer is the guarantee of future practice revenues by retaining the associate within the practice. However, for the current owner, it is often a cashless transaction, or worse, a net cash loss. By merging with a management company, the owners can usually receive a substantial portion of the equity

built up in the practice as a combination of cash at the time of sale, a short term promissory note, and, in some instances, company stock. They continue to receive a cash flow in the form of compensation for their dentistry as well as some portion of the future profit generated by their office, but the majority of that profit now goes to the management

Economic pressures have continued to make solo practice less feasible.

company. This ability to receive current value for the equity in the practice can yield a large leverage factor toward future retirement options for dentists in any age bracket. Our group has doctors who have sold their practice and who are as young as thirty-three.

The presence of substantial financial resources devoted solely to the increase in production and profitability of the office has allowed many offices to complete renovations and expansions that even the individual large groups may never have attempted. Also, the geographic advantages of having multiple locations near each other allows more efficient use of advertising to create mar-

ket awareness and generate increased patient flow.

On a professional level, many of the reasons for joining with a management company follow from the discussion of the advantages of group practice presented earlier. The ability to interact with a much larger successful peer group is very exciting. The sharing of clinical and management ideas has yielded tremendous advancement for many of our practices. In our company, one of the responsibilities of the officers of the professional corporation is to visit each office and analyze areas for improvement in clinical and non-clinical areas and to provide training. The support of a professional management company that includes several very high level individuals with significant health care experience in companies like HCA/Columbia and Blue Cross, has added a business component to our practices that we could not have afforded alone.

From my admittedly biased view, I feel that the future of dentistry will see a growing percentage of dentists practicing in groups and a larger number of management companies will appear on the horizon to try to consolidate our practices. The solo practitioner will survive for a long time to come, but the efficiencies of working with the support of a large group will likely make it more difficult for the smaller practices.

Update on Student Debt: Trends and Possible Consequences

Chester W. Douglass, DMD, PhD, FACD
and Leonidas V. Cansos

Abstract

This paper is an update on the issue of dental student debt and provides additional data and an exploration of continued trends which were outlined by Douglass and Fein in the 1995 IOM study of *The Future of Dental Education*. Dental school tuitions have continued to increase at rates at or above the consumer price index. These tuition bills are increasingly being met by debt financing on the part of the students. These trends are described and then related to recent data on the future plans of dental school seniors. The second part of the paper will provide new updated data on dentists' incomes and analyze the trend in dental fees versus the consumer price index. The final section provides a summary of pay back mechanisms currently being offered to students.

The average private dental school tuition and fees (\$23,500) is approximately three to four times higher than that of public dental schools (\$6,500). There are thirty-five public schools and nineteen private and private state-related dental schools in the United States. But, because of their larger size, private schools account for 53% of the nation's dental students. Therefore, the high and rising cost of private dental education is affecting the

majority of dental students in the United States, although concerns have been expressed by deans of public dental schools. The American Association of Dental Schools (AADS) has analyzed this trend and shown that the real cost to students has more than doubled in the past twenty years, even after adjusting for inflation (American Dental Association, 1993a). Tuition increases continue to be about 2% above the consumer price index annually. These increases are experienced in both public and private schools of dentistry. The consequence of this trend is the continued high and rising debt of dental students upon graduation.

Figure 1 shows the trends in student debt from 1985 to 1996 for both public and private dental schools (American Dental Association, 1993b; American Association of Dental School, 1996). Clearly, student debt has continued to mount. Somewhat alarming, however, is that the slope of the recent increases seems to be greater, i.e., annual increases in student debt have become greater. For example, earlier reports (Douglass & Fein, 1995) ending in 1993 showed an increase of about \$8,000 for students graduating from private schools between 1991 and 1993. However, for the most recent two years for which data are available; 1994-1996, student debt has risen from \$90,000 to over \$105,000—nearly double the former increase. Similar steep increases in student debt can be seen in Figure 1 for state related and public dental school students. Accordingly, not only has the trend in student debt continued, but it has become exacerbated since 1994.

Impact on Future Practice Plans

Each year the American Association of Dental Schools surveys dental school seniors on a variety of subjects, including their career plans immediately upon graduation. Table 1 presents an eighteen-year trend that includes the most recent two years of this survey (American Association of Dental Schools, 1995; Solomon, 1985) (1996 data are not yet published). The trend in all of the first five categories has continued. Graduating seniors intending to go into solo practice has declined to between 6% and 7%. Seniors going into group practice has increased to 15%; seniors seeking advanced education and specialty training has increased to 37%; seniors intending to become employed dentists has dropped slightly to 28%; and seniors expecting to go into government service has dropped slightly to 8.7%. Interestingly, only 3.5% of seniors (the lowest number ever) are undecided about their future practice plans.

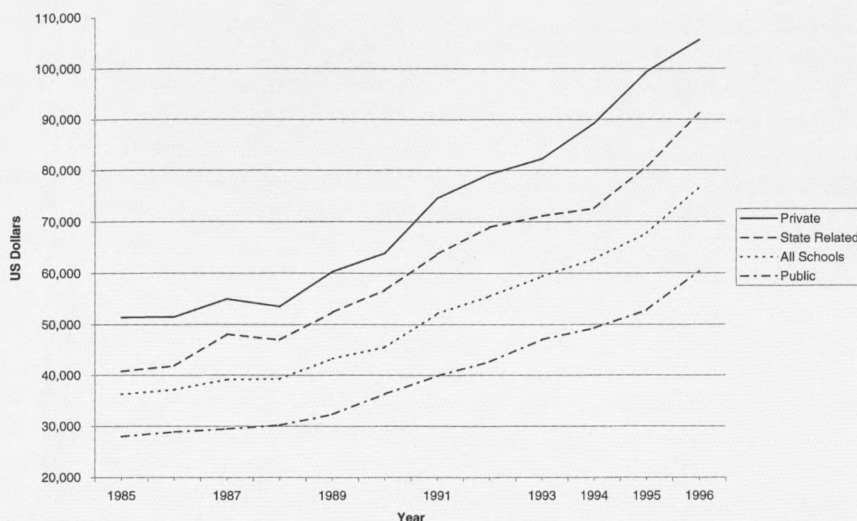
The extent to which increasing student debt affects practice plans is perhaps difficult to directly document.



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Financing Oral Health Care

Figure 1: TRENDS IN STUDENT DEBT



SOURCE: Survey of Dental Seniors Summary Report 1996, AADS, Washington, D.C.

However, the basic shape of these trends seem clear. As student debt escalates, more students are seeking advanced education in fee-based dental specialties and expect to be in group practice as employed dentist (at least initially). Perhaps of greater concern is that this trend into high paying dental specialties seems to discourage entry into dental education and research careers because they are increasingly less attractive financially, particularly if students have upwards of \$100,000 in student debt to repay.

Expected Incomes

One factor that may be affecting career choice is the expectation of future income. Are future dental incomes consistent with taking on such heavy debt for a dental education? In 1991, assuming that 8% of net income could be used to pay this debt, Petersdorf (1991) proposed that a debt of \$75,000 could be repaid comfortably with a net income of approximately \$150,000; that it would be possible to pay this debt within an income of \$97,000; but difficult to pay the debt with an income of only \$75,000.

With these guidelines in mind, observe Figures 3 and 4 which present gross incomes for general practitioners

and dental specialists for each five-year interval since graduation from dental school. Keep in mind, that these 1994 es-

timated incomes are three years behind today's actual 1997 incomes and are hence approximately 15% to 20% below actual 1997 incomes. In 1994, the average net income for all dentists was \$127,430. With general practitioners reporting \$117,610 and specialists averaging \$177,590 (American Dental Association, 1996) (see Table 2). Net income figures, however, are largely a function of business acumen, legal advice, and how aggressive each practitioner is on reporting business-related tax deductions. For example, the extent to which business entertainment, Keogh and other retirement benefits, a company car, or family vacations linked to continuing education and convention trips are included in the dental practice overhead is a function of accounting and legal advice received by the practicing dentists rather than a true cost of providing direct services to patients. Therefore, gross income is a better indicator of the overall economic health of the dental care market and hence a better indicator for determining whether dental students will be able to repay their stu-

Table 1: Future Practice Plans of Dental School Seniors (percent)

Immediate Plans	1978	1980	1983	1989	1992	1995	1996
Solo Practice	21.5	17.3	13.2	6.7	6.7	5.8	6.7
Partner / Group	17.9	9.8	12.1	13.8	11.2	11.1	15.2
Advanced Education	18.9	18.3	20.8	31.4	35.9	36.0	36.8
Employed	19.1	29.9	34.5	31.9	30.9	32.9	27.7
Government Services	19.7	14.5	10.7	10.6	9.5	8.9	8.7
Teaching	1.1	1.3	0.8	0.9	0.7	1.1	0.8
Undecided	na	8.9	7.7	4.6	5.1	4.2	3.5

SOURCE: Survey of Dental School Seniors Summary Report, 1995, AADS, Washington, DC
1996 data not yet published

Table 2: Net Income for the Primary Private Practice of Independent Dentists, 1994

Type of Respondent	Mean	1stQ	Median	3rdQ	SD
General Practitioners	117,610	70,000	105,000	151,380	67,730
Specialists	177,590	102,000	160,000	231,000	98,480
All Independent (Weighted)	127,430	73,200	110,000	165,000	77,460

SOURCE: American Dental Association, Survey Center, 1995 *Survey of Dental Practice*

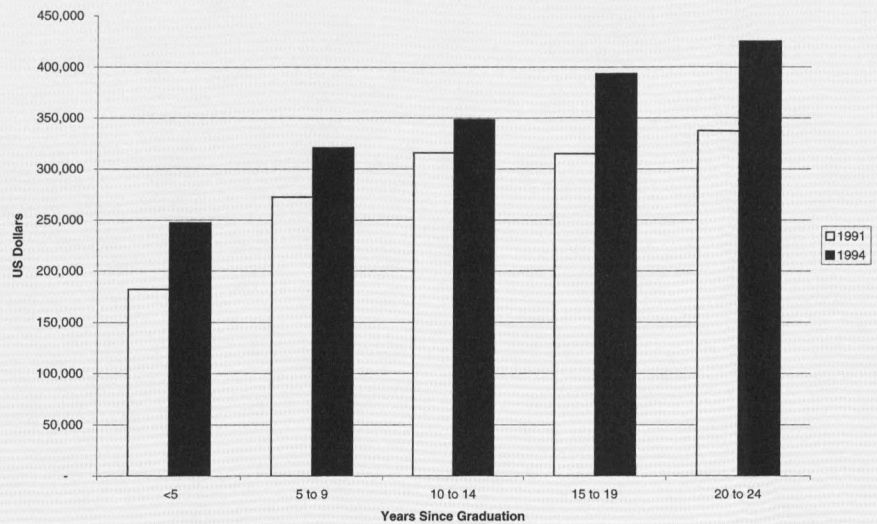
dent debt that is now averaging more than a \$100,000 for most students in the United States.

The American Dental Association survey center of 1995 reports the 1994 results of a national survey of dentists' incomes (American Dental Association, 1993c; 1996). The mean gross income for general practitioners with fewer than five years since graduation is \$247,510. Given the 5% fee inflation for the past three years, in 1997 this income would be approximately \$286,524. With average reported overhead expenses of 65%, this would still leave \$100,283 as a net income, which is well within the range that Petersdorf sets for being able to repay an 8% annual pay back for a \$75,000 loan.

The loan payment provisions which now allow students to carry the payment out fifteen to twenty years provide a benefit for today's young general practitioners that seems within the range of economic feasibility. For example, for general practitioners in practice for ten to fourteen years, the 1994 average gross income was \$348,330 which is equal to \$403,235 in 1997. A 35% net income would provide \$141,132 with which to pay back the student loan. For the one-third of the graduating class who become specialists, however, paying back the graduating debt of \$100,000 is twice as easy. Average specialty incomes in only five to nine years out of dental school are \$452,930 in 1994, or \$524,323 in 1997.

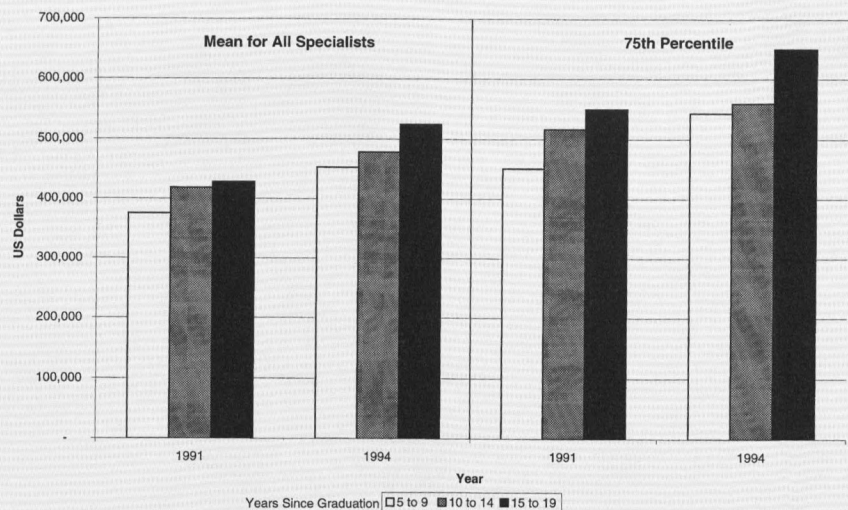
Since dental faculty specialists, dental public health, and oral pathology specialists are at the extreme lower end of these incomes, it is perhaps more appropriate that students aiming to be in private practice would expect to be closer to the 75th percentile of specialists' incomes. Figure 3 shows that in the upper 25% specialty gross incomes were \$650,000 in 1994 or approximately \$752,000 in 1997. It is interesting to note that not only are specialists' gross incomes substantially greater than those of general practitioners, but that the percent retained as net income is also greater (see Table 3). That is, specialists in practice fifteen to nineteen years have a net income equal to 44.8% of their gross incomes, resulting in a net income of \$337,100 in 1997.

Figure 2: MEAN GROSS INCOME OF GENERAL PRACTITIONERS



SOURCE: American Dental Association, Survey Center, 1992 and 1995 Survey of Dental Practice

Figure 3: GROSS INCOME OF SPECIALISTS



SOURCE: American Dental Association, Survey Center, 1992 and 1995 Survey of Dental Practice

These reported incomes from dental specialists in private practice perhaps could help explain why sixteen out of eighteen students in one graduating class from a private school recently wanted to become orthodontists or oral surgeons. Periodontist's and endodontist's incomes are reported to be equally as high.

However, even under these favorable long-term financial conditions, it seems that recent graduates still feel substantial financial pressure, at least during the first few years of practice. It has been suggested anecdotally that such circumstances influence the delivery of unnecessary dental care. However, no studies

have been reported that document this phenomenon.

Dental Fee Annual Inflation

A factor that does contribute to the continued real increases in dentists' incomes is the inflation in dental fees. Since 1983, annual dental fee increases have risen at a rate higher than the consumer price index, a time period that is coincident with a substantial increase in dental insurance. Figure 4 shows that since 1991, while the CPI has been held consistently to 3% for six years in a row, dental fees have risen approximately 5% during four of those years, 6% in 1982 and 8% in 1991 U.S. Department of Labor, 1997). This trend has continued. The Bureau of Labor Statistics, in April of 1977, reported that "the inflation rate for dental services continued to outpace that for medical care and all items in general." Weeks et al (1994) reported that the annual yield, or internal rate of return (IRR), on the investment of a medical or dental education was almost identical for specialist physicians and dentists, at

20.9% and 20.7% respectively. This analysis was controlled for equal working hours.

Given this fourteen-year trend in dental fees, the real increases in dentists income since 1983 have risen substantially when compared to the consumer price index for all goods and services. This phenomenon is characteristic of a seller's market. With a decreasing supply of dentists projected over the next decade and a slow but steadily growing economy and larger work force, it is apparent that a growing population of patients will be seeking dental care from a shrinking population of dentists. It seems logical, therefore, to expect that dental incomes during the coming decade will continue to experience the increases that have been characteristic of the past fifteen years. In summary, while the student debt outlined earlier seems like a burden, the ability of graduates to pay back these debts while in private practice will probably encourage the continued practice of paying for dental education with debt financing. The extent to which these eco-

nomic forces limit dental services available to under-served populations and discourage entry into dental education and research careers would seem problematic.

Loan Repayment Plan Alternatives

Once a student has completed his or her education it is time to begin paying back loans. The loan payments may begin anywhere between six months to a year following graduation. According to a publication by the William D. Ford Federal Direct Loan Program (1996) on repayment plan choices, the maximum amount of monthly interest allowed to accrue on these loans has been set at 8.25% by the federal government. This publication describes four payment plans for repaying student direct loans:

Standard Repayment Plan. A monthly payment plan with a maximum repayment period of up to ten years, depending on the amount of the loan taken out. The amount of the monthly payments will be the largest with this plan, however, over the life of the loan, the total repayment amount will be the lowest.

Extended Repayment Plan. A monthly payment plan with a repayment period of twelve to thirty years, according to the amount of the loan. Because of the longer repayment period, the monthly payments will be smaller, but the total repayment amount will be greater over the life of the loan.

Graduated Repayment Plan. A monthly payment plan with a repayment period of twelve to thirty years, according to the amount of the loan, however, the payments start low and increase very two to three years. This will allow students to make lower payments earlier in their careers and increase the payments as they become more established. Over the life of the loan the total repayment amount will be higher, because more payments are made in the first years.

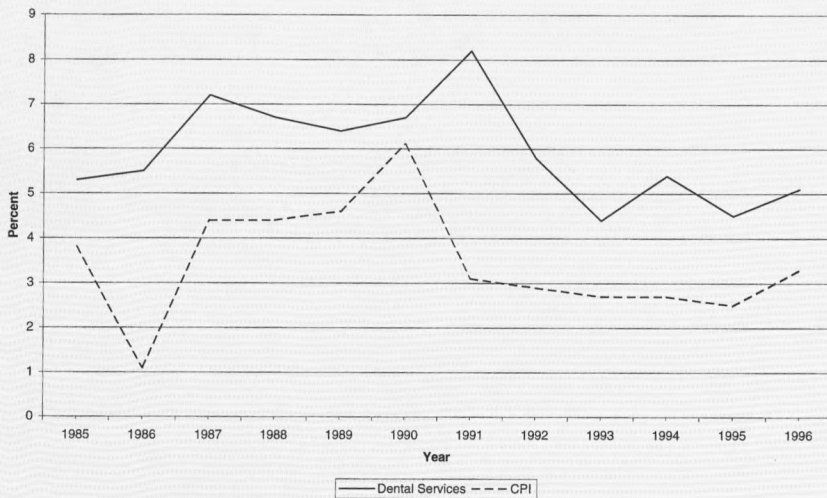
Income Contingent Repayment Plan. A monthly payment plan with a repayment period of up to twenty-five years that went into effect on July 1, 1996. Under this plan the repayment amount is based

Table 3: Percent of Gross Income Declared as Net Income, 1994

Type of Dentists	Mean	1st Q	3rd Q
General Practitioners			
<i>Years since graduation</i>			
Under 5	26.0	25.0	25.0
5 to 9	34.8	30.0	36.3
10 to 14	35.6	35.2	40.0
15 to 19	33.0	34.3	33.4
20 to 24	31.9	30.0	33.8
25 to 29	35.3	32.8	35.5
30 to 34	36.0	43.4	31.1
35 and over	36.7	47.8	36.0
Specialists			
<i>Years since graduation</i>			
Under 5	na	na	na
5 to 9	34.8	31.7	36.8
10 to 14	38.9	38.6	40.9
15 to 19	41.1	36.4	44.8
20 to 24	38.5	39.9	36.8
25 to 29	43.5	43.3	41.8
30 to 34	38.7	35.0	38.7
35 and over	38.8	46.4	36.4

SOURCE: American Dental Association, Survey Center, 1995 *Survey of Dental Practice*

Figure 4: PERCENT INCREASE FROM PREVIOUS YEAR OF CPI OF ALL ITEMS AND CPI OF DENTAL SERVICES



SOURCE: Bureau of Labor Statistics, US Department of Labor, *CPI Detailed Report*, Jan. 1997

upon the dentist's monthly income. Twenty percent of this income will be taken towards the repayment of the loan. In the event that the payment amount is less than the amount of the interest accrued on the loan, the interest will be added to the principal amount once a year until the principal balance is 10% higher than the original balance.

Each repayment plan has its advantages and its disadvantages. Recent graduates must decide whether it is their interests to make large monthly payments and pay off the loan as quickly as possible, or make smaller monthly payments even if that means paying back a significantly larger amount of money in the long run. Presently, the most popular repayment method is reported to be the Graduated Repayment Plan.

One way for a student to avoid the cost of these repayment plans is to obtain some sort of sponsorship or tuition reimbursement benefit while in school. A number of scholarship or revolving loan funds for dental students have been suggested. Since an increasingly larger share of dental school graduates enter the work force as employees, benefits like the tuition reimbursement can significantly decrease the costs of loan repayment for students. Furthermore, tuition reimbursement benefits, which are prevalent in large competitive private sector companies, can provide subsidized opportunities for continuing dental education and possibly specialization at a later date.

In summary, while the student debt outlined earlier seems like a burden, the ability of graduates to pay back these

debts while in private practice will probably encourage the continued practice of paying for dental education with debt financing. The extent to which these economic forces limit dental services available to under-served populations and discourage entry into dental education and research careers would seem problematic.

References

- American Association of Dental Schools (1995). *Survey of Dental Seniors Summary Report*. Washington, DC: The Association.
- American Association of Dental Schools (1996). *Survey of Dental Seniors Summary Report*. Washington, DC: The Association.
- American Dental Association, Department of Educational Surveys (1993a). *Dental School Trend Analysis*. Chicago, IL: The Association.
- American Dental Association, Department of Educational Surveys (1993b). *Survey of Dental Educators*. Chicago, IL: The Association.
- American Dental Association, Bureau of Economic and Behavioral Research (1993c). *The 1992 Survey of Dental Practice: Income from Private Practice of Dentistry*. Chicago, IL: The Association.
- American Dental Association, Bureau of Economic and Behavioral Research (1996). *The 1995 Survey of Dental Practice: Income from Private Practice of Dentistry*. Chicago, IL: The Association.
- Douglass, C.W., and Fein, R. (1995). Financing dental education. *Journal of Dental Education*, 59, 185-202.
- Petersdorf, R.O. (1991). Financing Medical Education. *Academic Medicine*, 66, 61-65.
- Solomon, E. (1985). Senior Survey Update: student debt increases while practice plans stabilize. *Journal of Dental Education*, 49, 662-663.
- U.S. Department of Labor, Bureau of Labor Statistics (1997). *CPI Detailed Report*. Washington, DC: The Bureau.
- Weeks, W.B., Wallace, A.E., Wallace M.M., and Welch, A.G. (1994). A comparison of the educational costs and incomes of physicians and other professionals. *The England Journal of Medicine*, 330, 1280-1286.
- William D. Ford Direct Loan Program (1996). *Repayment plan choices*. Washington, DC: U.S. Government Printing Office.

Fee-for-Service Dentistry or Managed Care: One Dentist's Opinion

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Abstract

Contrasts are drawn between dental care based on fee-for-service and managed care financial arrangements. The advantages of fee-for-service include (for the profession) slow acceptance of managed care in dentistry compared to medicine; (for society and the patient) more community service, higher technical quality of work, and stimulation of innovations; and (for the individual dentist) the strong dentist-patient bond as well as professionalism.

About four years ago, I recall a senior dental student complaining about the cool reception he had received from the neighborhood dentists when he visited them to inquire about opening an office nearby. At a recent dental meeting, I had occasion to listen to this same young man complain about all those new dentists moving into "his area" to practice. I believe this is called changing your perspective.

My own judgment is that the advocates of different managed care initiatives have worked hard to change our profession's perspective on fee-for-service dentistry and simultaneously to promote their own commercial enterprises. Let's examine fee for service dentistry and managed care from three different vistas: the profession, society and the patient, and the individual dentist.

The Profession

Dentistry is not medicine. The two professions are vastly different. Although the percentage of dentists involved in at least one managed care plan continues to hover somewhere in the mid to high 20% range, only about 6% of dentists' patients are managed care patients. "Consumers grade their dental managed care plan significantly lower than they grade their dentist, and the freedom to choose one's dentist is more important to them than lowering dental costs" (Brutlag & Associates, 1996).

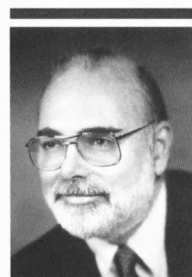
In the American Dental Association 1996 Membership Needs and Opinion Survey, a number of questions were asked relating to identifiable challenges facing the practice of dentistry. Interestingly, 52% rated "deciding whether or not I should participate in a managed care plan(s)" as only somewhat significant or not significant (American Dental Association, 1996). Consequently, it would appear that those who are aggressively counseling us toward managed care are having a somewhat more arduous task persuading dentists than they have had persuading physicians. Although each of us has witnessed colleagues who have abandoned managed care to return to fee for service, the managed care industry understandably has offered no data about these occurrences.

Nonetheless, it would be naive to hold that managed care will be unimportant in the delivery and financing of oral health care in the future. "While nobody knows how deeply managed care will

penetrate dentistry, it will continue to increase and create concern and questions in the profession" (Brutlag, 1996).

A very influential element in this equation is academia. As governmental (federal and state) support for dental educational institutions continues to erode, dental education must cast about for other means of support. Many schools are evaluating increased reliance on patient care revenues; in other words, becoming involved in managed care (Anderson, 1995). These potential activities will not only impact on a school's financial stability, but also on the dental students' opinion of managed care. The positive image of fee-for-service dentistry could be substantially damaged unless these schools work very hard to provide a balanced view in the minds of those who are to be the future of dentistry.

Moreover, the great majority of young dentists entering our profession are heavily burdened with debt. Private dental schools are now graduating den-



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tists responsible for up to \$250,000 in educational debt. The incremental and gradual building of a fee-for-service practice may not be the option of choice for these new practitioners when a "plan" promises some sort of immediate income (Wilson, 1997).

Until dentists accept academia's problems as belonging to the entire profession, damaging divisiveness between the private practice and educational communities will continue to impede professional harmony, scientific progress, and the health of the profession. Dental educational institutions interfacing with managed care should be addressed collaboratively by educators and practi-

competent and caring therapists of all descriptions are being documented with increasing frequency (Eddy, 1990). Because these inconsistencies influence cost and quality of care, observant payers responded. In many instances, these responses resulted in practitioners becoming more uniform and standardized in their care and, as a consequence, patients benefited. Significantly, the "standards" that a number of plans developed appear to favor those treatments that are less costly.

The question must be posed: Is quality of care being subordinated to profit by business oriented managed care administrators?

Although there is no "typical" geriatric dental patient, a great many of our older dental patients are dentate, have existing restorations of considerable age, are concerned about their oral health and are retired with no "dental plan." It appears that this increasingly numerous and vulnerable segment of our population has been forsaken by managed care. The fee-for-service practice is the contemporary source of oral health care for these patients, frequently at reduced fees and with considerable investment in extra time. Frankly, that is an extension of our community responsibility, no matter which practice environment we prefer.

Treatment outcomes that are important to patients and outcomes that are important to dentists may be similar, but priorities may well differ. Patient concerns seem to center around function without pain or inconvenience and an acceptable appearance. On the other hand, most dentists judge outcomes in a number of additional ways, including lack of pathosis, and the more clinical manifestations of quality oral health care (quality of intercuspation, quality of restorative margins, quality of the endodontic fill, etc.). Both patient and dentist believe that longevity of treatment satisfaction is essential to success. Significantly, patients often forget how long a bridge has been in place, what year "that root canal" was completed, or how long ago periodontal surgery was implemented. Reminders by

the dentist invariably evoke surprise, but happily stimulate increased confidence.

So, many of the time-consuming, painstaking, and precise efforts that result in long-term success in oral health care could be difficult for the patient to appreciate. Patients who are media oriented toward short-term solutions may not understand the difference between the enduring value received in a high quality, fee-for-service environment and a low-cost managed care system.

One would hope that this lack of understanding is not being exploited, especially among the businesses and industries that engage managed care plans for their employees. The role of organized dentistry in helping to overcome this lack of understanding could be fundamental to the sustained vitality of fee-for-service dentistry.

Two of the more compelling concerns that precipitated our nation's re-evaluation of our healthcare system were cost and the financial returns gleaned by hospitals and individual healthcare providers. In an ironic twist, society would do well to be concerned about the

A grave challenge to society is the intentional discouragement of excellence in health care.

tioners. Dental education cannot survive in isolation. Dentistry with impoverished dental schools will not long be a profession.

Society and the Patient

A grave challenge to society is the intentional discouragement of excellence in health care. The conscientious managed care dentist who spends that little "extra" striving for excellence will be compensated at the same rate as the less-than-committed managed care dentist. Integrity and altruism are thereby financially penalized.

More than a few dentists may be allowing their clinical decisions to be shaped by others. There is a widely held view that the motivation of these "others" is external to what is best for the patient. One wonders about long-term impact.

The assumption that all private practicing dentists' diagnostic and therapeutic decisions are invariably correct is no longer valid. Inconsistencies among

Patients may not understand the difference between the enduring value received in a high quality, fee-for-service environment and a low-cost managed care system.

amount of return gleaned by managed care commercial enterprises, as well as by individual managed care entrepreneurs.

During a recent symposium, I questioned a managed care administrator as to how his "group" dealt with charity patients. After a long pause for reflection, he responded that they intended to open one of their offices for a full day on an annual basis to offer free care for the indigent and emphasized that the media

would be notified to "assure good attendance." I wondered about the reaction of those thousands of fee-for-service dentists who, quietly and without fanfare, care for people of limited or no income and do so during the entire year.

Society not only expects of our profession quality oral health care, but also expects innovative and effective initiatives to continually improve that quality of oral health care. There is general concern that the growth and consolidation of managed care systems may stifle both competition and healthcare innovation (American Hospital Association, 1995).

Much of the creativity and attendant ongoing evaluation of adhesive dentistry, implantology, and bio-surgical techniques take place in fee-for-service practices, both in academic private practices and in daily private practices. It is hard to imagine such thoughtful, productive, and enterprising activities taking place in a managed care practice.

The Individual Dentist

My daughter is a dental student. As a dentist and as a father, I am concerned about how the future will deal with the individual dentist. I am persuaded that the diminishment of fee-for-service dentistry will have a negative impact on

The dentist of the future must base his or her success on the patient.

society's view of our profession and on the dentist's ability to enhance today's high levels of oral health care.

The following quote is both provocative and instructive: "What makes managed care and capitation especially problematic for the individual dentist is the fact that our fixed operating expenses average 61% and are even higher for many—compared to fixed expenses of 46% in medical practices. With an average margin of 39% there isn't much leeway to discount fees...and industry sug-

gestions that dentists should somehow 'absorb costs' are problematic. Some dentists may do well accepting bargain basement capitation rates under managed care. For others, though, this may mean compromising the comprehensiveness of care they deliver to their patients or risking lower profits or even losses" (American Dental Association, 1994).

Patients of the '90s are astute and well-informed and resent "take a number," unprofessional, or high pressure dental practices. The dentist of the future must base his or her success on the patient and on whether that patient feels comfortable enough to refer others.

As a fee-for-service dentist, I am answerable to my patients. They are my employers. My obligation is their care and no plan precludes my doing that. My own professional judgment prevails when I elect to remake a crown or refer a patient to a periodontist. There is no externally generated financial disincentive to hinder that decision. My patients are my marketplace and my constituency. They are the source of my referrals and they are not compelled to be my patients by my being on a list. They are my neighbors and my friends.

In this profile of a classic fee-for-service practice, when dental treatment is suggested, carefully explained, and options reviewed, rarely is that treatment refused. As fee-for-service dentists will testify, this relationship between patient and dentist is eloquently rich in kinship. Patients of long standing place great trust in their dentist. Often that trust extends well beyond dental treatment. Advice is sought, misfortunes and struggles (often of a very personal nature) are shared, influence is requested; most of these, of course, are of a confidential nature and are discussed with the individual dentist without the slightest thought that confidentiality would be pierced.

In a fee-for-service practice, the dentist's broad responsibilities also include explaining why referrals to dental or medical specialists are beneficial to the patient. The impact of the various oncologic therapies, of nutrition, of pregnancy, of tobacco, and of various medi-

cations on oral health requires thoughtful, prudent, and usually time-consuming counseling by the dentist. I assume because these services are usually non-compensated, patients tell me that they are rarely encountered in their previous managed care experiences.

It must be stated that in any model of private practice, there is always a tension between the dentist's commitment to caring for people and the pressures of

Today's fee-for-service practitioners are applying sound business concepts in controlling costs.

economics. How the dentist responds to that tension is an indication of his or her professionalism.

Is it a sign of the times that we must ask ourselves if professionalism is outdated? What do dentists mean when they speak of "professionalism?" I believe that the late Roscoe Pound said it best when he defined a true profession "as a group pursuing a learned art as a common calling in the spirit of public service—no less a public service because it incidentally may be a means of livelihood" (Sullivan, 1986). No right thinking dentist would capriciously deny that livelihood to a colleague.

Clearly, managed care is not the only method of providing society with oral health care while controlling cost. Most of the fee-for-service dentists that I know have reassessed their entire practices, have worked hard to improve their patient rapport methods, and have elevated their pain control techniques. In addition, many put in more hours, trim overhead where possible, and more closely monitor accounts receivable. In other words, today's fee-for-service practitioners are applying sound business concepts in controlling costs.

Are "sound business concepts" and quality of care compatible? Is it possible

for the individual dentist to administer a fee-for-service dental practice in a businesslike manner and still demonstrate the professionalism that our communities expect? My own strong response is a resounding "Yes!"

"The cost of dental care continues to increase at a much more modest rate than other healthcare costs" (Brutlag, 1996). That admirable fact could hardly be due to the 6% of dentists' patients who are in managed care plans.

It is evident that a number of colleagues elect to practice in a managed care environment. My decision to engage in a fee-for-service practice is identical to theirs, I trust, because it is dictated by a concern for the profession, for society

and the patient, and for the peace of mind of the individual practitioner.

There are a number of ways that dentists evaluate success. Undeniably, the financial factor is important. However, when we return to our fortieth dental school reunion, the classmate who will command the greatest respect will not be the one who has made the most money in dentistry. The colleague who will stand tallest in our esteem will be the dentist who has the reputation for compassionate and high quality patient care based upon a moral base of professionalism and integrity. When we think about success, that should be our objective.

In my view, fee-for-service dentistry is the ideal vehicle for attaining that objective.

References

- American Dental Association (1996). *1996 Membership needs and opinion survey*. Chicago, IL: The Association.
- American Dental Association, Council on Dental Benefit Programs (1994). Chicago, IL: The Association.
- American Hospital Association (1995). *Environmental assessment*.
- Anderson, A.W. (1995). The challenges facing dental schools and academic health centers. Paper presented at the 1995 American Association of Dental Schools meeting, San Francisco, CA.
- Brutlag & Associates (1996). *Emerging issues — environmental assessment study*. Study conducted for the American Dental Association.
- Eddy, D.M. (1990). Clinical decision making. Series published in the *Journal of the American Medical Association*.
- Sullivan, T.J. (1986). Dean's address, Boyd-Graves Conference, Marshall Wythe School of Law of the College of William and Mary.
- Wilson, R.D. (1997). The profession's future. Paper presented at the 25th anniversary of the periodontics graduate program, Virginia Commonwealth University.

An Economic Analysis of Managed Fee-For-Service and Direct Reimbursement

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Abstract

This economic analysis compares the direct reimbursement approach with the managed fee-for-service approach to the delivery and payment for dental care. Asymmetrical distribution of information between patients and dentists characterizes the market and gives rise to a principal-agent problem. To solve this problem, third-party payers have devised various methods for managing delivery and payment for dental care by monitoring and encouraging providers to assure a certain level of quality at defined costs. Direct reimbursement has been promoted by dental care providers as an alternative to the traditional third-party payer model and has at its core the elimination of many of the currently used managed care control mechanisms. The authors conclude that managed fee-for-service plan concepts deal with current economic issues more realistically than do direct reimbursement arrangements. Furthermore, the authors predict that direct reimbursement prevalence would lead to higher average prices for dental care and a change in the mix of services skewed toward high cost, marginally beneficial treatments.

Since its inception in the early 1950s, third party payment for dental care has grown from nothing to nearly one-half of all dental care expenditures (Delta Dental Plans Association, 1996). This growth has been accompanied by ever increasing plan purchaser demands on administrators and carriers to contain expenditures and to control the quality of dental care delivery. As a result, dental plan administrators adopted various selective methods for controlling treatment fees as well as the type and level of care. The current level of application of this methodology has grown to the extent that it is termed "managed dental care." Most dentists consider these methods to be a hindrance to the doctor-patient relationship and to their ability to provide clinical care and, as a result, in 1996 the American Dental Association launched an aggressive three-year, \$7.5 million dollar campaign to promote its own concept of a dental plan, direct reimbursement (DR) (California Dental Association, 1997a).

The ADA explains that "under a direct reimbursement plan, the employee and covered dependents visit the dentist of their choice, receive the necessary treatment, and pay the dentist's bill directly to the dental office. The employee then presents a paid receipt or other proof of payment to the employer and is reimbursed for all or part of the expense,

depending on the benefit levels of the plan" (American Dental Association, 1996a). The ADA literature claims that DR will reduce administrative cost, allow greater allocation of resources to go to direct care, and preserve consumer sovereignty with respect to the choice of provider and the type and level of care. In contrast, the dental insurance industry and many purchasers claim that DR will ultimately increase costs and let the quality of dental care seek its own arbitrary level due to the absence of control mechanisms under this arrangement.

The dentist-sponsored DR approach and the carrier/purchaser-sponsored managed care approach define the opposing camps of the most heated debate



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in dental care delivery today—and define the protagonists in this essentially economic debate. The purpose of this paper is to present an economic analysis of the direct reimbursement approach to dental care delivery and payment and compare it to the managed fee-for-service (MFFS) approach.

We define the terms DR and MFFS as follows: direct reimbursement is a method of providing benefits through which an employer reimburses employees directly for dental care expenses instead of purchasing insurance coverage or other administrative and oversight services from a third party. Managed fee-

pressures, carriers and administrators are looking for new and innovative ways to meet purchaser's requirements.

Benefits managers have learned from the managed medical care experience of the past twenty years and have become sophisticated purchasers of health care benefits. This has increased pressure to provide similar efficiencies in the delivery of dental services. While there are many parallels, dental care delivery has a number of unique characteristics which need to be recognized.

First, dentists largely practice in isolation. While the practice of medicine is hospital-oriented and physicians typically

problems for third parties in dentistry, which are often contractually obligated to monitor and report on dental practice patterns.

Second, unlike physicians, dentists are almost exclusively owner-operators. In 1994, 96.2% of dentists were self-employed (American Dental Association, 1996b). Furthermore, the vast majority of dentists in private practice, 92%, are owners of their practices. Of the remaining 7.8%, 4.4% are employees, while another 3.4% are independent contractors (American Dental Association, 1996b). Employee/dentists and independent contractor/dentists are generally paid commissions or a percentage of production or collections.

Finally, dental care is generally deemed to be more manageable from a timing and financial perspective. While medical care is usually mandatory, highly complex, costly, and often-times unpredictable, dental care is generally elective, with relatively low, predictable cost. Dental patients have the perception that there is little risk in postponing care, and fees, which tend to be manageable, may be discussed with the dentist prior to treatment. In view of these differences, "insurance" for dental care expenses is not strictly insurance in the traditional sense. The function of "dental insurance" is not to insure against an actuarially determined risk that is essentially unknown to the insured. Rather, "dental insurance" essentially functions as a cash flow management mechanism for highly predictable and relatively low-cost care.

As a result of the differences between medical and dental care, financing has also developed along different paths. Health Insurance Association of America data indicate that the financing of medi-

No longer are purchasers willing to let dentists independently determine the need for, and results of, dental treatment.

for-service is a method of payment under which the provider is paid for each procedure or service that is provided to a patient, but with certain provisions which a firm or insurer establishes to control cost and quality. Typical cost and quality control mechanisms include dental plan design exclusions and limitations, professional claims review, and provider fee management.

Industry Background

According to the U.S. government, the dental care marketplace, now a \$47 billion industry, represents 4.5% of the total U.S. health care market (U.S. Congress, 1996). This industry is in the midst of a remarkable transition which parallels the medical care marketplace of ten or fifteen years ago. Change is being driven by many different forces, including purchaser demands for measurable, verifiable results and increased desire for quality and cost management. No longer are purchasers willing to let dentists independently determine the need for, and results of, dental treatment based on the traditional fee-for-service (TFFS) method. In response to these financial and quality

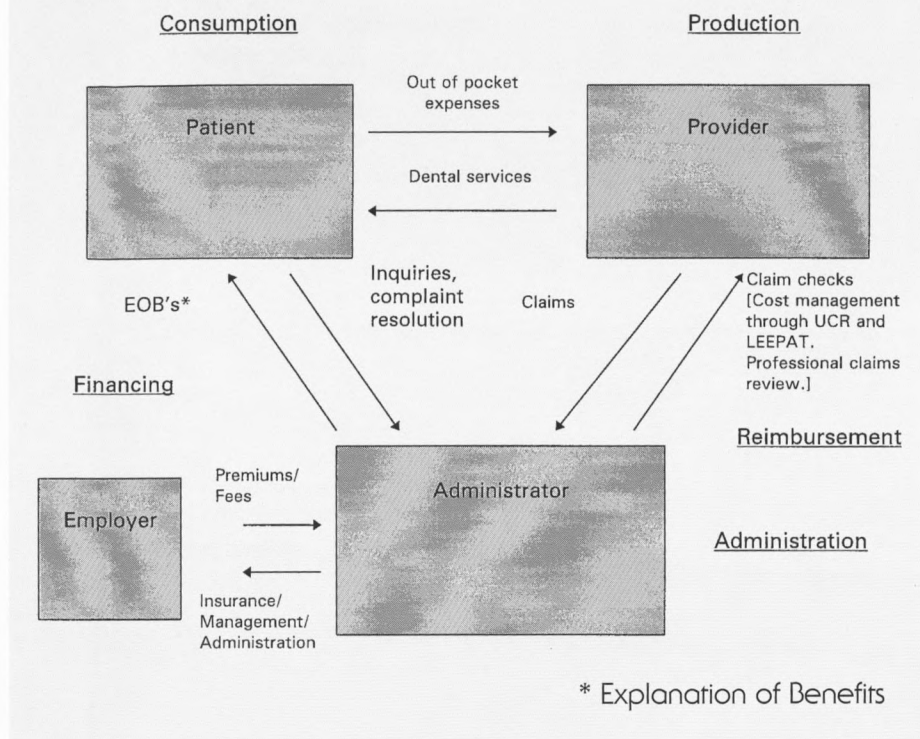
practice in "group" settings, dentistry, by and large, is practiced solo. While fewer than 30% of self-employed physicians are in solo practice, 68% of private practice dentists in 1994 were in solo practice, while 20% worked with one other dentist (Kletke, Emmons, & Gillis, 1996; American Dental Association, 1996b). Limited group practice interaction minimizes peer review or quality control—tools that are frequently part of the daily routine of group practice and hospital-based physicians. As a result of the isolation of dentists, there is an opportunity for great variety in dental practice patterns. Thus when multiple treatment options exist, the deviation among dental providers with respect to the choice of care tends to be greater than exists in the medical care setting. This creates quality control

Figure 1. Funding Comparison by Source

Funding Source:	Government	Insurance	Patient
Medical	39%	50%	21%
Dental	4%	42%	53%

Source: Health Insurance Association of America, 1993.

Figure 2. MFFS System



cal and dental care is very differently distributed over funding sources. Figure 1 compares medical and dental care funding by source for 1993.

It is noteworthy that in 1993, the 128 million Americans who did not have any dental insurance and the insured Americans who made co-payments financed 53% of the dental care gross domestic product (GDP). By 1995, employer-provided dental care benefits had grown so that 46% of all companies in the U.S. and 95% of all large companies provide dental plan benefits for their employees (U.S. Chamber of Commerce, 1995). Over time, delivery formats and payment methods other than the TFFS have developed. Among these are the managed fee-for-service (MFFS) method, dental preferred provider organization (DPPO), and dental health maintenance organization (DHMO). Industry data indicate that currently, DPPOs and DHMOs each account for between 12% and 17% of the marketplace (National Association of Dental Plans, 1997). In the DPPO ar-

range, participating providers typically agree to discount their fees up to 20% in exchange for increased patient volume, while in the DHMO arrangement, providers are paid a per capita ("capitated") monthly fee to provide a defined set of services.

In summary, the dental care industry currently represents some \$47 billion dollars annually, or 4.5% of U.S. health care expenditures, and provides services which are generally quite manageable, delivered mostly in solo settings, with 53% of expenditures financed by the recipients.

Analysis

The basic economic framework developed in a companion article (van der Wal & Smithwick, 1997) provides the theoretical underpinnings for the analysis which follows. The operative terms of consumer preferences, marginal analysis, and agency theory are central to this analysis, and these accepted economic theories, models, and concepts are applied to examine both the MFFS and DR

approaches to solving the principal-agent problem. The problem is viewed from consumer, provider, and administrator behavior perspectives.

Figure 2 illustrates the dynamics of the MFFS dental care delivery and payment system. In this arrangement, patients, the first party, receive services from and make payments to providers, the second party. Administrators, the third party, receive claim forms from providers and pay claim checks to them. Administrators, acting on behalf of employers and employees provide insurance, management, and administration in exchange for premiums and administrative fees.

Figure 3 illustrates the marketplace dynamics of a DR dental care delivery and payment system. Patients, the first party, receive services from and make payments to providers, the second party. Patients/employees then present paid receipts to the employer and are reimbursed, based on a monetary level of benefits. In this passive role, employers reimburse employees for dental care expenses, but have no control over what or how much care is provided, i.e., control over provider behavior. Note that since there is no contractual relationship between providers and employers (either implicitly or explicitly), there is no flow between them on the diagram.

To analyze MFFS and DR side by side, two "level-setting" concepts need to be defined and explored. These concepts are benchmarking and third-party payer effects.

Benchmarking. As a result of increasing pressure from employers to control cost and manage clinical quality, administrative entities have developed tools for monitoring and evaluating plan performance. In applying these tools it is important to note what is being measured and to what it is being compared.

The current approach used by third parties to evaluate clinical performance is to use quantitative clinical procedure utilization benchmarks based on average utilization per procedure over a statistically significant population of patients by a group of providers. In the current en-

vironment it is not uncommon for providers and their representatives to characterize this approach as unfair. It should be noted, however, that the very benchmarks many providers eschew as unfair are based on comparison with aggregate peer activity, not on clinically-based outcomes research or on some arbitrary criteria. While it is obvious that aggregate peer activity is far from an ideal measure in the scientific sense, it represents the reality of dentist-reported procedures and thus, must be regarded as having some validity in measuring current marketplace activity.

Utilization profiles and management of providers created by data analysis have become an integral part of the dental benefit service provided by administrators/carriers to employers. In fact, many employers now require administrators to demonstrate utilization review competency through various means, including periodic reports. Furthermore, these experiential data are used by employers and insurers/administrators to quantify future risk exposure, set premium rates, develop plan design, and monitor and report plan performance.

The current practice of provider utilization benchmarking is taken as given in

the health care industry, and we make no judgment regarding its appropriateness relative to other options.

Third-party Payer Effects. It is well documented in health economics literature that the very existence of insurance or reimbursement from a third-party payer significantly affects purchasing decisions of consumers. Insurance and other third-party payments for health care distances consumers from direct contact with stated prices of health care services. As a result, participation of third-party payers increases demand by shifting the demand curve and reduces the price elasticity of demand, i.e., reduces the consumers' sensitivity to price (Folland, Goodman, & Stano, 1993; Enthoven, 1993).

Comparative Analysis

This analysis employs a compare and contrast format to evaluate the MFSS and the DR approaches to the delivery and payment for dental care. The evaluation is based on how both systems use the tools of dental plan design, plan financing and reimbursement, and plan management and administration to resolve the crucial problem to be addressed by any dental care delivery system—the

principal-agent problem and thereby attempt to drive the market towards an efficient outcome. This issue, discussed in some detail in the companion article, arises because dentists have more information about both treatment alternatives and quality of treatment than patients do. The classical economic model of supply and demand does not function appropriately under these circumstances. It is replaced with an agency model where patients cede part of their market decision making to dentists who become, in effect, both the agent and the supplier of services. As A. J. Culyer (1989) notes, agency is only an acceptable alternative to the market mechanism for optimally distributing limited resources under a condition known as "perfect agency" where "the provider chooses the way the individual [patient] would, had he or she been possessed of the same informational advantages as the professional."

Dental Plan Design. Plan design is the term used to describe the attributes of a plan that determine the type and level of benefits covered. Typical plan design features include services covered (including frequency and age limitations), services not covered, and the level of consumer financial participation, i.e., copayments, deductibles, and maximums.

A plan design feature that has gained popularity over the past ten years is the "least expensive professionally acceptable alternative treatment" clause, or LEPAAT. This clause essentially states that "when multiple, equally efficacious treatments for a condition exist, the plan will pay for the least expensive professionally acceptable alternative treatment." This provision is designed to assist administrators in dealing with provider behavior known as "upcoding," the practice of providing a more intense, expensive treatment (e.g., crown) when a less expensive alternative treatment would be just as, or more effective (e.g. filling).

Under MFSS plans, employers, managers, and administrators typically cooperate to create well-designed plans in an effort to efficiently guide the allocation of scarce resources to their highest-valued use. This is done by creating incen-

Figure 3. DR System

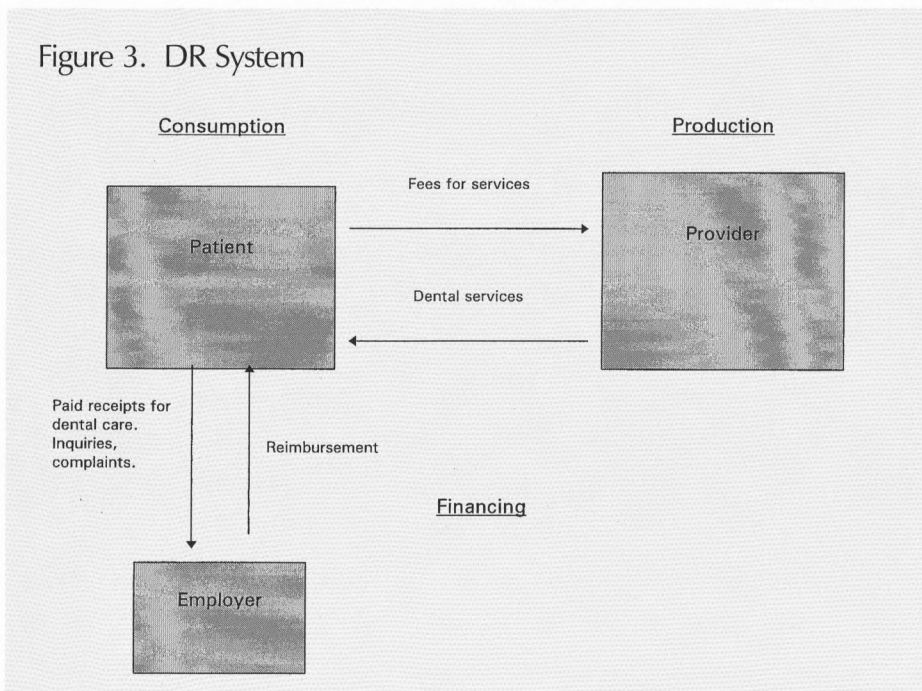


Table 1. Managed Fee-for-Service Plan

Service	Charge**	Allowed***	Benefit (employer share)	Balance (employee share)	Total cost to EE	ATC to EE
Prophy (x2)	\$106	\$78	\$78	0	0	0
FMX	\$74	\$54	\$54	0	0	0
2 surface amalgam	\$86	\$63	\$25.40	\$37.60	\$37.60	\$9.40
Gold crown	\$669	\$488	\$244	\$244	\$281.60	\$56.32
3 unit bridge	\$1,908	\$1,393	\$598.6	\$794.40	\$1,076.00	\$134.50
Total	\$2,843	\$2,076	\$1,000	\$1,076	\$1,076.00	

* Model assumes no balance billing (i.e., patients are not responsible for the excess of billed over allowed; must pay copayments and deductibles only). Note: Premium costs for insured plans and administrative costs for ASO plans are not addressed here.

**Charges based on NDAS fees at the 70th percentile (national average)

*** See definition of allowable fees, page 30.

**** Note: benefit less deductible: $[(63)(.8)] - 25 = \$25.40$

tives for providers to behave as perfect agents and for patients to behave as well-informed, price-conscious consumers. When these goals are accomplished, transaction costs are reduced and, theoretically, a more optimal mix and level of services is provided to the patient population.

Plan design influences consumer behavior through differential financial incentives intended to encourage patients to prefer preventive and diagnostic services over major (restorative) services. For example, many plan designs encourage use of preventive and diagnostic services by covering them at 100%, while major restorative procedures may be covered at 50%. In this limited example, patients under an MFFS plan are encouraged to be more price conscious when making consumption decisions regarding high cost and high copayment services and will tend to question provider treatment recommendations for these services. In short, the tool of dental plan design may reduce transaction costs by making consumers better-informed, more price-conscious demanders of dental care services.

The same plan design mechanisms used to manage consumer behavior are

also employed to manage provider behavior. Providers are aware of plan design incentives and how the level of consumer financial participation affects the patient's sensitivity to price. As we saw above, under an appropriately designed dental plan, it becomes significantly more difficult for providers to successfully and regularly recommend high cost, marginally beneficial services to patients.

In the DR arrangement, plan design as it is currently defined does not exist. The benefits provided under a DR system are defined by the dollar amount of reimbursement only and clinical management through provider and patient plan

design incentives are absent. Therefore, in a DR arrangement, providers do not have any plan design incentive to act as perfect agents.

Since plan design incentives are eliminated under DR, transaction costs will be higher than they would otherwise be, since an additional burden is placed on consumers to acquire information regarding current dental health status, treatment options, and likely outcomes. While consumers under a MFFS plan are also ultimately responsible for obtaining this information, a well-designed plan creates incentives for consumers to prefer an "economically optimal and clinically appropriate" treatment mix and disincentives for providers to recommend certain procedures which do not meet this criterion, i.e., excluded or high-copayment procedures. In short, the tool of dental plan design results in overall lower plan experience and reduced transaction costs compared to the alternative.

The DR arrangement places the responsibility for the best use of limited benefit dollars exclusively in the hands of employees/consumers, and thus the right of the consumer to choose the provider, type, and level of care is preserved. Economists describe this "right to choose" issue as "consumer sovereignty," which states that in a perfectly competitive market, i.e., complete, symmetrical information and zero transaction costs, an optimal outcome will result if consumers are free to make all consumption choices. However, consumer sovereignty

Table 2 Direct Reimbursement Plan

Treatment	Charge	...	Benefit (employer share)	Balance (employee share)	Total cost to EE	ATC to EE
Prophy (x2)	\$106	...	\$104.80	\$1.20	\$1.20	\$0.60
FMX	\$74	...	\$59.20	\$14.80	\$16.00	\$5.33
2 surface amalgam	\$86	...	\$68.80	\$17.20	\$33.20	\$8.30
Gold crown	\$669	...	\$434.70	\$234.30	\$267.50	\$53.50
3 unit bridge	\$1,908	...	\$332.50	\$1,575.50	\$1,843.00	\$230.37
Total	\$2,843	...	\$1,000	\$1,843.00	\$1,843.00	

does not apply in the dental care marketplace because of asymmetrical information and the principal-agent problem it creates. Consumer sovereignty would apply to the dental care marketplace if, and only if, dentists behaved as perfect agents.

Since consumers derive both outcomes (the treatment) and process (the manner in which the care is delivered) utility (satisfaction) from the consumption of dental care services, the concept of consumer sovereignty is actually quite complex under a DR arrangement. Because process utility preferences are known only to the consumer, it is possible for providers to act as perfect agents with respect to process utility simply by learning what type of process-utility yielding behavior consumers desire (i.e., caring attitude, pleasant environment, certain types of information) and then providing these services. Process utility differs from outcomes utility in that consumers have an incentive to reveal their process-utility preferences to providers, while providers have an incentive not to reveal all outcomes information to consumers.

For the provider to act as a perfect agent, he or she will need to behave in such a way as to maximize total consumer utility by allocating services between process utility-yielding and outcomes utility-yielding activities. Just as in the case of process utility, in the case of outcomes utility, asymmetrical information exists because only providers know the likely outcome of a specific treatment. Thus it holds that consumer sovereignty would not apply. Dentists do have an incentive to act as imperfect agents, and third-party payers perform an economically beneficial service by monitoring and enforcing provider compliance with both implicit and explicit agreements. These monitoring activities place constraints on provider profit-maximizing behavior.

Tables 1 and 2 illustrate the potential impact on provider income and patient out-of-pocket expenses of both a MFFS plan design and a DR arrangement. Two

designs are compared: a MFFS 100/80/50 (i.e., preventive/basic/restorative) plan with a \$1,000 annual maximum and a \$25 annual deductible (preventive/diagnostic exempt), and a similar DR arrangement with an annual maximum of \$1,000 and the following reimbursement levels: 100% of the first \$100 of expenses, 80% of the next \$500, and 50% of the next \$1,000.

In Table 1, the MFFS plan, total revenue to the provider (assuming no balance billing) is \$2,076, while the shares paid by the third party and patient are \$1,000 and \$1,076 respectively. Average price per unit (each unit being an independent service) is \$259.50.

In Table 2, the DR arrangement, total revenue to the provider is \$2,843, while the shares paid by the third party and pa-

Third parties close the information gap, thus lowering transaction costs and the cost of dental care delivery in total.

tient are \$1,000 and \$1,843, respectively. Average price per unit is \$355.57.

In comparing Tables 1 and 2, it is clear that for an equivalent mix of services, the DR plan results in greater revenue to the provider by \$767.00, higher out of pocket cost to the employee by \$767.00, and a higher per unit price by \$95.87.

In conclusion, dental plan design incentives are used in MFFS plans to resolve the principal-agent problem by influencing provider and consumer behavior to achieve an economically optimal allocation of resources. Under a DR system, where these incentive management tools are absent, consumers bear full responsibility for provider behavior management, and the principal-agent problem is exacerbated through the combination of cost-unconscious demand and

asymmetrical information biased in favor of providers.

Dental Plan Financing and Reimbursement

Two very important drivers at work in dental plan cost are financing and reimbursement. Financing refers to the level and distribution of financial risk, while reimbursement refers to the independent method a third party uses to determine the amount it will pay against a provider fee.

MFFS dental plans are financed through either fully-insured or self-insured arrangements. In a fully-insured plan, an insurance company insures against risk (as defined by fluctuations in cost) by charging a monthly premium based on estimated dental care delivery costs built up from utilization assumptions, a risk premium, and administrative costs.

A popular, and a generally less costly alternative funding arrangement, is self-insurance. Under self-insurance, the employer pays an administrator to set up and administer the plan, including paying claims and filing all necessary documents, contracts, and regulatory filings. In exchange, the employer pays a monthly administrative fee. Self-insurance shifts the risk for the cost of care (plan experience) from the insurance company/administrator to the employer. The self-insured party assumes the risk otherwise covered by a risk premium in a fully-insured plan. The availability of stop-loss insurance, whereby self-insured employers can purchase policies to limit total financial liability due to unforeseen utilization patterns, facilitates self-insurance.

DR can be considered a self-funded arrangement from the standpoint that employers do still assume risk for treatment cost, subject to the maximum limit. But, because DR is not a dental plan, it is misleading to refer to DR as a "self-funded dental plan," as some DR promotional literature has described it.

The methodology used to determine provider reimbursement is another important determinant of dental plan

claims costs. Third-party payers generally do not pay providers based on fees submitted by the provider, but based on what the third party allows for a specific service, the "allowable amount." The provider is paid the lesser of the amount submitted or the amount allowed. Under MFFS plans, the most common method used by third-party payers to determine allowable fees is the "usual, customary and reasonable" (UCR) method.

Under a UCR fee-determination method, third-party payers gather data on fees submitted per geographic region to establish the fee charged in the marketplace. The gathered data are organized into percentiles. Typically, allowable fees per procedure are derived from reading the fee associated with providers at the seventieth to ninetieth percentile.

There is mixed opinion whether UCR creates upward or downward pressure on prices. Downward pressure is created by the sentinel effect of a third party reviewing submitted fees and by consumer questions about the gap between submit-

In summary, both dental plan financing and reimbursement play important roles in managing the cost of care. The financing model of self-insurance has become more common in recent years for MFFS plans due to the availability of stop-loss insurance. With respect to provider fee determination, the MFFS system uses a UCR-based method to determine provider reimbursement, while under a DR arrangement these controls would be eliminated.

Plan Management and Administration

Dental plan management and administration involves all functions necessary to manage a dental plan, including, but not limited to, dental plan design development and implementation, accounting, legal, actuarial, and underwriting functions, clinical care management (through utilization review and management), and audit and fraud-prevention activities. Under current MFFS plans, administrators reduce dental plan management transac-

defined population using the least costly mix of resources. UM/UR includes, but is not limited to, claims review, provider profiling and audits, provider and consumer behavior management, and the integration of fee monitoring and control through the UCR system of reimbursement.

The management and administrative functions under a DR arrangement are essentially limited to accounting functions, i.e. tracking the receipt of bills and issuing checks for reimbursement according to a formula. There is no vehicle to assess clinical performance on an ongoing basis. That is, financial and clinical quality audit functions that are now common in the industry among dental plan administrators, are non-existent under DR. In addition, there is no formal mechanism for resolving patient complaints, although occasionally ADA members may be subject to peer review, i.e., when a consumer files a complaint with a local dental society. However, approximately 30% of practicing dentists are non-ADA members and therefore may not be subject to professional review.

A DR arrangement does not allow employers to verify that funds intended for beneficiary dental care were, in fact, used for that purpose. This problem stems from the fact that there are no claim forms and, therefore, no audit trail exists. Diversion of benefit funds for non-dental use is nearly impossible to detect. DR literature states that employers will benefit from reduced administrative costs, thus leaving more benefit dollars available for clinical care. Under a DR arrangement, administration costs are said to range from 5% to 10% of total plan cost in contrast to between 10% and 30% for other plan types (MFFS, DPPO, DHMO) (National Association of Dental Plans, 1997; Georgia Dental Association, 1994).

According to the ADA, administrative cost savings come through removing administrative inefficiencies, eliminating unnecessary services, and bringing the remaining services in house (or by outsourcing them). The benefit to providers of reduced administration is lower

A *DR arrangement does not allow employers to verify that funds intended for beneficiary dental care were, in fact, used for that purpose.*

ted and allowed fees. Upward pressure can be created when providers exchange information regarding submitted fees.

The ability of third-party payers to collect and analyze submitted fee data serves an important economic function. These third parties gather information to close the information gap discussed above in a very efficient manner, thus lowering transaction costs and the cost of dental care delivery in total.

In a DR arrangement, the gathering of price data is not possible (because there are no claim forms) and, therefore, this tool designed to close the information gap between providers and consumers is not available. In the absence of third-party protection, the consumer pays higher prices because of the information advantage of the provider.

tion costs by coordinating activities between employers, employees, and providers to facilitate the efficient provision of dental care services. Most employers with more than fifty employees choose to outsource dental plan administration because it is less costly than performing these functions internally.

In response to employer demands for cost and clinical management, administrators have developed methods for assessing clinical performance. Administrators seek to limit the ability of providers to take advantage of their superior information by what is collectively referred to as utilization management/utilization review (UM/UR). UM/UR uses various tools to manage provider and patient behavior to achieve an optimal outcome, i.e., greatest level of dental health for a

cost (no claim forms, claim denials, utilization review, balance billing, or audits) and greater freedom to determine price, type, level, and mix of services. However, the reduced administration costs come at a price. First, there is the often overlooked cost of bringing the limited accounting functions in-house to a non-identified cost center. Second, increased dental benefit costs can easily result from a lack of utilization monitoring. Third, the lack of sentinel effect will allow prices charged to rise at a rate greater than they would otherwise. Thus, money saved on administrative costs paid to third-party payers, may well be more than offset by increased in-house administration and clinical care costs.

A recent resolution by the California Dental Association (CDA), a component of the ADA, called for increased expenditures for the DR promotional campaign, to include "addressing third-party administration of DR, checking legal issues relating to discounts, developing the concept of 'electronic DR,' and otherwise expanding the scope of the campaign" (California Dental Association, 1997b). This compromise to mimic the current MFFS system indicates recognition by the CDA of the unwillingness of the marketplace to embrace a system that would seek to eliminate most of the controls on provider and consumer behavior currently in place.

From the employee perspective, a DR arrangement creates a harsh cash flow reality. Under DR, the consumer is expected to make payment in full to the provider, subsequently submit for reimbursement to the employer, and wait to receive benefit payment. In contrast, under a MFFS plan, a consumer pays only his or her percentage of the contractually determined treatment cost and any deductible. The DR cash flow problem for the consumer could be considerably exacerbated for large families.

Results and Discussion

In a DR arrangement, most management and decision-making responsibilities are placed in the hands of employees who labor under the burden of an information gap, leaving third-party payers in

a passive role, primarily limited to financing and accounting activities. By contrast, MFFS plans actively address the information gap problem in the dental care industry. The result is that MFFS plans promote economic efficiency while DR arrangements do not.

A second issue identified is the principal-agent problem created by the information gap. In MFFS plans, the tools of dental plan design, plan financing and reimbursement, and management and administration are applied to manage the

poles together in the DR arrangement. For DR to become accepted in the dental care marketplace of today, it would first need to incorporate the management tools of dental plan design (including deductibles, copayments, and exclusions), third-party administration, broker commissions, and ultimately utilization review. In this case, only the names of the companies would differ.

In summary, the disparate solutions of MFFS and DR to the asymmetrical information issue, the principal-agent is-

From the employee perspective, a DR arrangement creates a harsh cash flow reality.

principal-agent problem. In the DR arrangement, no tools are systematically applied to solve the principal-agent problem, leaving individual consumers to fend for themselves without any real market power. The result is that transaction costs are significantly higher under a DR arrangement.

The third issue identified is the subject of incentives. Incentives in the dental care industry compared to the theoretical ideal reveals that both providers and consumers attempt to act in their own self-interest. The degree to which each party is successful in asserting its own interest varies between MFFS and DR. In MFFS plans, third party entities construct limitations on providers' ability to achieve their self-interest, i.e., profit maximization, through pre-treatment review, post-treatment review, UCR-based reimbursement, and provider profiling. In the DR arrangement, no such construct exists and providers are relatively free to act as imperfect agents and thus maximize profit. As the comparison of Tables 1 and 2 demonstrated, the result is that under a DR arrangement the revenue to providers, the out-of-pocket cost to employees, and the unit price are all considerably higher than under a MFFS plan.

In short, MFFS plan tools enable the poles of consumer and provider incentives to approach each other. No structural tools exist to draw the incentive

sue, and the incentives issue result in vastly different levels of economic efficiency and resource allocation.

Conclusions and Implications

We conclude that MFFS plan concepts are based on dealing with the realities of the information gap, the principal-agent problem, and the incentive problem. In contrast, the DR arrangement is based on the unrealistic claim that consumers are well informed, that providers behave as perfect agents, and that third party entry into the provider-consumer relationship does not add value.

Furthermore, we conclude that the DR arrangement, if it became prevalent, would result in greater levels of economic inefficiency than is even currently present in the dental care marketplace. We predict four unacceptable results from extensive DR arrangements. First, higher average prices for dental services will occur since there would be no institutional restraints. Second, the mix of dental services would change with the expectation that lower levels of preventive services and higher levels of high cost, marginally beneficial services would result since there would be no institutional utilization restraints. Third, higher average prices paired with higher utilization will compel employers providing dental benefits to reassess the wisdom of this decision. Fourth, employees will

consume fewer dental services as their out-of-pocket share of the rising provider bill increases.

Given the assumptions of the model, the expected result under a DR arrangement is additional financial burden to employees and employers, greater utilization of high cost, marginally beneficial services, lower utilization of routine, preventive services, and higher average dental care prices over time.

Finally, the dental profession will not be able to insulate itself from the realities of twenty-first century global economic competition. This competition has resulted in the mandate by American business for greater cost and quality management and accountability from all vendors. In a third-party payer system, dentists are vendors to American business and thus are subject to the same inescapable economic laws as are all participants in the marketplace.

Our analysis has shown that DR arrangements are not consistent with eco-

nomic principles and thus will not escape the consequences. We recommend that further research be done to increase the efficiency of dental care delivery consistent with these basic economic principles and evolving scientific knowledge such as clinical outcomes research.

References

- American Dental Association (1996a). *Direct reimbursement, the dental plan for smart companies*. Chicago, IL: The Association.
- American Dental Association (1996b). *The 1995 survey of dental practice*. Chicago, IL: The Association.
- California Dental Association (January 1997a). ADA's DR push begins in earnest. *CDA Update*, 9, 1.
- California Dental Association (March 1997b). Trustees tell DR to reconsider. *CDA Update*, 9, 1,3.
- Culyer, A.J. (1989). The normative economics of health care finance and provision. *Oxford Review of Economic Policy*, 5, 34-58.
- Delta Dental Plans Association (1996). *Facts and figures report on the dental benefits market*. Chicago, IL: The Association.
- Enthoven, A. (1993). The political economics of health care. Unpublished lecture given at Stanford University, Palo Alto, CA, Fall 1993.
- Folland, S, Goodman, A.C., and Stano, M. (1993). *The economics of health and health care*. New York, NY: Macmillan.
- Georgia Dental Association (November 1994). Dental insurance is obsolete. *GDA Action*, 20.
- Health Insurance Association of America (1993). Washington, DC.
- Kletke, P.R., Emmons, D.W., and Gillis, K.D. (1996). Current trends in physicians' practice arrangements: from owners to employees. *Journal of the American Medical Association*, 276, 555-560.
- National Association of Dental Plans (1997). *National dental benefits industry 1996 census and directory*. Dallas, TX: The Association.
- U.S. Chamber of Commerce (1995). *Employee benefits*. Washington, DC.
- U.S. Congress (1996). *Economic report to the president*. Washington, DC: U.S. Government Printing Office.
- van der Wal, C.J.P., and Smithwick, C.L (1997). Introduction to some fundamental concepts in the economic analysis of dental care delivery. *Journal of the American College of Dentists*, 64, No. 3, 37-42.

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Introduction to Some Fundamental Concepts in the Economic Analysis of Dental Care Delivery

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Abstract

This paper discusses some basic economic principles and concepts and how they relate to the analysis of dental care delivery. The fundamental theories of consumer behavior, profit maximization, information and transaction costs, and agency are considered. It is asserted that the information gap existing between patients and providers gives rise to a principal-agent problem, the operative element of this paper. The authors conclude that while under managed fee-for-service (MFFS) delivery systems, third-party administrators use financial, administrative, and utilization management tools to guide consumer and provider behavior, to reduce the size of the information gap, and achieve a more efficient allocation of resources, this does not occur under direct reimbursement (DR).

To analyze the specific marketplace phenomena of the dental care industry, the basic principles of human behavior at work need to be identified and placed in a conceptual context. We rely upon established economic modeling tools to evaluate the market for dental care services. An economic model is an intellectual construct with the purpose of analyzing variables and predicting how each

of these variables will respond to changing conditions. Models are valuable because they ensure analytical consistency and help to focus an analysis on the essential features of the problem to be evaluated.

Economic research and modeling are based on such long-accepted concepts as the law of scarcity and diminishing marginal utility, as well as contemporary work on the nature of contracting. Economic models now include application of such concepts as the economics of information, transaction costs, and agency problems.

In fact, the 1996 Nobel Prize in Economics was awarded to two pioneers in this field, William Vickery and James Mirrlees. The collective works in economics, from ancient times to the present, form a body of accepted economic principles. We draw our theoretical framework from this body of principles for analysis of the dental care industry.

Both the managed fee-for-service (MFFS) and the direct reimbursement (DR) systems can be evaluated using a model of economic efficiency. Economic efficiency is defined as "producing what people want, in the quantities they want, for the least possible cost." In the context of the dental care marketplace, economic efficiency occurs when consumers are provided maximum value in exchange for the limited funds available for dental care services.

The framework will first address the unique characteristics of patient (consumer/demander) behavior, dentist (provider/supplier) behavior, and third party (administrator/insurer) behavior, and will secondly address the multiple facets of the agency problem created by the interaction of these three parties.

Consumer Behavior

The human condition is limited in economic terms by finite resources, e.g. land, time, etc. Out of this limitation comes the necessity for individuals to efficiently allocate their budgets.

In analyzing consumer behavior, neo-classical economic theory, with origins more than two hundred years ago, states that individuals have differing prefer-



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ences or tastes which are known only to them and form the basis of their budgeting decisions. Preferences are defined as individual valuations of goods and services made independently of budget and price considerations. Preferences are assumed to be stable and are taken as given (i.e., determined outside of the model). An individual's preferences arise from the satisfaction or "utility" that goods or services provide. When making consumption choices, individuals seek to make their utility, or degree of satisfaction, subject to certain constraints such as their available budget (Mansfield, 1985). This is known as the basic neo-classical model of consumer behavior.

The theory of utility maximization arises from this basic postulate of consumer behavior. Using the tool of marginal analysis—weighing what happens at the next increment—this theory states that given tastes and preferences, consumers follow a basic decision rule when making consumption choices: "Given that budget dollars are scarce, they will be spent in an orderly fashion. The first dollar spent will boost one's utility by the greatest amount possible. The next dollar spent will boost utility by the next greatest amount possible. And so on, until all budget dollars are spent. Getting the most utility out of each added dollar spent results in the highest overall utility allowed by one's budget" (Froyen & Greer, 1989, p. 130).

Marginal analysis allows one to make a distinction between the marginal, or incremental, decision process and the ultimate objective of maximizing total utility. The total utility of a good is the entire satisfaction one derives from consuming that good. To reiterate, marginal utility, in contrast, measures the additional satisfaction one gets from consuming an additional unit of that good.

Marginal utility typically declines as the number of units consumed increases. That is, the first several units consumed of some commodity typically give greater satisfaction than later units of the same commodity. For example, the first cold soft drink you have on a hot day tastes

very refreshing. The second may also taste good, but will not be nearly as satisfying. And those beyond the second may yield no utility. Economists have generalized the term for this common experience into the law of diminishing marginal utility. This "law" states that as a person consumes more and more of a given commodity, the marginal utility of the commodity eventually declines.

Given a fixed budget for goods and services, how do consumers maximize total budget utility? The decision rule for maximizing total budget utility, "maximum satisfaction requires that the marginal utility per extra dollar spent on any good be the same as the marginal utility per extra dollar on every other good" (Froyen & Greer, 1989, p. 134), is applied.

When the terms of the above rule are fulfilled, consumer equilibrium is achieved. Satisfaction cannot be im-

As owner-operators of firms, dentists are profit maximizers.

proved by spending less on one good or service and more on another. Or, stated another way, given a fixed budget, the consumer has gotten the greatest return possible from his or her budget.

In short, individuals seek to maximize their utility, or overall satisfaction, by allocating their budget (a fixed amount) between consumption choices such that their total satisfaction is maximized.

Another way to describe utility is to use a utility function, a mathematical relationship between utility and the determinants of utility, that is, all the variables, goods and services that enhance overall utility. In analyzing the demand for health care services, economists have traditionally held that individuals do not gain utility from the process of consuming health care services, but from the outcome of the process, e.g., improved health. Therefore, the variable called "health" in the utility function of con-

sumers causes them to seek health care services. The utility-maximizing decision facing the consumer is one of allocating a fixed budget between health-enhancing goods and services and all other goods and services.

Mooney and his colleagues (McGuire, Henderson, & Mooney, 1988; Mooney & Ryan, 1993) argue that patients not only derive satisfaction from health outcomes, or outcomes utility, but also from the process of consuming health care services, or process utility. These researchers contend that "health care may produce information, caring, warmth, interest, anxiety reduction, communication satisfaction as well."

If utility-maximizing behavior in the consumption choice of dental care services involves both process and outcomes utility, then total utility is maximized when the dental care budget is allocated between services that yield process utility (cosmetic services, consultations, diagnostic care, oral hygiene instruction) and those that yield outcomes utility (a filling, a crown, a gingival graft) such that the marginal utility per extra dollar spent on process services is equal to the marginal utility per extra dollar spent on outcomes services.

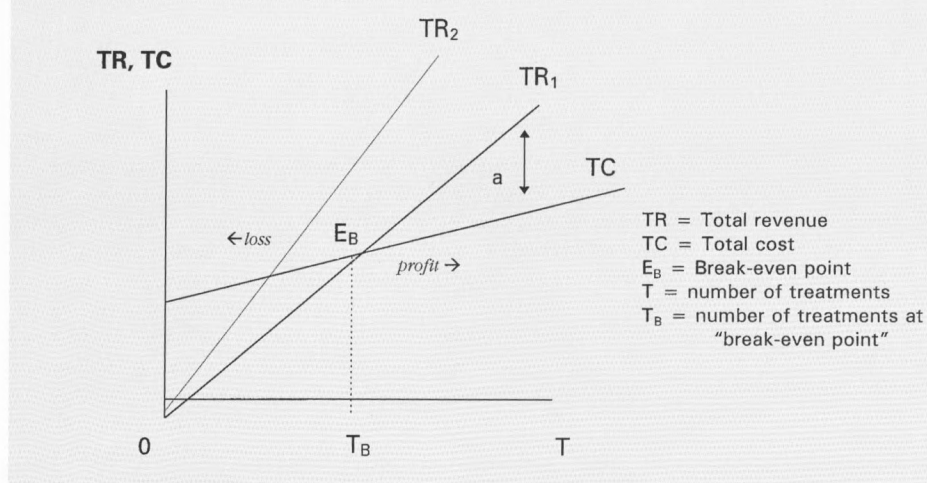
It is worthwhile to note, given the above, that the concept of process utility raises the question "should providers provide solely health-enhancing activities, or also activities which, although having no direct impact on health, may be desired by patients for other reasons?" (Clark & Olsen, 1994).

Provider Behavior

In economic terms, once a dentist has allocated his or her finite resources of the time, effort, and money required to obtain a dental license and establish a practice, the dentist becomes the owner-operator of a firm. Firms are entities that transform inputs into some product or service that is sold in the marketplace. Contemporary economic theory states that firms are, in general, profit maximizers.

As owner-operators of firms, dentists are profit maximizers—that is, they have

Figure 1. Break-even Analysis



an economic interest in maximizing the profit of the dental practice. In this environment, there is perfect alignment between the objectives of the owner (investor/dentist) and the objectives of the operator (provider/dentist), that is, profit maximization. When the provider is not the owner, typical incentive structures of providers bring the interests of providers in line with those of the owners through payment based on a percentage of production. Therefore, either directly, (provider/owner) or indirectly, (incentives for the provider/employee), the profit motive dominates provider economic behavior.

Other motives may also be at work in directing provider behavior. Altruistic behavior—unselfish regard for, or devotion to, the welfare of others—is a recognized phenomenon in health care delivery. In dentistry, institutional mechanisms such as the ADA Code of Ethics and the Patient's Bill of Rights provide additional checks to the potentially conflicting provider incentives of profit maximization. Dental associations have had a long history of advocacy for such public health prevention programs as water fluoridation and school fluoride programs. Dentists not only make decisions regarding day-to-day operations as business professionals, but also make personal and lifestyle decisions that enhance their "sat-

isfaction." This analysis evaluates provider behavior from the "provider as firm" perspective, while recognizing that other motives may also exist.

Both the MFFS and DR systems can be evaluated using a model of economic efficiency (see the companion article in this journal, van der Wal & Smithwick, 1997). In the context of the dental care marketplace, economic efficiency occurs when consumers are provided maximum value in exchange for the limited funds available for dental care services. The

practice. While both short-term income stream and long-term income stream and sales price objectives exist side-by-side, the long term objective of practice value maximization can modify short-term behavior and adversely affect long-term practice value. For example, short-term treatment planning decisions for an individual patient affecting current year dental practice profit may be modified by long-term value considerations in the form of postponed treatment until the services are clinically undisputedly warranted. [Some behavior of dentists which is viewed as altruistic in the short run can equally be understood as contributing to the long-term value of the practice.]

According to economic theory, a provider will employ inputs (capital and labor) until the cost of the last unit of the input is only just equal to the value it contributes to the last unit of production. This is a parallel approach to that taken by the consumer in maximizing his or her utility. In economic terminology, this occurs when marginal factor cost equals marginal revenue product. The variables under direct provider control in any fee-for-service system that can be influenced to achieve profit maximization are: the number of treatments (t), the price of treatment (p), and the mix and level of inputs employed. The cost of

These third party firms have the ability to reduce transaction costs in the delivery of dental care.

principle of profit maximization includes both the short-run objective of maximizing total revenue over total cost (total revenue minus total cost) as represented by the dentist's pre-tax take-home pay (profit), as well as the long-run objective of maximizing the net present value of the firm/dental practice. The net present value of the firm is the aggregate lifetime income stream plus the eventual sales price, corrected for fluctuations in the cost of money, and is a convenient summary of the overall value of a dental

the inputs themselves (usually noted by w , the wage rate) are taken as given and are, therefore, beyond the control of the dentist.

Figure 1 uses break-even analysis to demonstrate how under a FFS system, the price of treatments and the number of treatments are both sources of profit to the provider. Note that lowering total cost will also increase profits and that profit is maximized when the vertical distance, a distance between total revenue (TR) and total cost (TC) is maximized.

Third Party/Administrator Behavior

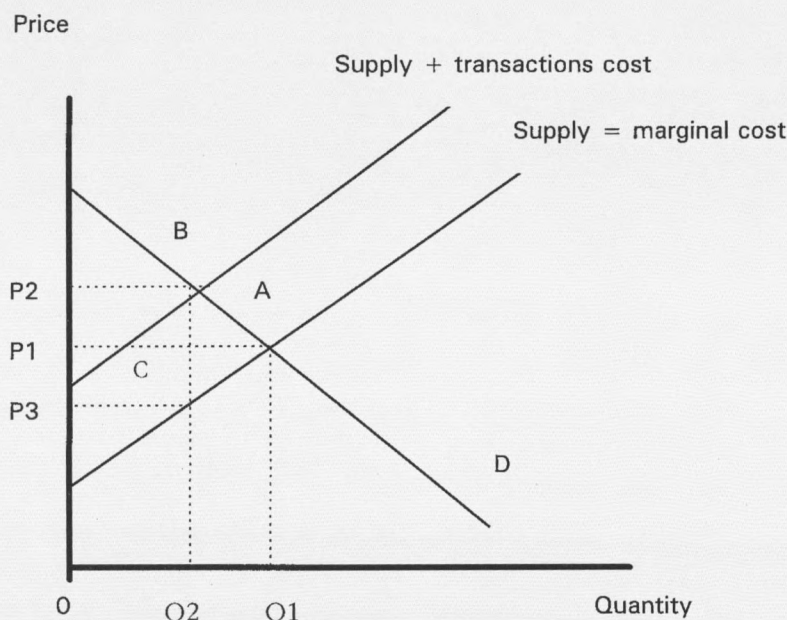
In the dental care industry, third parties, whether they fall into the major categories of administrators or insurance carriers, are also firms. As such, they are, just like providers, profit maximizers and, therefore, the model of profit maximization developed in the previous section applies. Because there are multiple forms of business organization, i.e., for-profit, not-for-profit, etc., it is recognized that the basic profit-maximization model may function somewhat differently in each of these organization types. For example, some may emphasize short-run profit maximization, others will emphasize long-run profit-maximization, and still others may attempt to maximize market share.

However, it is important to understand what value these particular firms add in the marketplace that allows them to exist. In his 1937 article, "The Nature of the Firm," Ronald Coase argued that the fundamental reason firms exist is the savings in transaction costs they create over the alternative of contracting in the marketplace at large with individual providers for all services. Specific to dental care, these third party firms have as their core competency the ability to reduce transaction costs in the delivery of dental care by organizing factors of production in a central location and allowing managers to issue directives and orders to workers. In short, the third parties add value by, and are thus paid to reduce transaction costs in the solo provider-dominated, uncoordinated dental care marketplace.

The Agency Problem

The articulated or understood exchange of fees for services (FFS) forms the contract for the traditional exchange of dental care services. In this basic two-party arrangement, the patient/consumer (demander of dental care services) receives care and pays the price of the service in full to the dentist/provider (supplier). This type of exchange typifies most market transactions and, therefore,

Figure 2. Transactions Cost Model



can be understood through traditional economic supply and demand analysis.

There is one reason, however, why this model is a poor fit for most forms of health care. Supply and demand analysis assumes that buyers and sellers have perfect information. Buyers are assumed to understand fully the attributes of the goods/services to be purchased, and sellers are assumed to understand purchaser preferences. In short, buyers and sellers both understand the true nature of the supply and demand curves for the products and services being exchanged. Thus, in the theoretical model of supply and demand analysis, there are no transaction costs to making the exchange—no one need make any outlays to gather needed information or ensure protection from a party having more information taking advantage of them.

Transaction Costs and Information Problems. The dental care industry does not lend itself to an ideal supply and demand model since it is characterized by both imperfect and asymmetrical information.

Dentists are limited by the current level of scientific understanding regarding the etiology of disease as well as outcomes of various treatment modalities. Thus, any reference to "optimal outcome" is made with the caveat that it assumes an ideal knowledge level of outcomes based on currently available, albeit limited, information.

The distribution of information between buyers (consumers/patients) and sellers (providers/dentists) is asymmetrical. This occurs because dentists possess greater relevant information and knowledge than patients do. This information asymmetry, or gap, between patients and providers creates market failure defined as a less than optimal outcome.

Exchanges for dental care services involve greater transaction costs than many other market exchanges due to the high cost of acquiring information. These transaction costs are in addition to production costs, which are the costs associated with executing the service. As illustrated in Figure 2, point A represents the

“ideal” market price and quantity (no transactions costs). When transactions costs are present, a wedge is formed between the price consumers pay (P2), and the price producers receive, (P3). The vertical distance between P2 and P3 (line BC) is the per unit amount of the transactions cost. Figure 2 illustrates the in-

formation regarding prices and the recommended type and level of care. An example of *ex post* costs are the costs associated with monitoring and enforcing fulfillment of the contract which is an implied agreement between patient and provider for performance of certain defined services. These *ex ante* costs might

viewer enables him or her to understand the “true” dental condition of the patient (subject to the limitations of current professional knowledge and research). Since consumers can only gain equal knowledge at great cost, they delegate the decision making authority regarding diagnosis, treatment planning, including consideration of the relative benefits, risks, and costs to the dentist/provider. In effect, the dentist becomes the actual decision maker on behalf of the patient and the consumer relies completely on recommendations of the provider.

The dental care industry does not lend itself to an ideal supply and demand model.

crease in price that results from market transactions under asymmetrical information.

Transaction costs take two forms: (a) the *ex ante* (pre-contractual) cost of contracting for services, and (b) the *ex post* (post-contractual) cost of monitoring and enforcing the contract for services (Coase, 1937). In dental care markets, both costs result from the asymmetry of information between patient and provider. An example of an *ex ante* cost is search and information costs, the time and effort needed to find and choose a dentist, make an appointment, gather in-

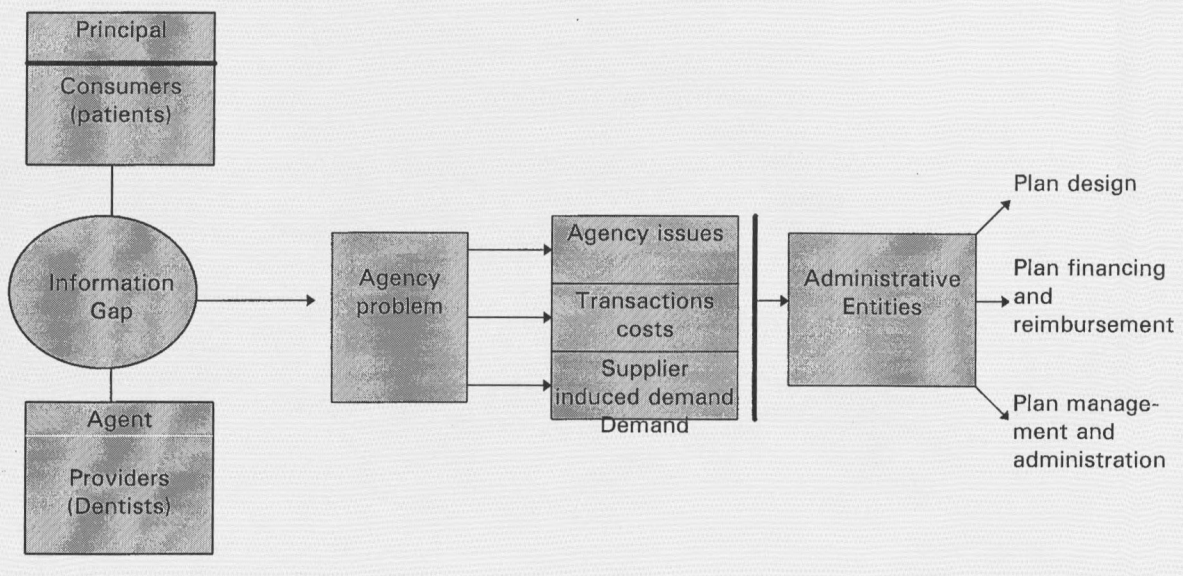
clude efforts to determine if the dentist charged a fair price, did a good job, etc., or for dentists to collect accounts receivable from patients. Managed dental care services in the post-1955 era of employee dental benefits arose from the need of employers to reduce the costs of transactions by resolving the problems created by asymmetrical information.

It is precisely the scientific and highly technical nature of dental care delivery that takes so much time, effort, and money to learn that creates the information gap problem. The specialized information possessed by the dentist/pro-

Principal-Agent Model

The relationship between patient and provider can be viewed as a principal-agent relationship. An agency relationship exists whenever a principal (a patient) delegates decision-making rights to another party known as an agent (the dentist) (Folland, Goodman, & Stano, 1993). Unless the interests of, and the information possessed by, the principal and agent are identical, which rarely occurs, a conflict of interest is created per definition. Since it was clearly established above that the interest of the consumer is to maximize utility and that the interest

Figure 3. Agency Model for Oral Health Care Delivery



of the provider is to maximize profit, such a conflict is created. Consumers are realistic. They know they lack information regarding dental care, and simply deem it practical and thus necessary to delegate the decision right to an informed agent (dentist).

A unique aspect of the principal-agent problem in the health care setting is that the patient doesn't just delegate the treatment choice decision, he or she

In effect, the dentist becomes the actual decision maker on behalf of the patient.

additionally delegates the actual treatment as well to the provider. Thus, as the principal's agent, the provider is both the "determiner of the need" and the "filler of the need" as well as being the "judge of the quality of the work." It is significant to note that because of this compound role, the agent as determiner of need may have an interest not to reveal all information to the principal, especially when profit as a "filler of need" can be maximized by doing so.

In the ideal economic situation, the dentist would behave as a perfect agent, making the same treatment decisions that the patient would make if the patient possessed the same information as

the agent and the result would be an optimal economic outcome. However, in reality, the compound role of the dentist as agent/supplier results in a conflict of interest problem resulting from the misalignment of incentives between the two roles, as well as between the principal and the agent.

Supplier-Induced Demand

In a specific application of the above, asymmetrical information allows providers to increase revenue by shifting demand to greater levels through sharing only selected information with patients and third parties. This phenomenon is known as supplier-induced demand (SID) and is now widely cited as an explanation why, under certain conditions, an observed increase in the supply of health care providers leads to an observed increase in prices—an outcome that is in direct conflict with economic theory (Folland, Goodman, and Stano, 1993).

Conclusion

Figure 3 on the previous page summarizes the various elements of the framework above. It demonstrates that, in the interaction between principals as consumers/patients and agents as providers/dentists, an information gap exists. This gap gives rise to an agency problem as discussed in the form of agency issues, transaction costs, and supplier induced demand. To fill the gap, third parties in the form of administra-

tors/insurance carriers fill the role of solving these agency problems through various plan design, financing and reimbursement, and management and administrative measures. These measures are analyzed in detail in the companion article in this journal.

References

- Clark, D., and Olsen, J.A. (1994). Agency in health care with an endogenous budget constraint. *Journal of Health Economics*, 13, 231-251.
- Coase, R. (1937). The nature of the firm. *Economica*, New Series, IV, 386-405.
- Folland, S., Goodman, A.C., and Stano, M. (1993). *The economics of health and health care*. New York, NY: Macmillan.
- Froyen, R.T., and Greer, D.F. (1989). *Principles of macroeconomics*. New York, NY: Macmillan.
- Mansfield, E. (1985). *Macroeconomics: Theory/application*. New York, NY: W. W. Norton.
- McGuire, Henderson, A.J., and Mooney, G. (1988). *The economics of health care: An introductory text*. London: Routledge and Kegan Paul.
- Mooney, G., and Ryan, M. (1993). Agency in health care: getting beyond first principles. *Journal of health economics*, 12, 125-135.
- van der Wal, C.J.P., and Smithwick, C.L. (1997). An economic analysis of managed fee-for-service and direct reimbursement. *Journal of the American College of Dentists*, 64, No. 3, 28-36.

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Glossary

Agency relationship. A situation in which one person (agent) makes decisions on behalf of another person (principal).

The agency problem. An agency problem exists when the agent who is a utility maximizer acts in his or her own interest and not exclusively in the interests of the principal.

Asymmetrical information. Situations in which the parties on opposite sides of a transaction have differing amounts of relevant information.

Consumer sovereignty. The freedom of individuals to choose the type and level of care where the price is the conduit of information. An implicit assumption of the concept of consumer sovereignty is that if consumers have perfect information and are free to make their own consumption decisions, market transactions will produce an efficient outcome.

Direct reimbursement. A method of providing benefits through which an employer reimburses employees directly for dental care expenses instead of purchasing insurance coverage or other fee-for-service (FFS) administra-

tive and oversight services from a third party.

Fee-for-service (FFS). A method of payment under which the provider is paid for each procedure or service that is provided to a patient.

Managed care. A general term applied to a broad range of actions which a firm or insurer establishes to maximize value by exerting some control over cost and quality—specifically, in dental care delivery, the initiatives to measure, monitor, and direct the allocation of resources for the purpose achieving an optimal outcome. Managed care elements can include, but are not limited to: (a) plan design, (b) utilization management through pre-treatment and utilization review, (c) fraud prevention, (d) fees based on group norms, (e) provider agreements, and (f) patient satisfaction surveys.

Managed fee-for-service (MFFS). A method of payment under which the provider is paid for each procedure or service that is provided to a patient, but with certain provisions which a firm or insurer establishes to control cost and quality.

Perfect agency relationship. In the perfect agency relationship, agents who have

been delegated decision-making authority are assumed to make the same set of choices that the principal would make if they possessed the same information.

Principal-agent problem. A situation in which one person (agent) makes decisions on behalf of another person (principal), but is not motivated in his or her actions solely by the best interests of the principal.

Supplier-induced demand (SID). The change in demand (increase) associated with the discretionary influence of providers over their patients. Demand that is provided for the self-interests of the providers rather than solely for patient interests.

Transaction costs. The costs associated with making a transaction, other than the price and the transportation costs. The transaction costs associated with any agreement are comprised of the following three components: (a) the cost associated with contracting the agreement, (b) the cost associated with monitoring the agreement, and (c) the cost associated with enforcing the agreement.

A Case for Diagnoses

James D. Bader, DDS, MPH
and Daniel A. Shugars, DDS, PhD, MPH

Abstract

It is common practice to record treatment rendered, but not the diagnostic basis for these treatment decisions. This practice appears to undervalue diagnosis, as well as hamper feedback to practitioners and the profession about the effectiveness of treatments relative to specific diagnoses. It also leaves dentists open to liability for litigation and impedes research. A case is made that dentistry should follow medicine in exploring the use of standardized computer-codable diagnoses as part of record keeping. A two-step process is suggested to promote initial acceptance.

Almost all dentists would claim they diagnose, and yet for routine treatment decisions it is difficult to support that claim from existing evidence. Patients' dental records typically do not contain formal written diagnoses for either of the two common dental diseases, caries and periodontal disease (Atchinson & Schoen, 1990; McFall, Bader, Rozier, & Ramsey, 1988). Often, not only is no diagnosis recorded, but the data upon which a diagnosis would be based are not recorded (Atchison & Schoen, 1990; Bader, et al, 1990; McFall, Bader, Rozier, & Ramsey, 1988; Morris, Bentley, Vito, & Bomba, 1988). All too frequently the dental record contains little more than a longitudinal listing of procedures provided to the patient and a collection of radiographs. Thus, while dentists debate how the dental diagnostic process operates (Bader & Shugars, 1997), the typical den-

tal record would suggest that no such process occurs.

Why Is This Situation a Problem?

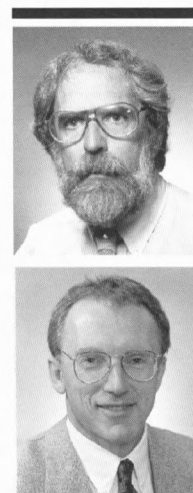
The fact that dentists do not routinely formalize the diagnostic process by recording a diagnosis in the patient record may hinder the profession in meeting several of its goals and obligations. First, the lack of diagnoses might be construed by critics as connoting the dentist's professional role as technician rather than diagnostician. Dentists have long claimed that a principal distinguishing characteristic in comparison with other oral care providers is their diagnostic ability. But if this skill is not documented, can it be assumed to have been applied? In a similar vein, dentists have long been dissatisfied that while they are reasonably well-reimbursed for the treatment they provide, the same is not true for the examination they perform. Could it be that they have helped to perpetuate this situation by not recording formal diagnoses and thereby not emphasizing the professional skills that comprise the examination?

Second, the absence of written diagnoses denies dentists an important source of feedback for their own efforts to maintain or improve the quality of their practices. Treatment plans often are prepared at the time of the dental examination and then implemented over several successive appointments. This separation between the decision to provide treatment and the provision of treatment can blunt the recognition of discrepancies or inconsistencies between what the dentist expected to encounter, i.e., the diagnosis, and what was actually found in the course of treatment. Without a written record of the diagnosis, it is all too

easy to ignore the discrepancy. Further, no retrospective analysis of the accuracy of diagnoses is possible from which to document improvement over time.

Third, not only is a dentist's personal feedback about an important aspect of the quality of dental practice lost, but documentation critical to external evaluation of practices also is foregone. The appropriateness of the treatment dentists provide is coming under increasing scrutiny (Bader, Shugars, Hayden, & White, 1996). A formal definition of appropriateness considers the balance of "expected benefits of treatment" and the "expected negative consequences" (Park, et al, 1986). But unless the condition treated is known, this comparison is impossible to make. In simpler terms, one can't determine if a treatment was appropriate unless one knows why it was done.

Fourth, in the ever more litigious environment in which care is provided, dentists also must ask themselves if the practice of not documenting formally



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the reasons for every treatment is a defensible behavior. Complete documentation of diagnostic data is a basic risk prevention strategy (Owens, Tennenhouse, & Kasher, 1990). Post-hoc assertions about the reasons for providing and not providing treatment are easily challenged.

Finally, the absence of written diagnoses is a substantial impediment to the advancement of knowledge regarding

One can't determine if a treatment was appropriate unless one knows why it was done.

treatment effectiveness and treatment outcomes. The profession needs better information about the treatment it provides for specific conditions (Bader & Shugars, 1995). Much, if not most, of this information must come from real-life dental practice, as opposed to the unrealistic environment of the clinical trial (Mjör & Wilson, 1997; Shugars & Bader, 1992). Yet, as noted, the opportunity to determine the benefits and consequences of treatment is lost if the condition being treated cannot be identified.

Should Dentistry Attempt to Change the Situation?

The question of whether dentistry should attempt to alter its traditional reliance on a procedure-oriented approach to documenting the care of patients should be considered from both internal and external perspectives. In part, the answer depends on how dentistry wishes to interact with the external environment, the purchasers and the recipients of its services. As "bottom line" pressures force purchasers to scrutinize their health care expenditures more closely, they are more likely to ask what they are buying and why they are buying it (Bader, Shugars, Hayden, & White, 1996). Dentistry is well-prepared to answer the first question, but not the second. Yet without an answer to both questions, pur-

chasers may become more reluctant to buy.

In part, the answer to the question also depends on the internal importance the profession places on the information potentially available if diagnoses were documented. Are dentists interested in determining if their diagnoses are accurate? Does the profession wish to have better information about the outcomes of the treatment it provides for dental diseases? Do dentists want to substantiate their claims to the unique ability to diagnose dental disease and to strengthen their arguments for the expectation of adequate reimbursement? If the answer to any of these questions is yes, then perhaps action is indicated.

What Might Be Done?

Although the simplest solution might seem to be to urge dentists to record all diagnoses in writing, there are two indications that this approach may not result in the benefits expected. First, when a fairly intensive effort to urge dentists to record periodontal diagnostic data was tested on a small scale, compliance was less than 50% (Bader, et al, 1990). Second, neither diagnoses nor diagnostic terminology are well-standardized, and the identification of non-disease related conditions that also lead to treatment is even more variable (Bader & Shugars, 1995). Yet standardization of diagnoses associated with specific criteria is a minimum requirement for all applications that combine diagnostic information from multiple dental practices.

A solution that appears more complex at the outset may well offer the best results for dentistry. This solution is the adoption of a standardized coding system for dental diagnoses. Such systems are in common use for medical care (World Health Organization, 1992/94; Côté, 1993), and notation of diagnostic codes along with procedure codes is now routine in office-based medical practice. While at least two diagnostic coding systems have been described for dental diagnoses (World Health Organization, 1995), their use has been far more limited. Adopting such a system in dentistry

will help resolve the problems of compliance and standardization. The codes will impart a measure of standardization simply by supplying standard terminology and definitions, although they will still be dependent on individual dentist's interpretations. The codes will reduce the recording burden for dentists, which should improve compliance. The increasing use of electronic dental record systems should help in both instances. Search and mapping functions can easily present a dentist with a list of possible codes and their definitions, and this information can be keyed to written or verbal prompts or entry of procedure codes for planned treatment. However, since several dental office systems are already programmed with idiosyncratic or "home grown" diagnostic code systems, the need for standardization is already an issue.

In adopting a set of standardized diagnostic codes, dentistry must address some thorny issues in the design of the coding system, including the level of detail of the system, the breadth of non-disease related reasons for treatment that are included, and the organizational structure of the system. For example, how "fine" do the distinctions need to be for a system destined to be implemented in general and specialty practice? Should fibromas be differentiated from papillomas or will a more aggregated descrip-

Standardization of diagnoses associated with specific criteria is a minimum.

tion such as benign neoplasm suffice? Similarly, how should diagnoses related to treatment for aesthetic improvement, or for elevated risk of tooth fracture be denoted? Also, should the system be organized around organ and tissue systems, around diseases, or around treatments, i.e., the existing ADA procedure codes?

A strategy that might make these decisions easier would be to promulgate a

dual set of diagnostic codes. A simplified or condensed set of codes would be designed specifically for the implementation period as dentists began to record their diagnoses in a standardized fashion. A list of no more than twenty such "reasons for treatment" could be developed that would satisfy virtually all treatment situations while preserving the basic information essential to benefit the patient, practitioner, and profession. These codes in turn would be compatible with a more detailed list, probably computer-based for ease of application, that would include all possible diagnoses. This two-stage approach acknowledges the realities that electronic record systems are not yet in widespread use and that a complex set of codes that requires dentists to refer to coding manuals will not be supported by the practicing profession.

Dentistry must address the need to formalize the documentation of the diagnostic process that is a central component of its claim to professional status. All sectors of the profession must acknowledge the problem and begin to participate in its solution. For example, AADS curriculum guidelines for oral diagnosis and oral medicine do not explicitly recommend recording diagnoses (American Association of Dental Schools, 1987). Also, although the ADA's Council on Dental Practice formed a

committee devoted to the development of a set of diagnostic codes in 1990, this committee has yet to produce a product. This lack of attention to the problem should not continue. The profession must begin to emphasize and facilitate the documentation of diagnoses. Dentistry, as well as individual dentists and their patients will benefit as a result.

References

- American Association of Dental Schools (1987). Curriculum guidelines for predoctoral oral diagnosis/oral medicine. *Journal of Dental Education*, 51, 555-558.
- Atchison K, and Schoen M. (1990). A comparison of quality in a dual-choice dental plan: capitation versus fee-for-service. *Journal of Public Health Dentistry*, 50, 186-193.
- Bader J, Rozier R, McFall W, Sams D, Graves R, Slome B, and Ramsey D. (1990). Evaluating and influencing periodontal diagnostic and treatment behaviors in general practice. *Journal of the American Dental Association*, 121, 720-724.
- Bader J, and Shugars D. (1995). Variation, treatment outcomes, and practice guidelines in dental practice. *Journal of Dental Education*, 59, 61-96.
- Bader J, and Shugars D. (1997). What do we know about how dentists make caries-related treatment decisions? *Community Dentistry and Oral Epidemiology*, 25, 97-103.
- Bader J, Shugars D, Hayden W, and White B. (1996). A health plan report card for dentistry. *Journal of the American College of Dentists*, 63, 29-38.
- Côté R, (ed.) (1993). *The systematized nomenclature of medicine and veterinary medicine: SNOMED international*, 3rd ed. Northfield, IL: College of American Pathologists.
- McFall W, Bader J, Rozier R, and Ramsey D. (1988). Presence of periodontal data in patient records of general practitioners. *Journal of Periodontology*, 59, 445-449.
- Mjör J, and Wilson N. (1997). General dental practice: the missing link in dental research. *Journal of Dental Research*, 76, 820-821.
- Morris A, Bentley J, Vito A, and Bomba M. (1988). Assessment of private dental practice: a report of a study. *Journal of the American Dental Association*, 117, 153-162.
- Park R, Fink A, Brook R, et al. (1986). Physician ratings of appropriate indications for six medical and surgical procedures. *American Journal of Public Health*, 76, 766-772.
- Owens J, Tennenhouse D, and Kasher M. (1990). *Dental risk prevention*. San Rafael CA: Tennenhouse.
- Shugars D, and Bader J. (1992). Appropriateness of restorative treatment recommendations: a case for practice-based outcomes research. *Journal of the American College of Dentists*, 59, 7-13.
- World Health Organization. (1992/94). *ICD-10: International statistical classification of diseases and related health problems*, 10th revision. Geneva: WHO.
- World Health Organization. (1995). *ICD-DA: Application of the international classification of diseases to dentistry and stomatology*, 3rd Ed. Geneva: WHO.

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Industry Competition

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Abstract

Not only do individuals and firms compete with each other within an industry, there is also industry competition with other industries and competition of an industry with its customers and vendors. The rules of industry competition are embedded in market structure and difficult to modify. These rules are discussed under the headings of overall market growth, barriers to entry, rivalries within the industry, relationships with customers and vendors, and the availability of substitutes.

Dentists compete with each other and with those in their community because there are not enough resources for everyone to have their first choice of what they want and because the benefits dentists receive depend on their behavior and the behavior of patients, other dentists, health care brokers, travel agents, landlords, beauticians, and anyone else who knows the value of a dollar. The playing field is kept generally level and the competition generally civil by laws, professional codes, and a sense of mutuality which affects the public good.

Industries also compete with each other. The last several years has seen a dramatic shift in the balance between savings and loan associations and the stock market as a place to invest money. This is industry competition based on substitutable products. There is also industry competition between vendors and

purchasers. Point-of-sale information about consumer purchasing habits have spawned the creation of giant retail organizations and given them considerable say over price, product design, product mix, and delivery. Only twenty years ago, brand name suppliers were calling the tune. There is even industry competition over form of ownership. Public policy and improved cost accounting drove the U.S. government out of the letter and parcel delivery business.

In addition to understanding competition at the level of the firm or individual dental office, it is also valuable to know the trends in industry competition. An appropriate analogy would be the need to understand the ebb and flow of tides in addition to your own strength and the nature of your equipment before doing any serious rowing. It is also pos-

Dentistry has also proven to be a very responsive market.

sible for industries, such as dentistry, to influence their competitive position through collective action. On the whole, organized dentistry has done quite well in this regard.

Some industries are in positions where they interact with customers, suppliers, and other industries on favorable terms; and some have to compete for that advantage. Some lose their competitive opportunities if they fail to respond to a changing environment. The following analysis describes environmental fac-

tors that favor or disadvantage industries generally. They can be grouped under five headings: (a) overall growth of the market, (b) barriers preventing competitive entries into the market, (c) rivalries within the industry, (d) relationships with customers and vendors, and (e) the availability of substitutes or alternative ways for customers to satisfy their demands.

Growth of the Market

Dentistry is a \$41 billion industry and growing. Over the past five years, expenditures on oral health have climbed 37%, while the economy as a whole has only grown at half of that rate. Fluctuations in the oral health care bill for the nation have been quite similar to those in medicine generally, which now accounts for about 12% of the gross domestic product. About five cents of every health care dollar are spent on dentistry.

Dentistry has also proven to be a very responsive market. During times when edentulism and the DMF in children were cut in half, the dental market continued to grow as alternative services were offered. Although the number of Americans who visit the dentist in a given year has remained between 60% and 70% for almost twenty years, the amount of care given to the population who seek the services of a dentist have continued to increase. Those who have received the most care tend to be those who demand more.

Although health economists and epidemiologists continue to monitor the oral health market overall, there are currently few voices saying that market growth has flattened or shows decline. Until biology can be altered or vanity becomes unfashionable, dentistry is in an



Table 1. Barriers to entry protecting the dental profession

High barriers

Long learning curves
Licensure
Industry standards and regulations
Reputation
Subsidies

Low barriers

Switching costs
Economies of scale

excellent overall competitive position with regard to market growth.

Barriers to Entry

The positive market growth picture in dentistry has one significant down side. It invites competition. As Harvard Business School professor Michael Porter notes, "Competition in an industry works to drive down the rate of return on invested capital toward the competitive floor rate of return, or return that would be earned by the economist's 'perfectly competitive' industry....The presence of rates of return higher than the adjusted free market return serves to stimulate the inflow of capital into an industry either through new entry or through additional investment by existing competitors." Managed care is not a market aberration caused by a few greedy insurance executives. It is a natural market response to the sustained economic success of dentists. Dentistry can only maintain its competitive strategic advantage by shoring up barriers to entry into the market.

Table 1 enumerates the traditional barriers to entry into an industry and identifies those which are favorable to dentistry and those that are unfavorable.

Among the competitive barriers that dentistry enjoys are long learning curves, restrictive licensure, industry standards and regulations, an excellent reputation, and heavy subsidies. The learning curve is the time it takes a firm that chooses to

enter an industry to reach full productive stride. If the capital were available, anyone could start a business canning salsa, assembling computers, leasing trucks, or offering therapeutic massages within a matter of months. The time it takes to prepare for dental school, to receive dental and specialty training, and to become productive in one's practice

are a matter of years and are comparable to many industries with long learning curves. For example, it takes an automobile manufacturer between five and seven years to introduce a new automobile. This is part of the reason there are so few automobile manufacturers. Long learning curves are a barrier to entry into a market. The only way around this barrier, and one that is being

the stock market. They have realized that hiring dentists is a means of acquiring licenses.

Industry standards and regulations, including government regulations, can provide an effective deterrent to those seeking to enter an industry. Dentistry is strong in this regard. Standards of care, record-keeping practices, infection control, industry accepted employment practices, accounting standards and requirements for reporting income, practice act regulations about legal names, and staff supervision might all at certain times appear to be hassles that impede the professional independence of dentists. They also form a network creating a most effective barrier. These standards and regulations may actually be more of a deterrent to the independent practice of dentists and hygienists than are licensure matters. The history of independent hygiene practice in Colorado is illustrative. Although it has been legal for years for

Managed care is a natural market response to the sustained economics success of dentists.

attempted with only partial success by capitated clinics, is to purchase the expertise.

Another barrier which favors dentistry is the license. Unlike most markets involving licenses or patents, the dentist as a provider is licensed rather than the products, services, or procedures which are sold. This creates a special form of protection since the dominant form of dental practice is solo, thus the owner and license holder are synonymous. This barrier, however, is being lowered. Increasing numbers of dentists, particularly new entrants into the profession, are working for other dentists. The number now stands at approximately 30% and is rising. Dental management companies are a new phenomenon. There are currently fourteen dental chains traded on

hygienists to practice independently there, very few have found it feasible to do so.

Dentistry's reputation is precious and superlative. For years, public opinion polls have shown that patients trust dentists. Would-be competitors have been unsuccessful in claiming that dentists are taking advantage of the public and need to be curbed or need to face more open competition. Both organized dentistry and individual practitioners can take credit for this important accomplishment.

The last effective barrier, subsidies, may come as a surprise to the dentist who holds an image of being the rugged individualist. About 5% of dentistry is purchased outright by the government and given to individuals in the armed ser-



vices, people on reservations and in prisons, and others. Of the remaining dental bill, roughly half is covered by insurance. Although dental insurance is properly considered a form of prepayment or cost spreading, it is also a conduit for the infusion of massive amounts of oral

tion, or the cost of entering the industry. Certainly by comparison with many segments of the economy, the costs of establishing a dental office are small and readily available. This is a point that has not been lost on the dental management companies. In terms of self financing,

couraging competition. Advertising is frowned upon, as is commentary on colleagues' work and claims of superior quality. Organized dentistry has been proactive in adjusting the dentist-to-population ratio.

Despite this anti-competitive stance, there are structural characteristics within dentistry that either promote or discourage rivalry. On the positive side are industry growth and the large number of "firms." These tend to dampen competition. Another factor that depresses competition within dentistry is product differentiation. Marketers contrast differentiated goods and services, where each is unique and serves a customized purpose, from commodities. Commodities are indistinguishable from each other and include flour, gasoline, notary services, and probably even haircuts. An industry filled with differentiated products is stable and is relatively free of internal competition. By contrast, industries that offer commodities compete on price. Look what

Dentists with interests in other areas or dentists who are doing poorly in the profession find it difficult to switch careers.

health care dollars from unions, employers, and the government. Such benefits are normally tax exempt. Although these subsidies are nothing of the order of those in medicine or in the defense industry, they compare favorably with agriculture and research. Large subsidies protect the incumbents in an industry.

There are two places where the barriers to entry into the dental industry are noticeably low. The first of these is switching costs. This is a technical term which describes the burden on the customer for moving from one provider of services to another. The switching costs to move from one computer company to another are enormous when one considers the equipment, the programs, staff training, support, etc. Switching costs in dentistry are almost non-existent and may be largely an intangible matter such as loyalty. The other low barrier is economies of scale. There are some services that are best delivered in bulk. Generating hydra-electric power, public transportation, and probably even hospitals fall into this category. When such economies of scale exist, they constitute an effective barrier to entry into the industry. That is certainly not the case in dentistry.

Some of the classical barriers to entry are neither advantages nor disadvantages for dentistry. These include protected technology (there is little of it) and product differentiation (only recently has this become an issue). Another potential barrier is very problematic. This is capitaliza-

and by comparison with becoming a beautician or real estate agent, the costs can be very large. Twenty, thirty, or more years ago, these costs of establishing a dental office were born by the families and the hard work of individual practitioners. In more recent history, they have had a partner, the U.S. government and banks, holding the note. With the increasing costs of dental education and the precarious status of loans, a new economic reality is entering the capitalization field. The economic future of increasing numbers of beginning practitioners is in the hands of senior dentists in the form of an associateship arrangement or in the hands of clinic and management company owners, many of whom are dentists as well.

Capitalization may not be an issue of how high the barrier to entry into the profession is, but where the holes are. It may become a matter of who is allowed to enter the profession (African-Americans and Hispanic-Americans being conspicuously under represented) and how they practice.

Rivalry

Industries are better able to hold a competitive advantage in their environment if they are not troubled by internal competition. Dentistry, like many other professions, takes a public posture dis-

Table 2. Rivalry factors in competition with dentistry

<i>Factors dampening competition</i>
Industry growth
Product differentiation
<i>Factors promoting competition</i>
Exit barriers
Fixed cost—overhead

MacDonald's did when they standardized the hamburger.

Dentistry has been ambivalent over differentiation. Obsession with technical quality, initial licensure examinations that focus almost entirely on technical quality, and defensiveness over the recent *Readers Digest* article suggest that many in the profession would favor a commodity approach to defining quality. That is certainly what the brokered care portion of the industry would prefer. But there is a difference between a crown delivered by a dentist who stresses a sensitive environment, thorough diagnosis, quality



control, and comprehensive care, and one delivered in a capitation mill, even if the two crowns happen to be physically identical.

There are two structural characteristics of dental practice which promote internal rivalry and weaken the overall competitive advantage of the profession. The first of these is high fixed costs. Office overhead has risen steadily over the past years and is now just under 70%. The only way to recover funds sunk in buildings, equipment, staff, and other fixed resources is to increase productivity. The existence of unused resources has been a major argument of brokered care plans. Simple arithmetic will reveal that larger overhead permits the absorption of a larger percentage of capitation patients into a practice. Perhaps this is part of the reason established practitioners have the same ratio of capitation patients as beginning practitioners do, despite the larger number of years they have had to build a fee-for-service patient base.

The second source of rivalry inherent in the structure of dental practice is high barriers of exit. Dentists with interests in other areas or dentists who are doing poorly in the profession find it difficult to switch careers. The time and money invested in becoming a dentist and establishing a practice, the small number of careers that make use of dental skills, and the very small number of options that provide the economic reward of dentistry combine to keep dentists in practice even when their hearts are elsewhere or their practices are ineffective. As harsh

as it sounds, one of the tenants of capitalism is that the market will drive out weak firms.

This natural pruning is retarded when there are high entry barriers and when there are high exit barriers. Many dentists who shift to real estate or become stock brokers after losing their interest in dentistry depend on the network of contacts they have developed more than the skills they have learned as dentists. It is partly out of sensitivity to the high exit barriers from dentistry that state board disciplinary actions focus so heavily on rehabilitation rather than on punishment.

Buyers and Sellers

All patients are not equally attractive buyers of dental services. Part of the practice location decision involves looking for situations where there is a large number of people with high demand for dental care and the ability and willingness to pay for the care. But beyond this, there are certain kinds of customers who are inherently more attractive in the sense that they are willing to pay higher prices for the services they receive.

Other things being equal, a practice will thrive if it has a larger proportion of

Table 3. Competitive factors favoring the seller over the buyer

Differentiated product
High switching costs
Inability of buyer to make his or her own
Small number of suppliers
High cost associate with product failure
Buyer purchases in small lots
Product is important to buyer's business
Uninformed buyer
Buyer and seller have common future
Buyer has optimistic growth potential
Seller can reduce transaction costs
Buyer favors quality over cost
High value added product
Buyer can pass cost on to others
Each purchase is small segment of budget
Buyer has low fixed costs

patients with the following characteristics: (a) those who view dentistry as a differentiated product (those who think they can tell the difference in quality of care they receive), (b) those with high switching costs (those who prefer routine or would have to apologize to the other dentist in town over a personal dispute they have had before switching), (c) those who are not in the habit of doing anything for themselves along the lines of home care, etc., (d) those for whom poor oral health has a high psychological or financial cost, (e) those who go to the dentist irregularly, (f) those for whom oral health or an attractive appearance is part of their ability to earn a living, (g)



those who are uninformed, (h) those who share a common future with the dentist (as lodge brothers or members of the Chamber of Commerce in a small town), (i) those for whom transaction costs can be reduced (such as those who live near a dentist or value the services of the office completing insurance paperwork), (j) those who value quality more than cost, (k) those who can pass the costs of care onto others (as children or those who have insurance), (l) those in good health or those for whom dental expenditures are a small portion of their health care costs, (m) those with low fixed costs or, in other words, those with high discretionary income.

A parallel analysis can be done for dentists relative to their vendors. In this case, however, the comparative advantage is reversed. For example, dentists want patients with high switching costs but want low switching costs for themselves with respect to the liability insurance or dental equipment they purchase. Dentists can charge more to uninformed or disinterested patients but, as purchasers of services, they will do better to be well informed.

Although it seems natural to suggest that dentists selectively choose their vendors in a way that would give them a competitive advantage on many of the dimensions just listed, it is foreign to consider qualifying patients in the same fashion. None of these factors constitutes discrimination, and there is no specific professional injunction against qualifying patients on these dimensions. As a

matter of fact, many dentists subconsciously organize their practices so as to encourage "better" patients through practice location selection, office hours, and financial arrangements.

Availability of Substitutes

In marketing lingo, substitutes are products or services that may be different in nature but serve to satisfy the same need. A new dentist in town is not a substitute; it is competition. An effective over-the-counter whitening agent, however, is a substitute. From the patient's perspective, managed care is probably not a substitute, but alternative payment plans might be.

In the early days of dentistry, substitutes took the form of barbers, physicians, and home remedies. By the vigorous efforts of the pioneers in the field, dentistry became a scientifically-based

for care of an abscessed pulp. But the market for general health and fitness and for physical attractiveness is teaming with alternatives. Dentistry is entering a phase where it is simultaneously in two markets: the preventive and cosmetic versus the therapeutic. The rules are not the same in both markets, and dentistry as an industry will be at a competitive disadvantage if it tries to use the market rules of therapy (where it has enjoyed such enviable power) in the preventive and cosmetic market.

It is difficult to make precise predictions about the emergence of substitutes. Those who are interested in this sort of prognostication should keep an eye on the National Institute for Dental Research, dental product development research, and the schools. The driver of oral health care substitutes has been technology research. Water fluoridation

***M**any dentists subconsciously organize their practices so as to encourage "better" patients.*

healing profession with virtually no substitutes. As an industry, it enjoyed unparalleled success. Now, however, we are entering an era where substitutes do exist for some segments of the profession. The reason is a shift within the profession itself to include more discretionary care and a higher proportion of preventive and cosmetic services as opposed to therapeutic ones. There is no substitute

and the health care advertising of the dental trades have dramatically shrunk the therapeutic market in oral health. The next big changes quite possibly could be biological engineering and the development of easy-to-use technologies which would make it possible for patients to treat themselves or for a new class of oral health care providers to emerge who require significantly less training.



Recommended Reading

Axelrod, R. (1990). The evolution of cooperation. New York, NY: Basic Books.

Comprehensive study of the “prisoner’s dilemma” — structured competition where the payoff to A or B depends on the joint strategies of both. In repeated “games,” a natural strategy of “cooperation” evolves through a process of tit-for-tat, punishing one’s opponent for deviations from the strategy which yields the best group payoff.

Hamel, G, and Prahalad, C.K. (1994). Competing for the future. Boston, MA: Harvard Business School Press.

Competition in the future is the competition for opportunity. Firms profit ratio is the value added to customers divided by the cost of adding that value. Historically, we have focused on cost cutting and efficiency (the denominator). In the future we must look to growing the numerator. We will compete for the chance to give the customer what he or she wants.

** Kohn, A. (1992). No contest: The case against competition. Boston, MA: Houghton Mifflin. ISBN 0-395-63125-4; 325 pages; about \$12.*

A very popular book among those who have a philosophical antipathy to competition. A vast amount of literature is reviewed on claims that competition is inevitable, productive, enjoyable, and builds character. In every case, Kohn says competition is wanting. Kohn’s arguments are framed as win-lose alternatives between the proponents of competition and his own view, and he aggressively attacks his opponent, demonstrating in his own writings exactly what he would have us set aside. There is little offered by way of alternatives to competition.

** Levinson, J.C. (1993). Guerrilla marketing: Secrets for making big profits from your small business. Boston, MA: Houghton Mifflin. ISBN 0-395-64496-8; 327 pages; about \$13.*

A “how to” manual for advertising small businesses. With background in advertising in both large and small firms, Levinson shows how the techniques that work for the giants don’t work (and are not necessary) for firms that have local markets. The heart of the book is nineteen chapters, each describing the advantages and disadvantages of different media such as personal letters, brochures, direct mailing, seminars, trade shows, and even t-shirts and the yellow pages.

** Porter, M.E. (1980). Competitive strategy: Techniques for analyzing industries and competitors. New York, NY: The Free Press. ISBN 0-02-925360-8; 395 pages; about \$35.*

A true classic. Many MBA students are familiar with the seminal concepts of generic competitive strategies, industry life-cycles, buyer selection, and strategic groups without realizing that one man introduced them together in a single book. This is a combination of economics, marketing, and business strategy. It explains how firms work. The book is packed with a wealth of material and the examples tend to be brief, so a basic familiarity with business is helpful.

Editor’s Note

Summaries are available for the three recommended readings preceded by an asterisk (*). Each 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 competition; a donation of \$50 would bring you summaries of all the 1997 leadership topics.

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