Innovation and Entrepreneurship

The National Crisis in Access to Oral Health Care: A Dental Industry Association Responds

What factors lead to innovative opportunities? Peter Drucker notes that some factors are changes within an organization, whereas others are changes that occur outside the organization.[1] One type of change that occurs outside an organization and which history has shown to be a source of innovation is a national crisis. In this column, I examine the relationship between national crises and how one dental industry association, the American Dental Trade Association (ADTA), responded with an innovative approach.

What qualifies as a national crisis, and how, in the past, has industry provided innovations to help the nation? Although many examples might be cited, as well as debated, our nation going to war certainly qualifies as a national crisis. At times of war, industry is often called on to innovate. For example, during World War II, when President Franklin Roosevelt challenged the leaders of the shipping industry to develop new methods of building ships to support a global war effort, Henry J Kaiser accepted the challenge and developed new methods of ship construction. The Liberty Ships, as they were called, were critical to a successful war effort by the United States.[2]

However, war is not the only example of a national crisis. Today, access to dental care is another crisis of national proportions that meets this definition. The magnitude of this crisis was recently brought to the attention of the American people in a report prepared by David Satcher, MD, PhD, Surgeon General of the United States from 1998 to 2002. In May 2000, Dr. Satcher issued the first-ever report, titled *Oral Health in America: A Report of the Surgeon General*.[3] The report illustrates the profound disparities that affect those without knowledge or resources to achieve good oral care. Health disparities were defined as differences in access to health services between racial and ethnic groups, gender, and those with disabilities.

To illustrate the disparity, the report notes that tooth decay—a childhood disease 5 times as common as asthma and 7 times as common as hay fever—occurs in about 25% of white children. By comparison, it occurs in 70% of the Native American population and about 40% in African American and Mexican American populations.[3]

One explanation for this phenomenon is that fluoridation is not available to all communities. Water fluoridation reaches 145 million people; this is at best only about 62% of those being supplied with public water.[3] That means about 100 million Americans do not have access to fluoridated water and are in need of products that deliver fluoride. Moreover, for every child without medical insurance, almost 3 times as many are without dental insurance; ie, children from families without dental insurance are 3 times more likely to have unmet dental needs than insured children.[3] Finally, each year in the United States, 30,000 people are diagnosed with mouth and throat cancer, and 8,000 die each year; that amounts to 1 each hour. Mouth and throat cancers make up the sixth most common cancer in all US men, and, more specifically, it is the fourth most common in African American men.[3] These findings support the Surgeon General's conclu-

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Table 1—Santa Fe Group Representatives

Michael Alfano, Dean, College of Dentistry, New York University
Linda Niessen, Vice President (VP), Clinical Education, DENTSPLY International
Dominick DePaola, President and Chief Executive Officer (CEO), The Forsyth Institute
David O Born, Executive Director, Santa Fe Group
Richard D'Eustachio, 300 Monmouth Drive, Cherry Hill, NJ 08002
Steven Kess, VP, Corporate Development, Henry Schein, Inc
Harold Slavkin, Dean, School of Dental Medicine, University of Southern California
Lawrence Meskin, Professor, School of Dentistry, University of Colorado
Arthur Dugoni, Dean, School of Dentistry, University of the Pacific

sion that some segments of our population are not receiving adequate dental care and that differences exist in access to health care.

To enhance access to oral health care services, we need to understand what limits access. One approach to understanding the problem is to propose some possible reasons and examine each one in a controlled scientific study. This was the approach taken by the ADTA when it developed its Oral Care Access Scholars program, and I will discuss this approach and the program in more detail below. However, another way to approach the problem is through the use of an analogy or what scientists refer to as "thought experiments."

Consider an analogy between access to health care and access for tickets to a professional football game. Why doesn't everyone have access for a ticket to the football game? The following factors are involved:

- Cost: Not everyone can afford the ticket.
- Availability: Even if we could afford them, only a limited number of seats are available. The rest of us have to watch the game on TV.
- Interest and Culture: Some of us don't value football—some prefer soccer.

Interestingly, cost, availability, interest and culture, the factors that determine access to a football game, may be the very same factors determining access to dental care.

Cost

Dental services, as any other services in our society, can be expensive. In 1998, a total of about 58 billion dollars was spent on dental care.[4] Surprisingly, about half of the cost is paid by insurance and half is paid out of pocket with the federal government paying only about 4% of the tab. For the year 2000, the total spent exceeded 60 billion dollars. Considering the importance of insurance and out-of-pocket expenditures, it should not be surprising that the Surgeon General's report notes that economic status plays a role in obtaining dental care.[3]

Availability of Service

The distribution of dentists in the United States follows the population, with most dentists practicing in areas of high population density.[3] Based on this fact only, access to dental services will be either restricted or unavailable. And if as predicted during the next decade, the number of practitioners decreases, the problem of access, especially in rural areas, will become more acute. Transportation also can be a major factor affecting access. The Surgeon General's report points out something else: the makeup of the practitioner work force affects access in another way. Individuals usually seek out practitioners like themselves, that is, of the same race and ethnicity. Therefore, increasing the diversity of the work force would be expected to increase access.

Interest and Culture

Because of a lack of access to information, some people are unaware that good oral health is important for their quality of life or even that their oral health can be improved. They also are unaware that improving their oral health can improve their overall health. Moreover, for some segments of the population, fear and misconceptions about dental treatment present barriers to oral care. For some, cultural values can be a significant factor in obtaining oral health care. Because of the increasing diversity of the US population, cultural sensitivity will become even more important if we are to eradicate disparities.

Innovations

Assuming these factors limit access, what innovations might the dental industry consider in responding to the Surgeon General's call for assistance in dealing with this national crisis?

Table 2—ADTA Representatives

James P Breslawski, Corporate Executive VP, Henry Schein, Inc
Michael J Lynam, Sales Manager, Porter Instrument Company
David L Brown, President and CEO, National Dentex Corporation
John C Miles II, Chairman of the Board and CEO, DENTSPLY International
Reynolds R Challoner, President, NEW Paradigm Advisors, LLC
Gary W Price, President and CEO, American Dental Trade Association
Mildred M Goldstein, President, Harry J Bosworth Company
Lois Moyer, Executive Director, American Dental Trade Association

Cost Innovations

As noted above about half the 58 billion dollar cost of oral health care is paid by insurance. What about the other half paying cash? Are they unable to afford oral health care because they are short on cash? This may not be the case. In fact, the decision may reflect a person's priorities. For example, these people buy other things out of pocket that may be neither cheap nor necessary for survival. Clearly, competition for the discretionary oral health care dollar exists; and this competition can limit access. To increase access for the group paying out of pocket, dentists need products that allow them to deliver services more efficiently economically.

The dental industry is already responding with innovations by developing products and marketing strategies that that will allow the 108 million people without dental insurance and who must pay for services out of pocket to understand that the mouth reflects what is happening inside the body, and that diseased teeth can be an entry point for bacteria to other parts of the body such as the heart. These 108 million people need to hear a message that encourages them to have oral health as a top priority.

Access Innovations

Providing oral care to people in areas of low population density and with few practitioners presents a major challenge to the dental profession. Fortunately, new technologies may offer a solution. Just as most football fans watch the game on TV, the profession needs to use the potential of teledentistry, a service that provides oral health care via electronic transmission of dental information from different sites for real-time and off-line diagnosis, treatment planning, consulting, and follow-up. Because teledentistry has the potential to provide oral health care to patients in situations where the patient and oral care professional are not located at the same site, it serves as a means of providing health care and education about health care. If the projections on the shortages of dentists in the next decade come to pass, teledentistry will be important not only for rural areas but also for our urban and suburban populations. Using teledentistry to deliver health care will require unique products and technologies because oral health care providers are needed at both ends of the Internet connection. However, the oral health care providers at both ends of the Internet connection will not have equivalent training or experience. For example, when used in remote areas, at one end of the Internet connection will be the patient with an oral care provider who may be a dental assistant, hygienist, or general dentist. At the other end of the Internet connection, guiding the procedure, will be a dentist or, if needed, a dental specialist. New products and technologies will be needed to compensate for the differences in training and education between the providers at either end of the Internet connection. Clearly, the greater the difference in education and training, the more technology will be needed to assure safe and effective treatment. If such products can be developed, the availability of teledentistry could help solve problems of access caused by limits to transportation.

Cultural Innovations

For many Americans, oral health is not a high priority item; in fact, some consider it a luxury, a view that cuts across all socioeconomic groups. This perspective comes from lack of information or fear and misconception about dental treatment. To deal with this factor, new educational products need to be developed to convey the Surgeon General's message pointing out the relationship between oral health and other systemic diseases, such as

Table 3—Oral Care Access Scholars

Name	Project Title
Bernard A Karshmer, MBA, PhD, University of Colorado School of Dentistry **Richard L Call, DMD, MS,** The Dental Center at Thornton Plaza, Thornton, CO	Examination of Alternative Forms of Dental Insurance on Inhibiting Access to Care
Larry R Domer, MBA, DBA, University of Colorado School of Dentistry **Richard L Call, DMD, MS,** The Dental Center at Thornton Plaza, Thornton, CO	A Pilot Study to Determine Barriers to Implementing Productivity Enhancement Strategies in Dental Practices
Edward F Rossomando, DDS, PhD, MS, University of Connecticut Health Center	Feasibility Study of New Technology on Dental Office Productivity and Access
Steven Duffin, MBA, DDS, Capitol Dental Care, Salem, OR	An Examination of Current and Potential Roles for Expanded, Hybrid, and Mid-level Paraprofessional Practitioners
Mildred A McClain, PhD, University of Nevada Las Vegas, School of Dentistry	A Comparative 'Outcomes Assessment' of Selected Dental Practice Curricula, To Developing Improved Instructional Materials for Dental Students and Practitioners
Ella M Oong, MPH, DMD, Montefiore Medical Center/Albert Einstein College of Medicine	Cultural Materials—a Media Campaign Focused on Oral Cancer and Minority Populations
Amos S Deinard, MD, MPH, University of Minnesota	Family Dental Project
Michelle M Henshaw, MPH, DDS, Boston University School of Dental Medicine	Dental Action Literacy Project
Richard Niederman, MA, DMD, The Forsyth Institute, Boston, MA	Implement a Primary Prevention Elementary School Program—Planning Grant
Shirley Miranda, BDS, CAGS, MSD, El Paso, TX	The Role of Promoters in Accessing Existing Oral Health Services—Binational Model

diabetes and heart disease. This message needs to be transmitted, and because of projected demographic shifts in which minorities will be majority populations in the next decade, the message should be in the form of culturally sensitive educational programs. The dental industry has already responded by developing programs that maximize compliance and acceptance by all populations.

Meeting the Challenge: The ADTA Oral Scholars Initiative

When the Surgeon General issued his report and his call for assistance in dealing with the national crisis of access to oral health care, one of the dental industry organizations that responded was the ADTA. First, the ADTA leadership invited Dr. Satcher to present his finding at their 2000 annual meeting. After his presentation, the ADTA members held roundtable discussions on how their organization might assist the Surgeon General in expanding access. Next, the organization created Oral Care Access, a standing committee to evaluate and prioritize the various options available to them.

One result of the committee's deliberations was establishing collaboration with the Santa Fe Group, an organization of renowned professionals from academia and the dental industry. The members of the Santa Fe group are listed in Table 1. The Santa Fe group, meeting with the representatives from ADTA listed in Table 2, created a unique program called The Oral Scholars Initiative. This initiative was developed to examine the parameters that might have an impact on access. To implement this program, the ADTA formed the ADTA Foundation. As Reynolds R Challoner, Chair of the ADTA Foundation, noted in a letter to ADTA members, "The goal of the program is to improve access to oral care

by insuring an adequate number of providers, improving productivity, and removing obstacles to access."[4]

In October 2003, the first group of 10 scholars was selected (Table 3). It is instructive to note that of the 10 projects, several are educational or instructional, several deal with costs or productivity, and 1 deals with availability and will examine expanding the scope of paraprofessional practice. As noted by Mr. Challoner, "The results of these projects will lead us to the next actions for expanding access and our market. Clearly, these projects are just the beginning of our efforts. This is our start. We will work to assure that we have an adequate supply of providers and expanded access to oral care."[4]

This unique response by the ADTA to the Surgeon General's call for assistance with the oral health care crisis may very well be the first program in the United States to gather scientific data on questions of interest to all in the dental community. Although many have talked about what might affect access, the ADTA members have pooled their financial resources to support a group of investigators to answer their questions. This program may very well become the benchmark for efforts by other trade associations. One can only applaud the foresight of the ADTA leadership in conceiving and launching this program.

This action also suggests a more proactive stance by the dental industry. For too long, dental companies have been asked to pay the bill to implement the agenda of other associations, with little or no say in the setting of these agendas. By establishing the Oral Care Access Scholars program, at least one industry association has indicated it has its own agenda and is willing to provide the financial resources for implementation. At the risk of reading too much into this, this action may reflect a new activism among the dental companies. Personally, I applaud the effort.

The dental industry associations represent companies with a variety of functions. These include manufacturers, distributors, dental laboratories, and companies with billion dollar or million dollar annual sales of dental products ranging from sticky wax to DNA probes; all are members of the oral health care family. It is my hope that the dental industry will continue to work with others in the dental community to enhance access to oral care in the United States.

Acknowledgments

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Conference on Integrating Biotechnology With Clinical Dentistry

A number of my readers have sent me e-mail messages requesting a progress report on the development of biotechnology-based products for the dental profession and an update on the time frame for the introduction of these products into clinical practice. In response to these requests, the Planning Committee of the 2005 American Biodontics Society (ABS) annual conference has recommended the following session topics: caries and periodontal vaccines, bioscafolds, stem cells for growing teeth, and calcium-phosphate restorative materials. If you are interested in learning more about the ABS annual meeting, as well as requesting registration materials, or if you would like to suggest other topics to the Program Committee, please send me an e-mail message at erossoma@nso2.uchc.edu.