

Journal

CALIFORNIA DENTAL ASSOCIATION

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Health Care Legislation

Integration of Oral and
Overall Health Care

Anatomy of the Dental
Benefit Marketplace

INTERPROFESSIONAL EDUCATION AND PRACTICE ... MOVING TOWARD COLLABORATIVE, PATIENT-CENTERED CARE

Lindsey A. Robinson, DDS, and
David M. Krol, MD, MPH, FAAP

Vol 42 | No 1



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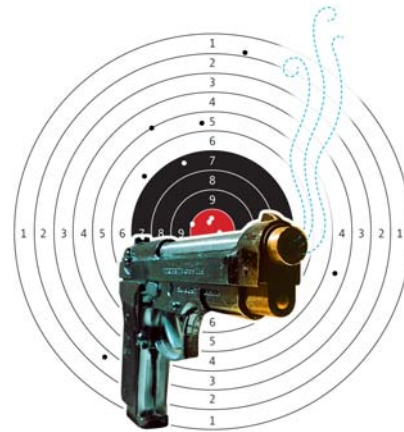
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Numeracy and Innumeracy

Kerry K. Carney, DDS, CDE

The post office is a lonely place now that it is known as the “snail mail” office. Last week I took a large envelop to the post office because I was not certain I had sufficient postage. I had placed eight 66-cent stamps on it, but it was pretty heavy. When it was my turn, I slid the envelope across the counter to the postal worker. She slid it back to me and told me I would have to add it up first before she could tell me if I needed to add more stamps. I must have looked dumbstruck, because she proceeded to explain, though she had a scale to weigh the envelope, she had no calculator. She would not be able calculate what amount was already applied nor any difference I might need to add.

Bam. I ran smack into an example of innumeracy.

The term innumeracy describes the lack of understanding of fundamental mathematical principles and logical analysis. We encounter it every day. It may be the miscommunication of a discount percentage in a retail transaction, the irrelevant statistics of a sports commentator, the incorrect risk assessment of rain by the weather forecaster or the confusion of coincidence with cause and effect that underlies paranormal investigations.

Innumeracy reinforces one's reliance on emotional appeals even when they contradict data-based risk assessments. For example, when a politician pronounces he or she will spend whatever is necessary to achieve a zero risk of a national disaster/terrorist attack/*insert-some-horrible-event-here*. There is a fundamental misunderstanding of risk and prevention in such a statement.

We desire a zero risk of a bad thing happening, but if that is not achievable and we consent to unconstrained spending



Being able to compare and understand the advantages and risks associated with coverage alternatives is a daunting test of everyone's numeracy.

in the pursuit of the zero risk, we have chosen the emotionally appealing but realistically impossible and fiscally imprudent option. Policy decisions based on innumeracy and emotion can lead to “unfounded and crippling anxieties or to impossible and economically paralyzing demands for risk-free guarantees.”¹

State lotteries would likely be unsustainable if our collective understanding of chance or probability were higher. Those of us who rely on the state lottery as our retirement plan have traded the mathematical improbability of our winning for the seductive wish that “it could be me.”

During informed consent discussions with our patients, we have to evaluate the numeracy level of the patient in order to communicate the risks and benefits of alternative treatments in an understandable manner. The dark side of conversations between individuals with uneven levels of numeracy is the unethical manipulation of the information to draw out the more lucrative procedure decision from the patient.

The most obvious and widespread current example of a numeracy challenge may be realized in the navigation through and understanding of the Affordable Care Act marketplace and its many insurance coverage choices. Being able to compare and understand the advantages and risks associated with coverage alternatives is a daunting test of everyone's numeracy.

Innumeracy also plays a large role in how we interpret or misinterpret scientific findings. We accept percentages without knowing actual numbers (the *N* value). We embrace “trends” without descriptions of how these trends were determined. We accept small, nonrandom samples as having strong, predictive power. We accept an arithmetical average, or mean, when a range, mode or median might be more relevant.

Some professionals exhibit a slavish devotion to that ubiquitous indicator of statistical significance, the *P* value. Many of us tend to go directly to the *P* value to evaluate whether experimental data is worth further consideration.

Glick and Greenberg discuss how a reliance solely on the *P* value can lead us to falsely infer far more about the importance and clinical relevance of a study's outcome than it actually implies. They argue that a study's methodology and other statistical measures can tell us much more about the magnitude and variability of the experimental effect being measured.²

For example, if a study produces a statistically significant difference between the effects of two drugs, but the magnitude of that variation is small, then the difference in the treatments may have little clinical relevance. This kind of statistically significant outcome might be used to support heavy marketing of an expensive drug over an inexpensive one. In the end,

the consumer could be influenced to pay more for the heavily marketed drug and never realize he is paying for statistical significance over clinical significance.

As health professionals, we have an obligation to improve our own level of numeracy so we can identify and correct examples of innumeracy that influence oral health care.

Paulos points out in his 1988 book, *Innumeracy*, that many of us take a perverse pride in mathematical ignorance. "The same people who cringe when words such as 'imply' and 'infer' are confused react without a trace of embarrassment to even the most egregious of numerical solecisms." When questions about the methodologi-

cal details of a study are posed, they are sometimes viewed as impolite or distracting.

Innumeracy is pervasive and insidious. Innumerate pronouncements are encountered daily, rarely recognized as such and even less frequently corrected. Innumeracy is the basis for misunderstanding the meaning of information in many forms. It can keep us from a true understanding of risk, statistical significance and clinical relevance. In a real sense, it can be the basis for a fundamental misunderstanding of the world and how it operates on a daily basis.

Paulos "summed" up nicely how innumeracy can interfere with our understanding of very simple interactions.

He tells the story of a tourist in Vermont who takes several items to the cash register in a small country store. The store owner tells the tourist the bill total is \$17.37. The tourist places the exact change on the counter. The store owner counts it once and looks up at the tourist. He counts it again and looks at the tourist again. After he counts it the third time, the tourist says, "Doesn't it add up to \$17.37?" And the store owner looks with great suspicion at the tourist and says, "Yes, but just barely." ■

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2. *The Hermeneutic Pitfalls of P.* Michael Glick, DMD, and Barbara L. Greenberg, MSc, PhD. December 2010 vol. 141 no. 12 1404-1407.



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Smoking Guns and Targets



The nub:

All evidence is only partially valid.

Whether we use evidence of ethical conduct cannot be determined by which outcome we want to appear.

Confronting immoral behavior is an act of courage that involves morality.

David W. Chambers, PhD, is professor of dental education, Arthur A. Dugoni School of Dentistry, San Francisco, and editor of the *Journal of the American College of Dentists*.

David W. Chambers, PhD

Imagine that you are on trial, having been accused of being ethical. This is a bit surrealistic, but the question arises: is there enough evidence to get a conviction? You explain to your attorney that you have passed the state board's ethics test. She shakes her head. "We need to find a smoking gun, or perhaps a pattern of consistent behavior."

A smoking gun would be a single dramatic act. To make it bulletproof, it should have no mixed motives and look 100 percent volitional. Was that pro bono work for the patient's sake or bad debt repackaged as good public relations? In your heart, your intentions were pure. But the world is so likely to misunderstand.

Perhaps it would be better to go for a pattern of outcomes. Open your charts, gather testimonials, point to your clean record. There is power in trends, but not so much when they come after the fact. A few targets with bullet holes where they should be might be impressive. But any lawyer worth his or her fee would show that (a) a pattern of outcomes does not prove that a particular act caused it, (b) chance could produce almost any pattern if we looked hard enough and (c) selective evidence is suspect.

This way of looking at matters is annoying. If we begin with the assumption that the profession is perfectly ethical, this all seems like mean-spirited troublemaking. But perhaps others do not start from that position. Can we really use profession of an intended outcome to demonstrate that we have behaved as intended?

Now let's change the situation in just one small way. Imagine you are on trial, but this time accused of being unethical. There is the smoking gun. An undisclosed broken file in the sinus, an insurance claim for extracting a tooth that is still in the arch. "It was an atypical accident, a reporting error, a misunderstanding," you say. You can explain it away. Some dentists believe the ADA Code of Ethics says do not criticize other dentist's work because you do not know the circumstances under which it was performed. Not quite true. It says you should take steps to find out what those circumstances were.

But perhaps there is an ugly pattern. Insurance companies tell me they can name the dozen most unethical practitioners based on distinctive claims patterns. Usually these problems are made to go away privately because there is no smoking gun and state enforcement agencies are underfunded out of mistrust of effective government. The best defense against pattern detection of immoral behavior is to break the chain of evidence. Until we curb policies of nondisclosure and settlements that self-dissolve to prevent discovery of past wrongdoing, smoking guns and patterns will be weak stuff. ■



FDA to Propose Hydrocodone Reclassification

The U.S. Food and Drug Administration recently said that, in recent years, it “has become increasingly concerned about the abuse and misuse of opioid products, which have sadly reached epidemic proportions in certain parts of the United States.”

As a result, the agency announced it would recommend a more restrictive classification of certain pain medications prescribed by physicians and dentists to “increase the controls on these products.”

“Due to the unique history of this issue and the tremendous amount of public interest, we are announcing the agency’s intent to recommend to HHS (U.S. Department of Health and Human Services) that hydrocodone combination products should be reclassified to a different and more restrictive schedule,” the FDA said in a statement on its website.

According to a news story from the American Dental Association, the ADA and American Association of Oral and Maxillofacial Surgeons

ADA Approves Topical Prescription Fluoride for Home

With evidence-based clinical recommendations published in the November *Journal of the American Dental Association*, the ADA recently approved the use of topical prescription fluoride for home use.

A panel of experts convened by the ADA Council on Scientific Affairs authored the recommendations, which are an update of the 2006 ADA recommendations and cover professionally applied and prescription-strength, home-use topical fluoride agents for caries prevention.

The authors reviewed 71 clinical trials from 82 articles and assessed the efficacy of various topical fluoride caries-preventive agents, including mouth rinses, varnishes, gels, foams and pastes.

“The panel recommends the following for people at risk of developing dental caries: 2.26 percent fluoride varnish or 1.23 percent fluoride (APF) gel, or a prescription-strength, home-use 0.5 percent fluoride gel or paste or 0.09 percent fluoride mouth rinse for patients 6 years or older. Only 2.26 percent fluoride varnish is recommended for children younger than 6 years,” the authors wrote.

According to the publication, the panel judged that the benefits outweighed the potential for harm for all professionally applied and prescription-strength, home-use topical fluoride agents and age groups except for children younger than 6 years. In these children, the authors wrote, “the risk of experiencing adverse events (particularly nausea and vomiting) associated with swallowing professionally applied topical fluoride agents outweighed the potential benefits of using all of the topical fluoride agents except for 2.26 percent fluoride varnish.”

Finally, the authors conclude that as part of the evidence-based approach to care, these clinical recommendations should be integrated with the practitioner’s professional judgment and the patient’s needs and preferences.

For more, see the clinical recommendations in the *The Journal of the American Dental Association*, vol. 144, no. 11, pp. 1279-1291.



previously told federal regulators that the proposed reclassification “could cause inconvenience, unnecessary suffering and higher out-of-pocket costs for patients with a legitimate need” for the medications.

“Going forward, the agency will continue working with professional organizations, consumer and patient groups and industry to ensure that

prescriber and patient education tools are readily available so that these products are properly prescribed and appropriately used by the patients who need them most,” the FDA said.

For more information, see the statement from the FDA at www.fda.gov/Drugs/DrugSafety/ucm372089.htm or read the ADA news story at ada.org/news/9390.aspx.

Study: Ceramic Primer and Bond Strength

In a new study, authors investigated the use of ceramic primers combined with self-adhesive resin composite cements on the shear bond strength (SBS) to zirconia and compared them with one conventional resin composite cement.

According to the study, published in *The Journal of the American Dental Association*, application of a ceramic primer did not result in a negative impact on SBS.

The authors examined the self-adhesive resin composite cements with and without the use of a ceramic primer and measured SBS initially (37° C for

three hours), after water storage (37° C for one, four, nine, 16 or 25 days) and after thermal cycling. They concluded that “ceramic primer in combination with self-adhesive resin composite cement demonstrated a positive effect on SBS to zirconia,” and added that because no negative impact was observed with the ceramic primers overall, they recommend clinicians apply a ceramic primer before cementing zirconia restorations.

For more, see the study in *The Journal of the American Dental Association*, vol. 144, no. 11, pp. 1261-1271.



Limit Sugar to Less than Five Teaspoons Daily

As part of a global initiative to reduce tooth decay, Newcastle University researchers recommend reducing sugar intake after recently studying the effects of sugars on our oral health. The researchers show that when less than 10 percent of total calories in the diet is made up of free sugars there are much lower levels of tooth decay. In this study, they go one step further and suggest that limiting sugars to less than 5 percent of calories (about five teaspoons a day) would bring even further benefits — minimizing the risk of dental cavities throughout life. For more, see the study, “Effect on Caries of Restricting Sugars Intake,” published online before print Dec. 9, 2013, in the *Journal of Dental Research*.

Uncontrolled Diabetes Could Lead to Inflamed Gums

According to the American Diabetes Association, an estimated 7 million of the 26 million people who have diabetes have no idea that they have the disease. What’s more, a recent study in *The Journal of the American Dental Association* reported that one in five cases of total tooth loss in the United States can be linked to diabetes.

“Oral health and overall health are related, so part of my role as a dentist is to flag signs of poor oral health that might also signal other serious health conditions,” said Alice G. Boghosian, DDS, a consumer advisor for the ADA, in a news release. “Severely inflamed gums, coupled with a patient’s medical history, can be cause for concern.”

In the news release on its website, the ADA said patients with diabetes have a lower resistance to infection, and that, combined with a longer healing process, makes them more susceptible to developing gum disease. It is especially important to remember that a dentist can be a valuable member of a patient’s diabetes health care team to help check for the signs of gum disease and provide tips on how to keep patients mouths healthy.

For more information, visit ada.org/9341.aspx or see the study, “Diabetes and tooth loss,” in *The Journal of the American Dental Association*, May 1, 2013, vol. 144, no. 5, pp. 478-485.





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Treating Traumatic Dental Injuries: Updated Guidelines from the AAE

The American Association of Endodontists recently published newly revised guidelines to help dental professionals quickly determine the best course of action to treat traumatic dental injuries.

According to a news release from the association, the *Recommended Guidelines of the American Association of Endodontists for the Treatment of Traumatic Dental Injuries* features treatment protocols for a variety of traumatic dental injuries including fracture, luxation, subluxation, concussion and avulsion. The *Guidelines* include diagnosis, treatment, patient instruction and follow-up procedures.

Initially developed by the AAE in 2004, the revised *Guidelines* aim to ensure consistency in addressing acute phase treatment while focusing on post-traumatic endodontic care. Notable changes in the revised *Guidelines* include:

- Recommendations for utilization of 3-D imaging for the detection

Drug May Guard Against Periodontitis

Authors of a new study, published in *Antimicrobial Agents and Chemotherapy*, report that a drug currently used to treat intestinal worms could protect people from periodontitis.

According to a news release from the American Society for Microbiology, the investigators showed in an animal model of periodontitis that the drug Oxantel inhibits the growth of polymicrobial biofilm by interfering with an enzyme that bacteria require for biofilm formation.

The researchers, who initially began their search for a therapy for periodontitis by studying the symbioses of the periodontal pathogens, found that the growth of periodontal biofilm was dependent on the availability of iron and heme (an iron-containing molecule related to hemoglobin), and that restricting these reduced levels of the enzyme fumarate reductase. Since Oxantel was known to inhibit fumarate reductase in some bacteria, the researchers tested its ability to inhibit fumarate reductase activity in *P. gingivalis*, according to the news release.

Authors of the new study also found that Oxantel disrupted the growth of polymicrobial biofilms containing *P. gingivalis*, *Tannerella forsythia* and *Treponema denticola*, a typical composition of periodontal biofilms, despite the fact that the latter alone is unaffected by Oxantel.

The researchers found that treatment with Oxantel downregulated six *P. gingivalis* gene products, and upregulated 22 gene products, all of which are part of a regulon (a genetic unit) that controls availability of heme.

For more information, see the study published ahead of print in the journal *Antimicrobial Agents and Chemotherapy*, Oct. 28, 2013.



- and monitoring of dental injuries;
 - Revised timelines for the treatment or monitoring of various injuries; and
 - The utilization of the latest materials for vital pulp therapy in the trauma patient.
- “The AAE and IADT [International Association of Dental Trauma] share a commitment to providing the most current and evidence-based information pertaining to the treatment of dental

trauma to both professionals and the public,” said Linda G. Levin, DDS, PhD, chair of the AAE special committee to revise the trauma guidelines, in the news release. “It is one more way we work to save the natural dentition.”

The *Guidelines*, and other dental trauma resources, are available free from the AAE website at aae.org/clinical-resources/trauma-resources.aspx.

Treating Gum Disease With Specific Immune Cells

A team of researchers at the University of Pittsburgh recently conducted a new animal study and found that the red, swollen and painful gums and bone destruction of periodontal disease could be effectively treated with the right kind of immune system cells.

The current strategies of mechanical tartar removal above and below the gum line and antimicrobial delivery aim to reduce the amount of oral bacteria on the tooth surface, explained co-author and co-investigator Charles Sfeir, DDS, PhD, of Pitt's School of Dental Medicine,

in a news release from the school.

"Currently, we try to control the buildup of bacteria so it doesn't trigger severe inflammation, which could eventually damage the bone and tissue that hold the teeth in place," Sfeir said in the news release. "But that strategy doesn't address the real cause of the problem, which is an overreaction of the immune system that causes a needlessly aggressive response to the presence of oral bacteria. There is a real need to design new approaches to treat periodontal disease."

In the new study, the research



team developed a system of polymer microspheres to slowly release a chemokine, or signaling protein, called CCL22 that attracts regulatory T-cells, and placed tiny amounts of the paste-like agent between the gums and teeth of animals with periodontal disease. They found that bringing specific immune cells to the inflamed tissues led to "improvements of standard measures of periodontal disease, including decreased pocket depth and gum bleeding, reflecting a reduction in inflammation as a result of increased numbers of regulatory T-cells." Additionally, the researchers report that microCT-scanning showed lower rates of bone loss.

"The tools are better and people are better trained now, but we've been doing much the same thing for hundreds of years," said senior author Steven Little, PhD, in the news release. "Now, this homing beacon for Treg cells, combined with professional cleaning, could give us a new way of preventing the serious consequences of periodontal disease by correcting the immune imbalance that underlies the condition."

For more information, see the study published in *Proceedings of the National Academy of Sciences*, Nov. 12, 2013, vol. 110, no. 46, pp. 18525-18530.

Visual Illusion Can Influence Treatment

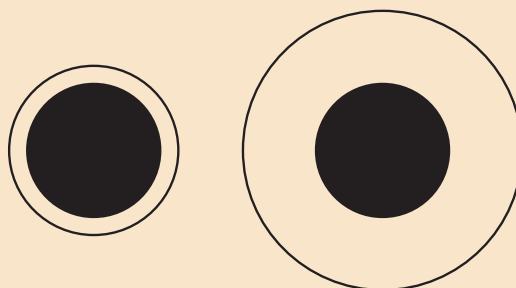
In a new study, authors focused on the way that endodontists perform root canals and how illusions can influence treatment.

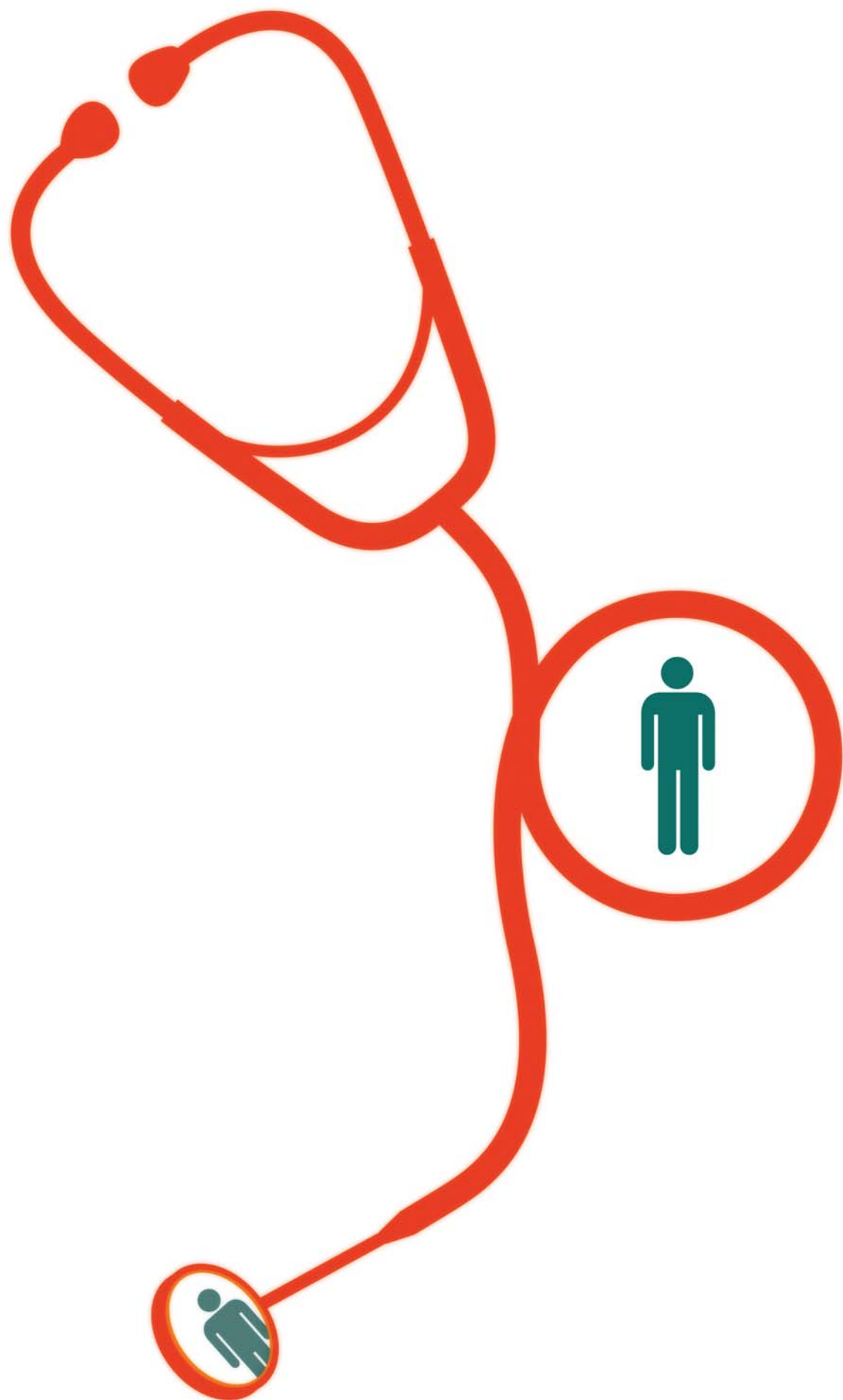
To evaluate this, researchers supplied eight practicing endodontic specialists with at least 21 isolated teeth each, randomly sampled from a much larger sample of teeth they were likely to encounter. The teeth contained holes, and the endodontists were asked to cut cavities in preparation for filling. Each tooth presented varying degree of visual illusion, the Delboeuf illusion, that made the holes appear smaller than they were.

"The Delboeuf illusion is one example of visual illusions in which the context of an object affects its perceived size. When the context is large, the object appears smaller than it is," authors explained. In this study, the endodontists and the persons measuring the cavities were blind to the parameters of the illusion.

The authors found that "the size of cavity endodontists made was linearly related to the potency of the Delboeuf illusion ($p < .01$) with an effect size (Cohen's d) of 1.41," and that when the holes appeared smaller, the endodontists made cavities larger than needed.

For more, see the study published Oct. 23, 2013, in *PLOS One*, vol. 8, no. 10, e77343.





Interprofessional Education and Practice ... Moving Toward Collaborative, Patient-centered Care

Lindsey A. Robinson, DDS, and David M. Krol, MD, MPH, FAAP

GUEST EDITORS

Lindsey A. Robinson, DDS, is the immediate past-president of the California Dental Association, past chair of the CDA Foundation and represents CDA on the Institute of Medicine Health Literacy Roundtable. She received her dental degree from the Herman Ostrow School of Dentistry of the University of Southern California and a certificate in pediatric dentistry from the University of Florida. Dr. Robinson was a member of the ADA Council on Access, Prevention and Interprofessional Relations for six years and served as vice chair for a year and chair for two years. She is a founding board member of the U.S. National Oral Health Alliance. Dr. Robinson practices in Grass Valley, Calif.
Conflict of Interest
Disclosure: None reported.

David M. Krol, MD, MPH, FAAP, a pediatrician, is a senior program officer of the Robert Wood Johnson Foundation. He serves on the executive committee of the American Academy of Pediatrics (AAP) Section on Oral Health and is on the steering committee of the AAP Oral Health Initiative. Dr. Krol received his master of public health degree from the Mailman School of Public Health at Columbia University, and his medical degree from the Yale School of Medicine. Dr. Krol played professional baseball with the Minnesota Twins.
Conflict of Interest
Disclosure: None reported.

This is the first of three *Journal* issues dedicated to interprofessional education (IPE) and practice. The World Health Organization defines IPE as occurring “when students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes.” It defines interprofessional or collaborative practice as occurring “when multiple health workers from different professional backgrounds provide comprehensive services by working with patients, their families, careers and communities to deliver the highest quality of care across settings.”¹ To be faithful to the theme, a pediatrician and a pediatric dentist have teamed up to bring together a group of authors who are national leaders in the field who have a deep understanding of the challenges and opportunities this subject represents for the profession of dentistry. In addition to the *Journal*

issues, the California Dental Association and American Dental Education Association (ADEA) are co-sponsoring a conference on IPE to be convened in San Francisco Feb. 3–4 to understand the evolving role of dentists as part of a multidisciplinary health care team.

Traditionally, health professional education has been delivered in isolated silos to the detriment of safety and quality care delivery making it more difficult to meet the needs of patients who present with complex conditions more conducive to a multidisciplinary treatment approach. In the last dozen years, much has been written on the subject of interprofessional team building, including the report published by the Institute of Medicine in 2003, *Health Professions Education: A Bridge to Quality*, which urged educators in the health professions and accrediting agencies to ensure that students graduated with proficiency in five domains, including working as part of an interdisciplinary team.² In 2008, six national education

associations representing the health professions³ established a unique partnership called the Interprofessional Education Collaborative (IPEC), and convened an expert panel to develop core competencies needed to train future health professionals to provide team-based, quality care within an evolving national health care system.⁴ Building on this work in 2011, a conference sponsored by the Health Resources and Services Administration (HRSA) and three private foundations was held to develop strategies based on IPEC's core competencies to "transform health professional education and health care delivery in the United States."⁵ More recently, HRSA and four private foundations funded the National Center for Interprofessional Practice and Education at the University of Minnesota to serve as a national coordinating center for interprofessional education and collaborative practice.

Kicking off this issue is an article by Burton Edelstein, DDS, MPH, founding president of the Children's Dental Health Project and professor of Health Policy and Management at Columbia University School of Dental Medicine. Dr. Edelstein explains how recent federal legislation contains drivers that promote medical-dental collaboration and sets the stage for increased integration of financing and delivery systems. He goes on to describe additional trends that will influence dental care — practice aggregation, consumerism, a population-based focus and movement toward value-based purchasing and accountable care organizations.

Following in the issue is the keynote address given by the president and CEO of ADEA, Richard Valachovic, DMD, MPH, for the Symposium on Interprofessional Education and Practice hosted by Columbia University College of Dental Medicine in June of 2012. He describes how the collaborative model

will completely shift the way health professionals are educated and how health care is delivered. This movement represents a profound systemic change toward an interdisciplinary team-based approach to care that has the potential to increase quality while providing greater value for health care dollars spent.

In the area of public health practice, community Health Centers have pioneered the integrated delivery system approach made easier through co-location of multiple disciplines, including primary care, dentistry and mental health, at the same site. Irene Hilton, DDS, MPH, describes the 15-year initiative to develop infrastructure for delivery system integration, highlighting successes and challenges that will help inform other practice settings.

Paul Manos, DDS, dental director for United Concordia Dental (UCD), contributes a payer's perspective from a company that offers both medical and dental insurance to large group purchasers. He lays out trends within the dental benefits industry to incorporate evidence in benefit structure and the development of metrics to measure improvements in health outcomes. Given the known oral-systemic connection related to the chronic disease of diabetes, Dr. Manos tells the story of how UCD researched claims data to determine if there was a measurable relationship between dental treatment and diabetic outcomes.

Finally, the article by interprofessional colleagues at New York University, Judith Haber, APRN, PhD, Andrew I. Spielman, DMD, MS, PhD, Mark Wolff, DDS, PhD, and Donna Shelley, MD, MPH, describes the first eight years of experience with a pioneering model of interprofessional education and collaborative practice that began in 2005 with the merger of the Colleges of Dentistry and Nursing, whose goal was establishing an integrated

oral-systemic approach toward clinical education, research and practice experience that improves health outcomes for patients. They thoughtfully share successes, lessons learned and challenges that will inform other institutions moving forward with this unique model.

Our great appreciation and thanks go to our authors for generously sharing their knowledge and experience of IPE and a multidisciplinary approach to practice. Collectively, these articles provide much food-for-thought on why and how dentists will need to adapt to take on new roles in the evolving health care system. ■

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The Roles of Federal Legislation and Evolving Health Care Systems in Promoting Medical-Dental Collaboration

Burton L. Edelstein, DDS, MPH

ABSTRACT Recent federal health care legislation contains explicit and implicit drivers for medical-dental collaboration. These laws implicitly promote health care evolution through value-based financing, “big data” and health information technology, increased number of care providers and a more holistic approach. Additional changes — practice aggregation, consumerism and population health perspectives — may also influence dental care. While dentistry will likely lag behind medicine toward value-based and accountable care organizations, dentists will be affected by changing consumer expectations.

AUTHOR

Burton L. Edelstein, DDS, MPH, is a professor of Dentistry and Health Policy and Management at Columbia University in New York City. He is also a senior fellow in public policy and founding president of the Children’s Dental Health Project in Washington, D.C.
Conflict of Interest
Disclosure: None reported.

Recent major federal health care laws — the Affordable Care Act (ACA) and the Children’s Health Insurance Program Reauthorization Act (CHIPRA) — contain drivers for interprofessional collaboration that promise to bridge the medical-dental divide. Some of these laws’ provisions are explicit in their promotion of interprofessional collaboration while others are implicit. Taken together, they set the stage for a future in which distinctions between medical and dental delivery and financing systems may become increasingly muted.

Paramount among explicit drivers is the very definition of dental care within the ACA’s listing of “essential

health benefits.” These benefits, to be offered by insurance plans sold in state-based insurance exchanges beginning this year, require “pediatric services, including oral and vision care.” This phrasing, for the first time in federal legislation, characterizes dental services as an essential component of pediatric health care. Congress clearly deemed that oral health care for children is to be regarded as a key component of well-child care, not as a separate service or independent benefit. As such, the law anticipates a role for primary care medical providers — pediatricians, pediatric nurse practitioners and family physicians — in collaboration with dental professionals, in assuring oral

health supervision from early in a child's life. Congress's action reflects increasing oral health activity by pediatric health care experts. According to the American Academy of Pediatrics, roles for medical providers in an integrated approach to oral health supervision include screening, counseling, fluoridating (typically with fluoride varnish) and referring for ongoing comprehensive dental care.¹ Additional evidence of oral health engagement by primary care medical providers include the American Academy of Family Physicians' Smiles for Life online curriculum,² the American Academy of Pediatrics' Bright Futures well-child guidance³ and "Children's Oral Health" activities,⁴ increasing numbers of state Medicaid programs that reimburse primary care medical providers to apply fluoride varnish⁵ and federal Medicaid's requirement that states report on the "number of children [in Medicaid and CHIP] receiving [dental] services from a nondentist provider."⁶

Unfortunately, recent federal regulatory efforts addressing the participation of "stand-alone" dental insurers in the exchanges have perpetuated the longstanding segregation of dental from medical coverage, financing and care. Integration of dental services with pediatric health care will now depend significantly on actions taken by states as they tailor their exchange policies and procedures in ways that can either promote or counter meaningful medical-dental integration.

ACA also anticipates the need to better train both dental and medical pediatric providers in the best care of children with regard to their oral health. Embedded in the authorization for primary care dental programs is an authorization for grants "to provide technical assistance to pediatric training programs in developing and implementing instruction regarding the

oral health status, dental care needs and risk-based clinical disease management of all pediatric populations with an emphasis on underserved children." Congressional intent was to ensure that both dental and medical providers of pediatric services would enhance their learning and skills in ways that address inequities in oral health and best practices for prevention and disease management.

Also explicit in promoting medical-dental collaboration around oral health is the requirement in CHIPRA that states, "The Secretary shall develop and

This phrasing, for the first time in federal legislation, characterizes dental services as an essential component of pediatric health care.

implement, through entities that fund or provide perinatal care services to targeted low-income children, ... a program to deliver oral health educational materials that inform new parents about risks for, and prevention of, early childhood caries and the need for a dental visit within their newborn's first year of life." This requirement engages health plans and obstetrical and pediatric medical providers in assuring that new parents are informed about oral health and dental care appropriate for their newborns. By structuring the requirement in this way, Congress has paved the way for medical-dental integration and has shared responsibility for oral health promotion with "medical" providers. Again, regulations have not kept up with congressional intent as no final rules have yet been established

to implement this provision that is progressive in its neonatal attention to oral health and its assumption of shared responsibility by medical insurers.

Less obvious, but perhaps more far-reaching, are other elements of ACA and CHIPRA that aggressively stimulate systemic change in U.S. health care. While these will impact medical providers initially, they are likely to impact dental providers over time as they play out in health care marketplaces across the country. These may either facilitate or hamper integration depending upon local or state action by governments, health care systems, insurers and provider groups. Yet each of these elements of health care envisioned by ACA can be considered potential drivers of change that may stimulate creative and dynamic advances in U.S. health care, including medical, dental and interdisciplinary endeavors.

Value-based Purchasing

Paying for value (that is, incentivizing best health outcomes per unit cost), rather than our current practice of paying for volume (that is, rewarding numbers of services regardless of outcomes), is a revolutionary approach to health care financing that requires outcome metrics that are meaningful, measurable and manageable. Envisioned by ACA are global payments to vertically integrate health care systems called accountable care organizations (ACOs) that incentivize aggregate health outcomes for the covered population. In such a system, for example, medical providers would be paid based on the proportion of patients diagnosed with hypertension who are normotensive, of diabetics who have a stable hemoglobin A1C, of smokers who quit smoking and/or the proportion of births that are not premature or underweight. As oral health is increasingly recognized to impact

many medical conditions, one strategy that ACOs might pursue in maximizing their value proposition is the inclusion of dental services within their medical-management programs for patients who have such chronic conditions or are pregnant. In such cases, the potential positive return on investment in dental care may overwhelm any reticence to include dental care in chronic disease management protocols or prenatal care. Such creative and dynamic rethinking of the medical-dental interface may be a natural outgrowth of value-based purchasing, vertical integration and ACOs. Additionally, value-based purchasing will likely reach dentistry at some time in the future. Such financing approaches will require that dentistry demonstrate value in terms of health outcomes rather than assume, as is inherent in financing today, that more procedures yield better oral health outcomes. As dentistry explores options to implement such an approach, it may look to and further engage with medicine to learn of potential collaborations, pitfalls and best practices.

A secondary impact of this value-based purchasing and recognition of the importance of dental care within general health care is a potential shift in perception about dentistry itself. Today, many patients and potential patients perceive dentistry as an elective, esthetics-oriented service that is focused on whitened, straightened teeth rather than as an essential health service. As patients increasingly find dental providers embedded within medical systems of care, this awareness is likely to grow considerably. As they become accustomed to medical care that is oriented to their overall health status, rather than to only the alleviation of their current medical problem, they may similarly look to dentists for oral health outcomes.

Big Data and Health Information Technology (HIT)

Although authorized through a separate law, the health information technology for economic and clinical health (HITECH) provisions of the 2009 American Recovery and Reinvestment Act (ARRA) are intimately linked to ACA provisions in support of health care information technology that seamlessly informs a patient's multiple providers, is interoperable across various IT platforms and promotes efficiency through the elimination of redundancy.

The potential positive return on investment in dental care may overwhelm any reticence to include dental care in chronic disease management protocols or prenatal care.

The interoperability requirement coupled with the “meaningful use” requirement⁷ for certified electronic health records will facilitate medical-dental collaboration through HIT. Already in place are significant multiyear financial incentives to medical and dental providers who participate in federal insurance programs to purchase hardware and software. Also driving the likely impact of HIT in dentistry is the growing adoption of electronic health records and office management programs by dentists, even without federal incentives. While individual dentists, practicing in solo or small group environments, may regard themselves as independent, electronic records systems create virtual networks of dental practices. Each dental claim submitted through an electronic claims

processing vendor, each purchase made online and each web-based activity engaged by dentists creates a “data trail” that can be aggregated by “big data” vendors. Using algorithms, these vendors can both target the individual dentist and characterize each dentist's contribution to the overall dental delivery system. Algorithms that link medical and dental care, particularly around individual practices or patients, may in the future drive enhanced interprofessional collaboration. As health systems continue to aggregate small providers (individual and small group practices), it is easy to envision a day when a patient's record on a computer screen reminds the dentist to monitor the patient's blood pressure or hemoglobin A1C and to remind the patient of an upcoming medical visit or dietary recommendation. Such medical-dental integrated records systems are already in place in many health care systems and health centers, notably the Veterans Administration and the Family Health Center of Marshfield in Marshfield, Wis.

The National Institutes of Health is already engaged in promoting the best use of “big data” and HIT to advance both the content and structure of U.S. health care. It has recently initiated a “big data to knowledge (BD2K)” initiative to fund “long- and short-term training at all professional levels, in areas essential for accessing, organizing, analyzing and integrating biomedical big data.”⁸

More Primary Care Providers and New Provider Types

The ACA foresees the ongoing need for expanded availability of primary care medical and dental services and takes a number of steps to promote expansions including increased training grants and graduate medical education support for primary care training in medicine and

dentistry, expanded funding to train primary care faculty and assistance with faculty loan repayment, authorization to fund demonstrations of alternative dental providers, including those who would work with medical providers, and support of a multidisciplinary “public health workforce” program. The law also authorizes a National Health Care Workforce Commission to support national, state and local policymaking, coordinate workforce issues across agencies, evaluate the education and training of health professionals with regard to demand for services, facilitate coordination across levels of government and encourage workforce innovations. Because dentistry is cited as a priority issue for the commission, it is likely that interprofessional collaborations and “mainstreaming” of dentistry within primary health care are likely topics for the commission to explore.

In their search for efficiency and value, ACOs will also drive expanded roles for nontraditional health care providers, especially for the “helping professions” and ancillary health workers, including health educators, nutritionists, social workers, technicians, psychologists, pharmacists and community health workers, among others. These health care counselors will promote wellness, advance health literacy, encourage positive health habits and facilitate individualized care plans. Many are likely to be “generalists” in the sense that they will engage patients in holistic health promotion that is as salutary for oral as general health.

Federal legislation has a secondary effect of promoting other changes currently underway in the health care financing and delivery environments. These too may devolve onto dentistry as they continue to play out in the larger health care environment.

Practice Aggregation

As health care providers are called upon to become increasingly cost-conscious, as consumers of health care services gain access to comparative cost information on the web and as the public has become increasingly savvy about their health care needs, there is growing pressure to capitalize on economies of scale and new business models. The solo physician is becoming scarcer. Medical group practices are increasing in numbers and size. Practice management organizations are evolving. Health systems are purchasing

Regardless of which path a dentist may choose, it is the health of our patients that can benefit most from ever-stronger medical-dental collaboration.

and aggregating small practices into their systems in preparation for transformation into ACOs. Medical care is moving closer to the public via urgent care centers, “docs in the box,” expanding roles for pharmacists and placement of nurse practitioners in pharmacies and other consumer sites.

Consumerism

Information technology, social networking and a growing sense of consumer empowerment in health care are changing the patient-doctor dyad in ways that may both promote and endanger health outcomes.

Population Health

Population health, the notion that health care providers contribute to the health of groups rather than

only to the health of individuals, is a concept of increasing interest to health care purchasers. Government and business alike seek to determine how a “covered population’s” health impacts other issues of importance to them, issues as disparate as workforce productivity and disability payments.

Considering all of these explicit and implicit legislative drivers for health care change that may promote interprofessional engagement, it appears that dentistry is likely to be at the tail end of this next health care evolution. Dentists are likely to become engaged in these transformations first through the back door wherever ACOs determine that dental services can truly improve management of medical conditions. With time, if these changes come to be and if patients’ roles and views evolve as these forces anticipate, our patients too may expect a different kind of care — one that is more about oral health than about dental repair.

While medical care system evolution may or may not move the majority of dentists into tighter collaboration with medical care providers, it will likely create many opportunities for some to engage in interdisciplinary value-based medical systems. Others may emulate the best of what they see on the “medical side” while remaining independent of ACOs, and still others may elect to watch from the sidelines. Regardless of which path a dentist may choose, it is the health of our patients that can benefit most from ever-stronger medical-dental collaboration. ■

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Integrating Oral and Overall Health Care – On the Road to Interprofessional Education and Practice: Building a Foundation for Interprofessional Education and Practice

Richard W. Valachovic, DMD, MPH

AUTHOR

Richard W. Valachovic, DMD, MPH, is the president and CEO of the American Dental Education Association (ADEA). Dr. Valachovic has led the organization's work in integrating dentistry with interprofessional education and practice, and represents ADEA on the Interprofessional Education Collaborative (IPEC). IPEC's focus is to more thoroughly coordinate and integrate the education of dentists, physicians, nurses, pharmacists, public health professionals and other members of the health care team to provide more collaborative and patient-centered care. This address is reprinted with permission from Dr. Valachovic.

Conflict of Interest

Disclosure: None reported.

The following remarks were made by Dr. Valachovic as the keynote address at the Symposium on Interprofessional Education and Practice hosted by the Columbia University College of Dental Medicine on June 14-15, 2012.

Interprofessional education and practice are game changers. They will completely change the way that health professionals are educated and the way that health care is delivered. The transition from our current silo-based approach to team-based education and practice is underway, and there is nothing that we can do to stop it from happening. I say that these are game changers. They are. The changes that are underway are not just minor revisions of the rules that have been in place for the last century. The changes represent a systemic change in the culture of health professions' education and practice. And for those of us in the dental profession, I firmly believe that it is a game changer as well.

I was asked to speak on "building a foundation for interprofessional education and practice." In order for me to do that, I need to provide a bit of a historical perspective as well as let you know about my work at the American Dental Education Association related to interprofessional education and collaborative practice. Just three years ago, the term IPE, as we now call interprofessional education, was a bit of an ethereal concept to which I devoted very little time in my role as executive director of the ADEA. Today, the work that I do that is related to IPE consumes about a third of my time. Three years ago, there were not even architectural drawings for a foundation of IPE in health professions' education. Today, the foundation has been built just as surely as if it were concrete and plans are being finalized for the rest of the structure.

What happened in these three years to make such a tectonic shift occur? We all recognize that the cost of health care in

the United States consumes way too much of our gross domestic product. The U.S. spends more on health care as a percentage of GDP than any other country in the world. And of the money that we spend on health care in this country, nearly two-thirds of it comes from the government in terms of Medicare, Medicaid, TRICARE for military personnel, CHIP and the Veterans Administration. In the private sector, more and more individuals are being insured by major managed health care systems like Kaiser Permanente, UnitedHealthcare, Geisinger, Mayo Clinic and others. UnitedHealthcare alone insures 70 million Americans.

And at the same time, we also recognize that the quality of care remains a critical issue to be addressed. Are there ways to bend the health care cost curve and to raise the level of quality of the care that is being provided? Team-based care is now being recognized as one of the most promising answers to this question. And to have team-based practice, one has to begin with interprofessional education. Which comes first, IPE or team-based care? A question like this should have an easy answer. But it is much more like the question, “Which came first, the chicken or the egg?” The answer is not so easy.

So what has happened in the past few years to drive the IPE and team-based care train? First there are market forces. The large managed health care systems like UnitedHealthcare and others have recognized that there are significant cost savings and improved patient outcomes through team-based care. Add to this the experience of the VA and other governmental health care systems that use team-based care approaches, and one can start to see the impact. The year 2012 is the first year that more than 51 percent of all physicians are employees and not independent practitioners. We have to acknowledge that Dr. Marcus

Welby has finally closed his practice. We know that many of these systems will include dental care as part of their market approaches to differentiate themselves from their competitors. Second, there will be regulatory issues, and these will be in place no matter what the decision is of the Supreme Court this month or the presidential election in November. The Patient Protection and Affordable Care Act is focused on team-based care. Throughout the law, there are multiple references to team-based and collaborative care. Included in the law is

There is a general feeling that dentistry has much to offer the rest of the health care world as they develop prevention strategies.

the implementation of accountable care organizations, or ACOs, for which team-based care will be one of the primary ways that systems can financially succeed and compete under this new structure. There are many, many references to dental care in the ACA, especially for children. Third, there will be issues related to the way in which health care is delivered. The focus of health care delivery in the future will be in ambulatory medical and surgical settings. Hospitals will become much more focused on intensive care. Chronic disease management is much more likely to be provided in community settings. These delivery portals are much more efficient when care is delivered by a team. In light of this, dental care is much more likely to be delivered integrated with these new settings. Fourth, a focus of these market,

regulatory and delivery portal issues will be on the value of prevention. The Centers for Medicare and Medicaid Services Innovation Fund and the CDC are now sponsoring a prevention effort called the Million Hearts Campaign, working to prevent a million heart attacks and strokes in the next five years. The campaign addresses the ABCS — aspirin, blood pressure, cholesterol and smoking. Less than half of Americans meet the targets for these factors. In my conversations with leaders at CMS and at CDC, they always point to dentistry as the example of successful prevention. Sure, we all know that community water fluoridation is recognized as one of the 10 public health successes of the 20th century. But they also always talk about their dental hygienist, and how the hygienist is the most effective prevention provider out there, making each of them feel guilty about flossing and their oral health. There is a general feeling that dentistry has much to offer the rest of the health care world as they develop prevention strategies.

So, what does the foundation for interprofessional education and collaborative practice look like? As I have been saying, the speed of change in IPE is unbelievably fast. We are in whitewater right now. So much has happened in just the last three years. If I were to identify where it all started and the foundation was being laid, it would be the decision by six associations of schools of the health professions that came together in 2008, the Association of American Medical Colleges (AAMC), the American Association of Colleges of Osteopathic Medicine (AACOM), the American Association of Critical-Care Nurses (AACN), the American Association of Colleges of Pharmacy (AACP), the Association of Schools of Public Health (ASPH) and us, to form the Interprofessional Education Collaborative, what we refer to as the

IPEC. We decided to come together to develop a common set of competencies for interprofessional education and practice. The report, *Core Competencies for Interprofessional Collaborative Practice*, was produced by an expert panel convened by the IPEC, and each of us appointed two representatives to serve on the panel. Our representatives were Sandra Andrieu, PhD, from LSU School of Dentistry and Leo Rouse, DDS, from the Howard University College of Dentistry. The report, released last May, identifies four broad domains of interprofessional competency — values and ethics, roles and responsibilities, interprofessional communication and team-based care — as well as 38 subcompetencies that specifically describe essential behaviors. The six of us who are the chief appointed officers of our organizations have met every Monday morning for the past three years and once a month for a full day meeting. Two key reports were also released during this time, one in *Lancet* on IPE and collaborative practice and the other by the Institute of Medicine on the future of nursing. Both of these reports highlight the value of IPE and team-based care, and the importance of allowing health care professions to work at the full scope of their licenses. ADEA is a founding member of a new Institute of Medicine Global Forum on Innovation in Health Professional Education. The six of us in the IPEC created an IPEC Faculty Development Institute. Thirty academic health centers (AHC) sent teams from multiple schools within their AHC to a program that we held in Washington, D.C., last month, of which 11 had a dental school representative. Sixty additional AHCs are on a waiting list for an additional program that will be held in October. On behalf of the IPEC, AAMC has established a new portal within MedEdPORTAL to house resources for IPE for all of the health

professions. Throughout all of this, George Thibault, MD, and the Macy Foundation, along with many others, have been strong supporters of the work developing these documents and resources. Finally, there has been significant movement within the accrediting bodies of the health professions, including the Commission on Dental Accreditation (CODA), to promote the integration of IPE into the curriculum.

There is no doubt that the challenges to implementing IPE on campuses can be enormous. There are logistical issues

There are more than 300 million dental encounters each year, and for the most part, they are well-patient visits, as opposed to medical visits.

related to the timing of semesters, of class time scheduling and of externship and rotation lengths. The individual schools within many academic health centers are geographically distributed, and some actually have their health professions schools in different cities. For dental schools, not all of our campuses are within universities that have a medical school. There are cultural issues that need to be overcome. The pipeline for new health professions' students include many who assume that independent siloed practice is what they have dreamed of and are led to believe would be available to them. But, we in the IPEC believe that with the right leadership and the appropriate commitment, these mostly logistical challenges will be addressed and eliminated.

So, let's come back to dentistry and the reasons that dentistry needs to be part of IPE now and collaborative practice in the future. Whatever the relationship between oral health and overall well-being turns out to be, the mouth will remain a significant source of inflammation. We now practice in a primary care model in ambulatory settings in the vast majority of cases. There are more than 300 million dental encounters each year, and for the most part, they are well-patient visits, as opposed to medical visits, which tend to be motivated by some sign or symptom of a disease or medical condition. Dentistry has an historical focus on primary prevention. The mouth is a mirror of many underlying conditions in the human body. Our patients are living longer, are retaining more of their teeth through the end of their lives and have more complicated medical conditions, often requiring more collaboration between the dentist and the patient's health care provider. One of the key results from the reports that we are getting from the field is that the personal relationships that develop when dental students and residents are part of health care teams result in a much more effective understanding of the role that dentists play in the well-being of patients and enhanced referrals for dental care are the result.

I believe that the opportunities for us as educators to introduce interprofessional education are immense at this time, that improved patient outcomes will result, that dentistry will finally be integrated into an overall approach to health for our patients and that all of society will be better off as a result.

Thank you for your attention. ■

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Interdisciplinary Collaboration: What Private Practice Can Learn From the Health Center Experience

Irene V. Hilton, DDS, MPH

ABSTRACT Ideas on what medical-dental integration can look like on a practical level can be gained from studying efforts made in Federally Qualified Health Centers (Health Centers). Over the last 15 years, Health Centers have embarked on several initiatives that incorporated the development of infrastructure for medical-dental integration. This paper reviews these efforts and highlights successes, challenges and best practices that can bolster efforts in all dental practice settings.

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Conflict of Interest
Disclosure: None reported.

Health Centers are community-based and patient-directed organizations that serve populations with limited access to health care.¹ Health Centers were first developed and funded in the mid-60s as part of President Lyndon Johnson's war on poverty.^{2,3} Section 330 of the Public Health Service Act consolidated and defined the characteristics of Health Centers.⁴ From an initial group of two demonstration sites, the number of Health Centers has grown to 1,128 organizations across the United States and its territories, many with multiple clinic locations, providing primary care medical services to 20.2 million individuals in 2011.⁵

Most Health Centers provide multiple health care services that can include dental, behavioral health, pharmacy,

podiatry, optometry, laboratory, imaging and alternative medicine. Dental care is one of the most frequently provided services. In 2011, of 1,128 grantee organizations, 862 Health Centers (77 percent) had at least one dental site, and collectively provided dental care to 4 million individuals.⁵ It should be noted, however, that these numbers show that Health Center dental programs currently only have the capacity to meet the needs of 23 percent of the medical users.

Because the majority of Health Centers have at least one location where primary care is located at the same site as dental and other health services, intuitively, Health Centers would appear to be ideal locations for the development of programs and initiatives that explore closer collaboration between disciplines and afford the opportunity to study

the implementation of such programs and understand the facilitators and barriers to successful implementation.

Early Experiences

The initial experiences in medical-dental integration in Health Centers occurred in 1998, when the Health Resources and Services Administration (HRSA) Bureau of Primary Health Care (BPHC), in partnership with the Institute for Healthcare Improvement, embarked on a nationwide initiative to improve care for people with chronic conditions by funding Health Disparities Collaboratives.⁶ The first Collaborative focused on diabetes, one of the most common chronic diseases found in Health Center primary care patients.

A few of the participating Health Centers elected to make obtaining dental care an aspect of diabetic care that would be tracked and measured, along with other referrals such as obtaining an optometry exam, a podiatry exam and understanding that negative oral health status, especially the presence of uncontrolled periodontal disease, had an adverse affect on glycemic control.^{7,8}

Oral Health Disparities Collaborative

In 2005, medical-dental integration in Health Centers took another step when the HRSA launched the Oral Health Disparities Collaborative Pilot, which focused on the oral health of two target populations, children ages 0 to 5 and pregnant women.⁹

In this project, education was a crucial issue for both medical and dental professionals. At the pilot Health Center sites there were challenges in persuading busy primary care providers to take on the responsibility of oral health screenings and dental referrals. The first step was education on the role of oral health in good primary care and training on how to screen the target populations for obvious

oral health problems and to provide some initial oral health counseling. The key was assuring that the patients were referred to dental practitioners for comprehensive examinations, appropriate counseling and treatment.

Dental providers had concerns about examining and treating very young children and pregnant women. To counter professional resistance, the Collaborative faculty provided the latest information on clinical best practices and support on how to incorporate evidence-based knowledge on oral health into clinical practice.

Quality of care and improving patient health outcomes have been a concern for more than 60 years.

Another challenge was increasing dental clinic capacity. Once primary care providers began referring pregnant women and very small children, this created more demand than the dental clinics initially were able to meet, a problem that was partially tackled through system redesign in scheduling, practice flow and increased allied team member utilization.

Participating in the pilot required a complete rethinking of how the Health Center dental program operated its clinics. As one of the participating dental directors stated, *"We didn't see kids — too scary. We weren't aggressive with in-office fluoride treatments — we just handed out the fluoride gel — and we definitely didn't make any connection between the mom's oral health and her child's well-being. All that has changed now."*

The pilot lasted 18 months. Projectwide across the four Health Centers, the percentage of pregnant women receiving dental care nearly tripled from baseline and the percentage of very young children increased eightfold. An unexpected result was an increase in dental clinic revenues from increased efficiency and a boost in the number of patients with public insurance.

Oral Health in the Patient-centered Health Home

Dentistry exists in the greater sphere of health care and is not immune to the forces and drivers of change in the larger health care system. Quality of care and improving patient health outcomes have been a concern for more than 60 years.¹⁰ An emerging quality concept is the Patient Center Medical Home, which can be defined as primary care that is patient centered, comprehensive, team based, coordinated, accessible and focused on quality and safety.¹¹ A result of this concept is the encouragement of integration and coordination of all aspects of patient care between health care providers, for example, dental, medical and behavioral care and community resources, with the goal of improving health care quality and outcomes and lowering health care costs.¹²

An assessment of Health Center dental programs was conducted in 2011 to determine the type of medical-dental integration activities occurring, the facilitating factors and challenges to medical-dental integration in the Health Center setting and some of the best practices in Health Centers that were early adopters of medical-dental integration.¹³ The results of this study hold some important lessons for all dental clinicians regardless of practice setting, and may hold some clues about the future of dental practice.

Medical-Dental Integration Activities

Health Centers are using their health information technology (HIT) system patient databases to identify targeted populations for integration efforts. Common age cohorts are very young children ages 0 to 5, children or adults. Medical conditions include pregnancy, diabetes and cardiovascular disease.

Once specific population lists are developed, strategies to guide patients into dental care include sending targeted mailings and having staff directly contact potential patients. Programs utilize software capabilities to alert medical providers about specific patients who need a dental referral in real time during the primary care visit. HIT systems can also be used to generate direct e-referrals from the medical department to the dental clinic. In some Health Centers, nondental department staff has access to the electronic dental department schedule to make exam appointments.

Clinically, dental providers can access diabetic patients' HBA1c levels and medical appointment attendance records and can refer patients back to medical who are due for visits. One Health Center configured its electronic health records (EHR) to create a health summary form. As the medical history is being completed in primary care, certain fields such as medications and key social/medical history items will also self-populate into a summary form of data that dental providers can access during dental visits.

At sites where medical and dental services are co-located, medical providers are able to ask dentists for quick consults. Dental staff is able to send patients with high blood pressure or potential uncontrolled diabetes directly to primary care for same-day assessment.

Dental department staff contributes to the Health Center's internal education programs, presenting on oral health

topics during lunch-and-learn sessions and grand rounds. Dental education brochures are provided for medical clinic waiting rooms, and materials on topics such as diabetes and obesity are available in the dental waiting room.

Many innovative modifications to health care delivery have been made by Health Centers to facilitate integration between medical and dental programs. Some Health Centers' dental programs give priority access to targeted populations by setting aside appointments and/or providing "open access," allowing drop-

Progress in integrating oral health into the medical home is the result of a continuous process, with many changes and new concepts introduced along the way.

in to the dental department for an exam on the same day as a primary care visit.

Other strategies include "max-packed visits" such as scheduling immunizations in primary care and a dental checkup all in one visit, or a "well-child visit" for ages 0 to 5 that includes a medical, dental and behavioral encounter in one visit, or providing adjunct services such as HIV diagnostic swabbing and diabetes screening as a part of care in dental clinic visits.

Some programs have developed innovations in physically integrating dental providers into medical clinics and other Health Center departments. Sites have located a dentist or dental hygienist in the primary care and/or pediatrics clinics.

Health Center dental program staff also engage in community outreach and

education about efforts to integrate medical and dental in patient care by making presentations to community organizations to increase awareness of the importance of good oral health as a part of general health.

Characteristics that Facilitate Integration

Leadership Vision and Support

In the Health Centers studied, leadership is the key determinant of early adoption of medical-dental integration. The CEO/executive director provides long-term vision and guides the strategic direction of the Health Center and ensures that the same message is given out throughout the organization — that treating the patient as a whole is part of the mission and culture of the Health Center.

Progress in integrating oral health into the medical home is the result of a continuous process, with many changes and new concepts introduced along the way. When confronted with resistance to change from staff, especially the introduction of new patient populations not previously seen in the dental clinics, the approach is not to tell staff what to do, but rather to develop buy-in through explaining the why, constantly reinforcing that new ways of practicing can lead to better patient outcomes.

Dental Integration Into the Larger Organization

The integration of the dental department into Health Center management is not based on personal relationships — it is part of the organizational structure. The dental department is completely integrated into the administrative structure of the Health Center and is included in all operations team meetings and communications. The dental directors

have close working relationships with other departmental directors. The dental department participates in Health Center committees (quality improvement, clinic flow, etc.) and is present when planning and clinical policy or protocol decisions are made to advocate and give dental input and perspective.

Early-adopter Health Centers make patient-support staff, such as family-support workers, patient navigators, health coaches or perinatal outreach workers, directly available to dental clients. These staff members float in the center and are utilized as needed, including helping with dental, assisting with making appointments, engaging patients with motivational interviewing, setting goals and running classes. For example:

After completing a prophylaxis, the dental hygienist was discussing lowering caries risk through diet choices with a patient. The topic of soda consumption came up and the hygienist mentioned that reducing soda intake could lower caries risk as well as calorie intake for weight reduction.

The conversation continued with the patient expressing a desire to lose weight. The dental hygienist was able to go into the clinic hallway and flag down a health coach who was circulating in the medical clinic. The health coaches were available for dental providers and had previously assisted dental patients with smoking cessation. In this case, the health coach was able to see the patient right away in the health coach's office, and a conversation on setting weight reduction goals began.

Co-location of medical, dental and other services at the same site allows bidirectional “warm hand-offs” from any Health Center department to the dental clinic and vice versa. Co-location also encourages interdisciplinary communication. This convenience increases patient satisfaction with health care services and facilitates compliance with referrals.

Organizational Culture of Quality Improvement

Dental directors of early-adopter organizations tend to display an in-depth user's knowledge of the terminology and methodology of quality improvement. This culture permeates all levels of the Health Center and is part of how the dental program conducts its daily functions.

There is a focus on outcomes — using outcome measures to drive change, improving from a baseline and showing that these concepts can be used for all aspects of clinic operations.

Many adults with medical conditions who might benefit from dental treatment, especially periodontal care, do not have dental insurance.

As members of the Health Center management team, the dental directors view their efforts in the dental program with their own departmental measures, such as the percentage of diabetic or perinatal clients with a dental visit, as contributing to improvement in centerwide outcome measures such as controlled diabetic patients and low rates of adverse birth outcomes.

Barriers to Integration

Lack of access to oral health care is an obvious barrier to the development of medical-dental integration. Many Health Center medical sites do not have a co-located dental clinic, making physical integration and access more difficult. As mentioned previously, Health Centers as a system currently have capacity to

provide dental services to 23 percent of medical users. An additional barrier is the lack of dental insurance coverage. Studies have shown that nationwide, 43 percent of the population does not have any type of dental insurance coverage.¹⁴ Many adults with medical conditions who might benefit from dental treatment, especially periodontal care, do not have dental insurance. Currently, in the majority of states, Medicaid does not provide comprehensive dental care for adults,¹⁵ and Medicare only provides dental benefits for a very narrow scope of medical conditions.¹⁶

Electronic Health Record Issues

A lack of HIT infrastructure and lack of interoperability between the medical and dental HIT systems (when present) is a huge barrier to integration efforts. Of the Health Centers studied, only 23 percent of the respondents indicated that they practiced in an environment where the medical and dental HIT systems were interoperable. The vast majority of respondents either practiced in a Health Center where the electronic medical record (EMR) and electronic dental record (EDR) were not interoperable or one of the two systems was not implemented.

Although all the Health Centers studied have achieved a great deal, the programs with interoperable HIT systems are able to access much more data, both clinical and administrative, much faster than programs without interoperable systems, and are able to use this data for clinical decision making, referrals, follow-up, quality improvement and other functions that contribute to increased integration and better patient outcomes.

As an example, prescription writing can be a tremendous issue because without an integrated HIT system providers in one discipline may have no way of knowing if a patient has received a prescription in another Health Center

department. This can be important with clients who are chronic drug seekers or who are taking multiple medications.

Training Issues

In general, medical providers and patient-support staff are open to educational efforts about oral-systemic topics. Once the evidence base is presented, medical providers are willing to refer specific patient populations for dental treatment. Many organizations use the online *Smiles for Life* curriculum (smilesforlifeoralhealth.org) as a training tool.

Some early-adopter respondents mentioned resistance from some dental providers and staff to expanding services to include infant and perinatal populations. This could be due in part to a lack of training and familiarity serving these populations while in dental school and in previous clinical practice. Many organizations provide training for providers and staff to begin to feel comfortable treating these populations.

Oral Health Core Clinical Competencies for Nondental Primary Care Providers

In 2011, the Institute of Medicine (IOM) released the report: *Improving Access to Oral Health Care for Vulnerable and Underserved Populations*.¹⁷ Among the recommendations of the report were for the Healthcare Resources and Services Administration to develop a core set of oral health competencies for health care professionals to prepare them to:

- Recognize risk for oral disease through competent oral examinations.
- Provide basic oral health information.
- Integrate oral health information with diet and lifestyle counseling.
- Make and track referrals to oral health care professionals.

HRSA is currently funding the the Oral Health Core Clinical Competency

Pilot Project. The goal of the project is to adopt and implement oral health core clinical competencies for primary care providers using a sustainable-systems approach resulting in the integration of oral health and primary care through interprofessional collaborative practice.

Three Health Centers have been selected to participate in the pilot project. Each Health Center will be evaluated using a common set of measures that will track oral health services (e.g., oral health assessments, fluoride varnish applications, patient education) provided by primary care providers and support staff as well as referrals to the Health Center dental program. Changes in oral health knowledge and skills of primary care medical providers, as well as patient experience will be measured. The project evaluation will be shared with a national audience.

Discussion

As health care moves to improved patient and population health status as one of the primary indicators of system quality,¹⁸ it is possible to envision how increased medical-dental integration might positively impact health status. With the advent of accountable care organizations, the trend in health care is moving toward having payment mechanisms tied to improved patient and population health status.^{19,20} Organizations that determine that oral health services positively impact general health status for certain individuals and/or populations will develop HIT, systems and payment infrastructure to obtain these services. An example of this is the recent study that compared the medical costs of diabetic patients who received periodontal treatment versus those with no treatment over three years in a population of commercially insured patients. Periodontal treatment was associated with a significant decrease in hospital admissions, physician visits and

overall cost of medical care in diabetics. Savings averaged \$1,814 per patient in a single year independent of age and sex.²¹

Health Centers' early efforts at medical-dental integration have shown the necessary factors to make integration successful. Communication between disciplines and joint, transparent planning in an atmosphere of mutual respect will yield the best results. Organizational champions and leaders in both disciplines are critical, as is a commitment to quality improvement and lack of fear of collecting and using data to track improvement and drive change.

The Health Center experience has also highlighted the primary challenges to medical-dental collaboration whether in the private or public health setting, lack of parity in access to oral health care and HIT infrastructure. As long as multiple electronic medical and dental records systems exist without the ability to communicate between systems, true integration will not occur. Industry is not expected to voluntarily create bridges between systems or use a common language until there are proper economic incentives.

Another challenge is education and training. Both the medical and dental disciplines have generally been separated during their clinical training experiences. While this is changing to some extent with increased interdisciplinary efforts in medical and dental schools, the vast majority of existing primary care providers have had virtually no training in oral health. To address this, the IOM report also recommended that HRSA support oral health curriculum development and dissemination efforts for nondental health professional education programs. The majority of dental students have limited clinical experience with entire populations that could most benefit from interdisciplinary collaboration, such as pregnant women, very young children,

the frail elderly and individuals with diabetes, HIV and other special needs.

Conclusion

Because of the unique Health Center characteristic of having multiple health care disciplines under one roof, Health Centers have provided an environment to pilot and test how medical-dental integration might occur and what that looks like in practical, daily clinical practice.

More than 10 years ago, the *Surgeon General's Report on Oral Health* popularized the phrase "oral health is part of general health."²² The process of translating that phrase into clinical practice continues. As the relationship between oral health status and general health is proven by future

research, and health services research shows that expenditures for certain types of dental services actually lowers total health care expenditures, the incentive for increased medical dental integration will be established.

Those individuals who will be in dental practice 10 years from now should anticipate this new paradigm and begin to think about how their own dental practices will operate and fit into this evolving reality. ■

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Overview of the Anatomy of the Dental Benefit Marketplace and Emerging Concepts

Paul Manos, DDS

ABSTRACT Changing dental trends, increase in the number of stakeholders involved with dental benefits, health care reforms and the oral-systemic connection will all have a significant impact on dental practice. Additionally, the demand from many stakeholders for increased oversight of dental benefit utilization requires the need for development of acceptable metrics to track and report outcomes. The dental profession and benefit carriers will be faced with many challenges to balance these needs and expectations.

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Conflict of Interest

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There is no question that the dental benefits marketplace is changing. Several factors are leading that change: health care reform, technological advancements and rising costs. Along with benefits, though, other aspects of dental care are changing, and among them are the delivery models of dental care, the readily availability of information to patients, social media and the integration of dental health into overall health and wellness strategies. While much information could be written about all of these issues, and more, this discussion will focus more exclusively on the changes in the dental benefits industry, the need for ways of measuring health improvements and the impacts of the oral-systemic connection on dentistry and on the dental benefits industry.

Dental insurance of one sort or another has been around for a few decades. In that time, the basic elements of coverage have remained essentially steady,¹ with

the exception of some changes for new technology or science. While we routinely use the term “insurance” to describe dental benefits, dental coverage is not really true insurance in the same way that we view insurance for our cars, our homes or our lives. A dental benefit program is really more of a limited, defined, contractual funding assistance mechanism. Certainly, if someone falls down and breaks a tooth, therefore suffering an insured loss, dental coverage behaves like insurance to cover services related to that event. However, when a person has a missing tooth, and may or may not need replacement of that tooth, dental benefits usually only cover a portion of the cost of the services, and usually only up to a certain annual limit. The annual limits or maximums for dental insurance also have not changed much over the decades, though those limits have increased somewhat but not in equal proportions with the increases in dental fees and in dental insurance premiums.

So why have dental premiums increased so much? While the annual maximums have risen slightly over the years and the percentage of people who reach their maximums remains relatively low, the annual cost per person within those maximums has also steadily increased. Said differently, the total average annual cost per person continues to increase, partly because of increases in dental fees and partly because of higher costs of the type of service rendered due to improved technologies, which results in an increase in premium cost to the employer and to the insured. Remember, insurance is simply a pooling of the funds from the many to pay for the needs of the few.

Stakeholders and Oversight Controls

In the early days of dental insurance, the overall structure of the business relationship of dental benefits was much simpler than it is today. Early on, dental coverage was simply an arrangement or agreement between the insured and the insurance company, and was commonly called indemnity insurance. Soon, dentists became more involved in the process, perhaps as a gesture of good customer service, by accepting assignment of benefits and, by doing so, inserted themselves into the stakeholder pot. In addition, dentists became more engaged as stakeholders with the emergence of PPO networks and other types of dental provider arrangements. Over the course of time, particularly in light of the fact that dental benefits continue to be a valued offering by employers to their employees (about 97 percent of those covered by dental insurance receive that coverage through their employers²), the number of stakeholders has increased. These stakeholders include, but are not necessarily limited to, consumers and patients; employers, trusts and unions; brokers and insurance benefit consultants;

insurance carriers; dentists and dental staff; organized dentistry groups; research and teaching institutions; federal, state and local regulators; and dental supply companies. Each one of these stakeholders has a different viewpoint and a different set of needs, values, goals, etc., that they bring to the table, and the dental benefit world must take care to meet those expectations. Clearly, in a competitive marketplace, unmet expectations lead to lost business. Some of those expectations lead to the need for oversight controls by insurance companies, which places

It should come as no surprise that the two most common requests for new benefits have been related to cosmetic services and dental implants.

a greater burden on dentists and dental staff who accept dental insurance in their practices, which is the vast majority of all practices. In fact, between 50 percent and 60 percent of dental office revenue, on average, comes from dental insurance of one type or another.^{2,3} These oversight controls include, but are not limited to, professional review of treatment plans (pretreatment review, including predeterminations and preauthorizations), professional review of claims (post-treatment but prepayment review), utilization review (post-treatment and post-payment review or statistical analysis), onsite dental office reviews, focused utilization review of dental charts, credentialing reviews, background checks and the list goes on. Few of these insurance

company oversight controls are overly welcome in dental practice. However, the stakeholders who are paying for the coverage (employers and employees), those who are “selling” the coverage (brokers and benefit consultants), and those who are “protecting” the consumer from fraud or abuses of the system (regulators and other legal entities) are very interested in the level of oversight controls that are effectively managed by the insurance carrier.

Meeting the Needs and Desires of the Customer

With the incorporation of more stakeholders into the dental benefit process, and with the increase of competition in the dental benefit marketplace, employers have increased their involvement in the development of dental plan benefits. Typically, though not exclusively, the larger the employer, the more involved the employer may be in the determination process of what benefits will be available in a dental benefit offering. Due to dental benefit marketplace competition, when a large employer desires a specific service to be included in the benefit offering, most insurance carriers will meet that need. It should be noted that because insurance is a pooling of funds, additional benefits typically means higher premium cost. The more popular or more utilization of a benefit, the higher the cost necessary to add that benefit, which, of course, will be amortized over the entire group of covered employees and dependents.

In recent years, there has been an increase in the level of interest by various stakeholders in benefit carriers innovating new benefit ideas. These benefits have traditionally focused on services that are desirable to the end consumer, which is the patient. It should come as no surprise that the two most common requests for new benefits have been

related to cosmetic services and dental implants. However, more employers have recently been requesting incorporation of dental wellness initiatives into the dental benefit offerings. The challenge, of course, is that dental wellness is a relatively new concept, particularly in the context of disease management, health improvements, measurements of outcomes and incorporation of dental disease management into medical disease management.

Incorporation of Evidence Into the Benefit Structure

The history of dentistry is both interesting and extensive. However, as health care providers, dentists still struggle with the management of disease. In fact, most of what we do as dentists includes treatment of the affects of disease, not treatment of the disease itself. Look at caries, for example. Caries is the most prevalent chronic disease in children, five times more prevalent than asthma in children ages 5 to 17.⁴ Yet, when a child presents to us with caries, we proceed to amputate all or a portion of the affected tooth (we excavate the carious tooth structure or we extract the tooth) and restore the amputated tooth structure with a prosthetic replacement (e.g., a filling), without really treating the disease itself, that is, the bacterial infection that causes caries. Certainly, we advise the parent or the patient to brush better, floss more, eat fewer sweets, etc., etc. However, the disease, which is a chronic bacterial infection, is usually not addressed. The bacterial infection in the oral environment is not treated. Liken this scenario to tuberculosis — what if the physician removed the affected and infected lung tissue, but never treated the *Mycobacterium tuberculosis* that caused the infection? Clearly, dental research and dental treatment protocols need to be

addressed in terms of disease management. They are beginning to be addressed in such a way that will drastically change the way we practice dentistry and how that dental care is financed. Some significant future challenges will include addressing how we determine or assess disease risk, developing acceptable disease management protocols, determining how the financing mechanisms (e.g., insurance) pay for assessing risk and pay for disease management and educating the consuming public regarding the importance of these issues.

EBD may suggest that treatment plans should be based on individual patient needs, instead of standard treatment assumptions or protocols.

The American Dental Association defines evidence-based dentistry (EBD) as “... an approach to oral health care that requires the judicious integration of systematic assessments of clinically relevant scientific evidence, relating to the patient’s oral and medical condition and history, with the dentist’s clinical expertise and the patient’s treatment needs and preferences.”⁵ It is important to note that EBD involves more than just science and evidence gleaned from valid scientific research. EBD also involves the individual dentist’s expertise and the individual patient’s needs and preferences, since the research will result in findings and recommendations, but those findings and recommendations must be applied to the patient in a clinical setting. It makes no difference if evidence points toward a particular

scientific finding or recommendation if the dentist’s expertise cannot apply that finding or recommendation (though one would reasonably expect that if the individual dentist cannot apply a particular EBD standard, then that dentist would inform the patient accordingly and make an appropriate referral if the patient so desires). Likewise, a particular EBD finding or recommendation has no meaning if the patient refuses to follow the advice of the dentist (and, again, the dentist, as always, has a responsibility to evaluate the individual patient’s desires and determine the proper course of action, which may include, as an ultimate consequence, dismissal of the patient from the practice if the patient is uncooperative).

Of particular challenge is the one faced by dental benefit companies with the incorporation of EBD into dental benefit offerings. Obviously, if there is dental evidence that seems to suggest that a particular standard treatment regimen, such as a dentist’s recommendation that patients should receive a prophylaxis every six months, does not have the value that has traditionally been allotted to that treatment,⁶ then the common expectation is that a dental benefit carrier may be tempted to reduce that benefit level, such as reducing the level of prophylaxis benefit from once every six months to once every 12 months, or such other similar benefit reduction. However, the application of EBD in such a benefit offering may actually be administered so that some patients are benefited once every two, three or four months, while other patients may be benefited once every 12 or 18 months. The important factor is that EBD may suggest that treatment plans should be based on individual patient needs, instead of standard treatment assumptions or protocols. Clearly, those individual patient needs will need to be communicated to the insurance carrier in some way, such as

with diagnosis codes or narratives or with other diagnostic information. By doing so, with a service such as a prophylaxis, it should be clear that many things must change with the dental coding system, with the dental office claims administration and with the insurance carrier administration before such benefit enhancements can adequately occur. In addition, a significant industry challenge will be establishing acceptable protocols to determine who gets what benefits and at what frequencies, which is one reason dental benefit offerings have continued for so long to default to an equity of benefits for all insured persons instead of custom benefits based on individual need or individual risk.

Another, less complex EBD benefit offering change is reflected with fluoride varnishes. Evidence may suggest that fluoride varnish provides a significant anticaries benefit for patients with high caries risk.⁷ As a result, insurance carriers have added and/or increased benefits for fluoride varnishes. It is likely with EBD that some benefits may universally be increased and others may universally be decreased, while still others may be increased or decreased based on individual patients' needs.

An overriding factor with incorporation of EBD principles into dental benefits is that the ultimate decision-makers on benefits will be the purchasers of the benefits, which currently and overwhelmingly are employers and employees through employer-sponsored plans. Of course, health care reform will bring a new dimension to the dental care coverage arena and we have yet to see exactly how that change will affect the provision of dental benefits and the delivery of dental care. The bottom line is that if an insurance carrier cuts benefits, allegedly because of EBD, and such cuts are not acceptable to purchasers, then

the purchasers will simply move their business to another carrier who did not cut the benefits. Similarly, if a carrier is appropriately and judiciously applying EBD principles to dental benefits, thereby increasing benefits in some treatment areas or for some people based on clinical need, but purchasers do not understand those innovative and appropriate changes, then the purchasers will simply stay with the familiar and move to a carrier that provides the familiar, though possibly not as a beneficial, dental plan benefit offering. Clearly, a significant amount of consumer

In order to measure dental health improvements, some universally accepted metrics will need to be developed.

education needs to occur regarding the benefits of EBD, both in terms of proposed positive health outcomes and potential cost savings (or potential added costs, depending on the specific EBD findings).

Oversight and Reporting: Metrics

One of the areas currently being addressed in many research studies is how dental care relates to overall wellness or overall health, one of which will be addressed in this article shortly. However, before health and wellness can be addressed, there must be a way to measure the current state of health of a given patient or patient population, then a way to measure the result of whatever interventions that have been implemented to affect the health of the individual or population. The measurements must

then be able to be compared to a set of standards. The common term used for these types of measurements and standards is "metrics." As dentists are aware, there are very few metrics in dentistry. The lack of metrics may exist for a variety of reasons that will not be addressed here. Nevertheless, the trend in health care appears to be toward greater focus on wellness,⁸ which will require metrics. No doubt, dentistry will need to embrace the concept of being measured against standards due to the overwhelming evidence that oral health has an impact on overall health, as well as on the outcomes of specific disease processes. And, the profession of dentistry has a long road ahead because few quantitative standards exist today against which to measure.

What are metrics? One definition of a metric is "an attribute or a property of something that [one is] interested in measuring."⁹ For example, in medicine, we know the number of Caesarian births per 1,000 live births or the number of births among teenagers,¹⁰ or the heart disease death rate per 100,000 population by state.¹¹ However, as examples, we do not have an accepted statistical source for the number of teeth that develop irreversible pulpitis per 1,000 restored teeth, or the number of extracted teeth per 1,000 endodontically treated teeth or the percentage reduction of high caries risk patients as a result of XYZ dental intervention technique. Nor is there any consensus regarding what is acceptable and what is not acceptable. Clearly, in order to measure dental health improvements, some universally accepted metrics will need to be developed. Similarly, we currently do not know the percentage improvement of the number of patients with a specific medical condition after those patients received some sort of dental treatment intervention. This fact may be changing in the near future.

Oral-systemic Connection and the Relationship of Improved Oral Health With Improved Overall Health

Until recently, there has not been much focus on the relationship of dental health with overall health, possibly because, historically, few studies had been conducted to investigate that relationship. Recently, though, there has been evidence to support such a relationship. In fact, that evidence appears to be growing, and not a moment too soon, since evidence of increases in the incidence of chronic medical diseases is also on the rise.¹² There have been identified links between oral health and diabetes, cardiovascular disease, cerebral artery disease and stroke, pregnancy complications and low birth weight babies, rheumatoid arthritis and respiratory infections.^{4,13} And the list is growing. One must be cautioned, though, that there is currently no evidence of a causal relationship between oral health and specific medical conditions, unless, of course, the overall health issue is a septicemia or Ludwig's angina caused by a dental infection!

Because of its chronic, inflammatory nature, periodontitis has received the most attention with its suspected impact on certain medical disease processes. The general consensus is that the relationship of periodontitis with other disease processes is a result of the production of C-reactive proteins in chronically inflamed tissues, which are then distributed to other areas of the body via the bloodstream.¹⁴ Exceptions do, and will exist, to that mode of distribution, such as with respiratory infections. The oral-systemic connection with respiratory infections appears to be very simply through the aspiration of bacteria from an infected mouth directly into the lungs via the air passages.¹⁵

Diabetes is a medical condition that has become an epidemic in the United States. In fact, in the last 10 years, the number

of adults and children with diabetes has more than doubled to 25.8 million people.¹⁶ In addition, current information from the Centers for Disease Control and Prevention indicates that in 2009-2010, 45 percent of adults, ages 45-64, had moderate to severe periodontal disease.¹⁷ For many decades, dental practitioners have noted, somewhat anecdotally, that patients with diabetes tend to have a higher incidence of periodontitis than their nondiabetic counterparts and that the periodontitis in diabetic patients tends to be more severe and more difficult to

Because of its chronic, inflammatory nature, periodontitis has received the most attention with its suspected impact on certain medical disease processes.

control than periodontitis in nondiabetic patients. We did not know exactly why we observed these phenomena, but we knew that there appeared to be some sort of association, perhaps related to the common knowledge of the complication of delayed wound healing with diabetes. Recently, there appears to be evidence to support a relationship between diabetes and periodontitis to such a degree that periodontitis is now considered to be one of the six complications of diabetes.¹⁸ In addition, there may be some evidence that a healthy periodontium leads to better glycemic control in diabetic patients.¹⁹

Obviously, if a connection exists between diabetes and periodontitis, designing treatment protocols and dental and medical insurance coverage levels to address the connection may have value

in many ways. If dental health, and more specifically periodontal health, can have a favorable impact on medical outcomes and, in this case, diabetic outcomes, then it would make sense to investigate such a connection. With this goal in mind, United Concordia Dental (UCD), a national dental insurance company, implemented an initiative to investigate if there is a measurable relationship between dental treatment and diabetic outcomes.

To evaluate the relationship between dental care and diabetic outcomes, UCD, in coordination with the University of Pennsylvania, commissioned a retrospective, longitudinal study of claims data for 1.7 million insured people, who had both medical coverage and dental coverage, over the course of three years. Of the 1.7 million co-insureds, more than 91,000 were identified as having diabetes (via medical diagnosis data). Of the more than 91,000 diabetic patients, a little more than 61,000 were identified as having periodontitis (in the absence of dental diagnosis codes, the assumption was made that dental claims history of periodontal treatment equals the presence of periodontal disease). The patients were followed for three years, resulting in one group of patients who had incomplete periodontal therapy (the control group) and another group of patients who had periodontal treatment and at least an annual maintenance visit in each of the following two years (the treatment group). Both groups of patients displayed a relatively even distribution between males and females and the average age of the patients in each group was 48 years old.

Medical cost savings were evaluated in these two groups by looking at number of hospitalizations and number of physician office visits. Over the course of three years, the findings included a 33 percent reduction in hospitalizations in the treatment group compared to the

TABLE

Other Key Oral Health Study Findings

33% decrease in annual hospitalizations

13% decrease in annual doctor visits

Greater increases in the first year alone

Based on three years of study data.

control group and a 13 percent reduction in physician visits in the treatment group compared to the control group (TABLE). These reductions equated to an average annual medical cost savings of \$1,814 for the treatment group compared to the control group²⁰ (FIGURE 1).

Subsequent research of these two groups showed that additional potential savings exists with pharmaceutical costs. The data show that when the diabetic, periodontal patient complies with a periodontal treatment plan that includes periodontal maintenance and the patient received at least seven periodontal visits over the course of the three-year period, an additional average annual savings of \$1,477 in pharmaceutical cost per diabetic patient is achieved.²¹ Therefore, the total average annual medical savings for a diabetic patient in this research study, so far, can reach more than \$3,200 if the diabetic patient complies with dental treatment to treat and maintain a healthy periodontium. While the research focused on savings in medical costs, the results are being further explored to investigate additional concerns, such as absenteeism from work, which will have a direct affect on productivity.

The idea of medical savings due to targeted dental care may not be as appealing to some employers, and even some patients, as one might expect. One reason may be due to the fact that the concept of consumer-centric medical and dental benefits is new. Since the proliferation of health insurance, consumers have not been as intimately involved in the cost of their health care as they are today. In addition, savings in medical costs may or may not be readily

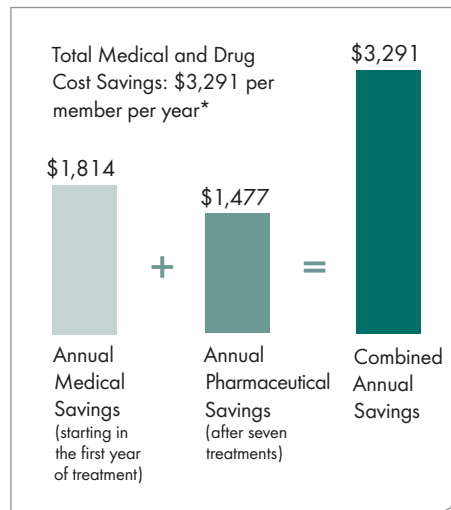


FIGURE 1. Annual medical and drug cost savings per member.*Three-year average of \$1,814 in savings from reduced hospital and office visits begins in the first year of periodontal treatment. Pharmacy savings realized annually after patient receives at least seven periodontal treatments and/or maintenance visits.

visible to the consumer, depending on the structure of the medical benefit or how the medical coverage is purchased. Therefore, the medical cost savings may not be as important to the consumer or to the employer as the concept of better employee productivity and less time lost from work, due to decreased physician visits and decreased hospitalizations. The consumer may be interested in not having to go to the physician or to the hospital as often, as well as simply feeling better. Additionally, the employee's manager may be more readily aware of an employee's lack of absenteeism and better production than being aware of a reduction in costs. While cost savings is important, good health and better quality of life are highly valued.

Further studies are currently being conducted by UCD using this bank of data to investigate the relationship of periodontitis with other chronic, inflammatory diseases in addition to preterm birth.

So, what can be done about these findings? Clearly, if patients can be educated regarding the importance of dental care, both preventive and

therapeutic, then they may be able to reap the benefits of lower medical costs and healthier lives. Most dentists would probably admit that they put forth a gallant effort to educate their patients, yet, for a variety of reasons, many of those patients do not comply. However, most dentists can only reach those people who access the dental office. Insurance carriers can reach anyone who is insured, whether the insured individual accesses the dental office or not. Therefore, in an effort to do just that, UCD determined that a logical next step with the data findings in the aforementioned study is to increase the level of benefits for periodontal treatment, presurgical, surgical and maintenance care, and to develop a targeted educational campaign on the importance of periodontal treatment and proper home care. The program is called UCWellness.²² This increase in benefits serves the purpose of greatly reducing the financial barrier to periodontal care, while the educational campaign can reach any patient with a given medical condition, whether or not that patient has actually seen the dentist. This type of program with disease-specific benefits and targeted education is new to the dental benefits arena. As real-time data is acquired, as opposed to retrospective data, time will tell whether this type of process will be able to change patient behavior and improve medical outcomes (and dental outcomes). By mining data, addressing access to periodontal services for patients with specific medical conditions, setting up educational campaigns for those patients and then evaluating outcomes (FIGURE 2), information can be evaluated to determine how receiving dental care affects medical outcomes prospectively. Of course, the ultimate end goal is to assist patients with making good decisions and, thereby, creating better outcomes for both dental health and overall health.

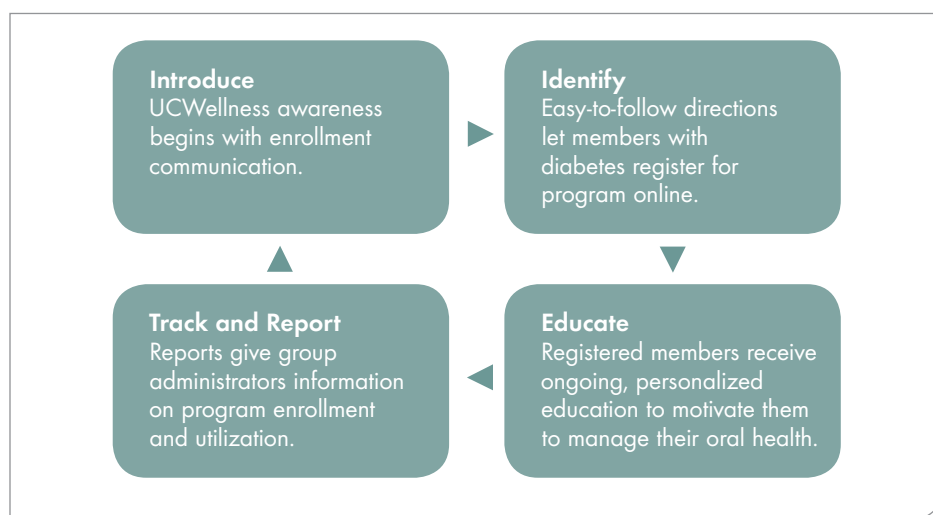


FIGURE 2. Regular dental care can not only improve overall health, but can reduce medical costs as well.

Conclusion

The primary end goal with the changes occurring in the dental benefit industry and in the dental research arena is improvement of oral health and overall health. Certainly an important factor in that goal is creating better access to care, which includes the affordability of dental care and the return on investment with the care delivered, i.e., whether one treatment modality may result in a better outcome than another treatment modality, preferably at a lower cost. Clearly, these types of outcomes require that all stakeholders work together to meet the primary end goal, so that the most beneficial dental coverage can be developed to meet the most need with the limited funds available to do so. In addition, to report on outcomes and improvements, the process of care and the outcomes must be measured. In order to measure the process and outcomes, accepted metrics must be developed. These statements are much easier said than done.

More evidence must be obtained through appropriately designed research studies to arrive at an acceptable bank of metrics. These studies take time to develop, conduct and, probably most critically, to fund. As we all know, funds are scarce. However, as more evidence emerges showing the links between oral health and overall health, more interested stakeholders will likely emerge to provide the funds for

the research. The dental profession and dental benefit carriers can then use this research to more appropriately manage the funds available to provide the best care and benefits possible with the funds available, with a goal of also providing fair and reasonable compensation to the dental professionals providing the care. ■

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Interprofessional Education Between Dentistry and Nursing: The NYU Experience

Judith Haber, APRN, PhD; Andrew I. Spielman, DMD, MS, PhD;
Mark Wolff, DDS, PhD; and Donna Shelley, MD, MPH

ABSTRACT In 2005, New York University Colleges of Dentistry and Nursing formed an organizational partnership to create a unique model of interprofessional education, research, service and practice. This paper describes the first eight years of experience, from the early reaction of the public to the partnership, to examples of success and past and current challenges.

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Historically, health education in the United States has been delivered in well-established silos. The medical, dental and nursing professions, to name a few of the health professions, prepare students to practice in their own disciplines. Yet patients come with health problems that cross the boundaries of those disciplines and the specialized health care focus unique to each profession. Professional practice silos have been documented to have a negative impact on the quality and safety of patient care delivery. To address this glaring error in education and practice, the Institute of Medicine (IOM) commissioned a report in 2001. One of the key elements of the report, *Crossing the Quality Chasm: A New Health System for the 21st Century*, was fostering interdisciplinary team building.¹ The IOM's 2003 follow-up report, *Health Professions Education: A Bridge to Quality*, proposed that to improve patient

outcomes through interprofessional (IP) practice, students in the health professions must be interprofessionally educated as “members of an interdisciplinary team.”² At about the same time, the U.S. surgeon general issued the *National Call to Action to Promote Oral Health* to address the gap in meeting the oral health care needs of the American public and to consider the relationship of oral health to overall health from a population health focus.³ As a follow-up to the surgeon general's report, the American Dental Education Association (ADEA) issued a report in 2003 in response to the crisis in oral health care and education.⁴ One of the recommendations of the ADEA report echoed that of the IOM report: “to develop and support new models of oral health care educational and delivery systems.”

The data provided by these seminal reports inspired a vision for Michael Alfano, DMD, and Terry Fulmer, PhD,

RN, FAAN, the leaders of the NYU College of Dentistry (NYUCD) and the then Division of Nursing, respectively, about the potential of two health professions, both committed to health promotion and primary care, to have a greater impact together on global health outcomes than either could individually. To actualize this vision, they proposed an organizational partnership, a school-within-a-school model, between the dental and nursing programs. The partnership provided an opportunity to develop novel IP education and practice models, as well as an IP research agenda that capitalized on the potential synergies of the research programs of each academic unit. In 2005, the NYU board of trustees approved the organizational relationship between the College of Dentistry and the now College of Nursing (NYUCN).

The initial reaction to this unusual alliance, primarily from some members of the larger dental community, dental alumni, faculty and students, was befuddlement and a question: Why? What did dentistry and nursing have in common? A study comparing the core competencies of dentistry, nursing and medicine demonstrated that there was more in common than one might assume. The findings revealed a surprisingly high, 38 percent, partial or total overlap between competencies for dentistry and nursing, and 25.4 percent overlap between competencies for dentistry and medicine.⁵ These data provided reinforcement for the wisdom of the dental-nursing venture. The leadership of both colleges immediately were engaged, given that they were both open-minded and curious about the potential “home runs” in education, practice and research that could be realized. The most obvious obstacle was the one-mile physical separation of the two colleges.

The wisdom of the dental-nursing

alliance was reinforced in 2011 when publication of two important IOM documents, *Advancing Oral Health in America*⁶ and *Improving Access to Oral Health Care for Vulnerable and Underserved Populations*,⁷ highlighted policy issues related to serious gaps in access to oral health services, the concomitant need to build oral health workforce capacity and the need to reduce oral health disparities. Almost simultaneously, another catalyst supporting our NYUCN/NYUCD interprofessional collaboration was publication of the *Core Competencies*

A study comparing the core competencies of dentistry, nursing and medicine demonstrated that there was more in common than one might assume.

for *Interprofessional Collaborative Practice*,⁸ the result of six professional organizations, including our dental and nursing education organizations, the ADEA and the American Association of Colleges of Nursing (AACN). The final national policy agenda to lend credibility to the importance of oral health as a leading health topic was the 2010 launch of Healthy People 2020, which identified oral health promotion as the eighth leading health topic.⁹

The administration of the two colleges initiated several key steps and helped to facilitate the transition to an IP way of thinking. These included:

- The creation of a joint administrative leadership team, the Executive Management Council (EMC), a group that included the deans, associate deans, directors and key individuals

from both colleges. The EMC meets monthly to discuss issues of concern and continues to forge a strategic and administrative alliance.

- The creation of a nursing faculty practice (NFP), a nurse practitioner (NP)-managed primary care practice located on the lobby level of the College of Dentistry, directly across from the dental admitting center. This strategic location was designed to operationalize the interprofessional vision of “one-stop oral-systemic health shopping” for dental patients and potential patients from the community. The NP-managed faculty practice turned out to be not only a key resource for curricular initiatives, but it became the cornerstone and the most obvious physical evidence of the dental-nursing partnership.
- The creation of an office of IP education with a new full-time faculty line for its director. The first director, a medical doctor with a master’s of public health, was appointed to lead development, implementation and evaluation of an IP agenda in education and practice, identify potential IP research synergies between the two schools and evaluate new practice models. Five years later, many of the initiatives have been integrated into the nursing and dental curricula as “best practices.” However, overall interprofessional organizational leadership from both colleges is essential to keep the “big opportunities” flowing in partnership with unit- or project-specific champions.
- The joint development of a strategic plan identifying two important strategic pillars — leveraging partnership among dentistry, nursing and dental hygiene and developing men and women of science — as top priorities. The strategic plan provided the catalyst for leveraging IP oral-systemic health

TABLE

Overview of Interprofessional Collaborations Between Nursing and Dentistry

Interprofessional clinical education initiatives	9
Publications	26
Funded joint grants	7
Interprofessional service learning programs (e.g., health fairs, screenings)	25
Joint global outreach programs	3
Interprofessional presentations	12
Number of nursing and dental faculty teaching in each other's program	15
Number of nursing and dental courses that benefited from cross teaching	20
Interprofessional oral-systemic health practice model	1

initiatives. Over the last five years, the two colleges have fulfilled, and in some cases surpassed, the majority of the stated goals and outcomes of this strategic plan. A new strategic initiative is planned for the next five years.

- Provision of scholarship opportunities for organization leaders and faculty. Our dental-nursing partnership has provided a unique platform for the nursing faculty to play a national leadership role representing the nursing profession on the National Interprofessional Initiative on Oral Health (NIIOH), a national effort to increase oral health in primary care education and practice, jointly funded by DentaQuest, Washington Dental Service and Connecticut Health Foundations. The College of Nursing has been funded by NIIOH to lead a national nursing oral health agenda through the Oral Health Nursing Education and Practice (OHNEP) program featuring faculty development, curriculum integration and best clinical practices in oral-systemic health. OHNEP leaders are prominent nationally in nursing and interprofessional circles, addressing the opportunity for the nursing profession to be a “new partner in prevention.”

Innovative IP Oral-systemic Initiatives

The interprofessional educational programs that we developed at NYU were not meant to consist of the co-location of

dental and nurse practitioner students in a large lecture hall in core courses such as pathophysiology or pharmacology. Such models exist currently in a handful of dental and medical schools and health centers across the country as part of basic science education. Such arrangements make good financial sense, but their IP educational value is questionable. At NYU Colleges of Dentistry and Nursing, such interactions usually are not possible because of spatial and temporal constraints on student availability. Our unique focus was clinical education and practice experiences. A summary of interprofessional collaborative activities is shown in the **TABLE** and selected IP clinical education, faculty development and research exemplars are highlighted below.

Nursing Faculty Practice

The Nursing Faculty Practice (NFP) is an adult primary care practice staffed by nurse practitioners and located on site at the College of Dentistry. It operates as a New York State Article 28 diagnostic and treatment center and provides a full scope of primary care services addressing not only patient-centered, disease-based clinical management but also health promotion and disease prevention. The NYU College of Dentistry is one of the largest oral health care facilities in the U.S., with more than 500 dental chairs, nearly 30,000 new patients and 380,000 patient visits a year. Findings from a needs

assessment indicated that approximately 24 percent of dental patients seeking oral health care at NYUCD did not have or did not access a usual source of primary care.¹⁰

This gap in access to primary care positioned NYUCD and NYUCN to use the co-location of the NFP and the dental clinics as an innovative IP clinical learning environment. A reciprocal referral and consultation pattern between the NFP and faculty and students in the dental clinics reflects our aim of expanding the health care lens through which primary care providers, dentists and nurse practitioners view the delivery of effective health care across the life span. Seamless oral-systemic health care taking place under one roof should increase access, decrease barriers to comprehensive health care and improve clinical outcomes. Our aim was to break down the silos of our respective disciplines and prepare the next generation of nurse practitioners and dentists committed to addressing both the oral and systemic health needs of patients. We wanted to provide them with a series of IP clinical experiences so that when they graduated they would be “IP-practice ready” to operationalize a lifelong interprofessional practice paradigm. Electronic health record data collected by the NFP between 2008 and 2012 demonstrate that more than 500 primary care referrals that resulted in actual appointments/visits had been made by NYUCD faculty and students to the NFP — more than 150 referrals had been made on behalf of NFP primary care patients to the NYUCD dental clinics.

Collaborative Nursing/Dental Clinical Experience

An interprofessional clinical experience in the dental admitting center was designed for nurse practitioner and dental students. Nurse practitioner students had their primary care clinical

experience at the NFP and dental students rotated through the adult dental admitting center. They were paired with a dental and nursing faculty member twice a week for a half day to promote increased clarity about the roles and responsibilities of each profession, interprofessional communication, team building and patient-centered care through collaboration on the assessment and treatment planning for a dental patient. The aim of the experience for dental students was to demonstrate a comprehensive approach to assessing patient general health needs, including the need for collaboration and referral (primary care, dietary counseling, social work, etc.). The aim for nurse practitioner students was to demonstrate competence in completing an oral health assessment and physical exam and, if need be, referral for dental care. Each student taught the other the relevant skills of his or her discipline. Together, with faculty guidance, they collaborated on developing an interprofessional treatment plan by establishing the oral and systemic association in the context of assessment, diagnosis and treatment planning to address the patient's oral and overall health needs and appropriate triage.

This clinical model was initiated to broaden dental students' knowledge about managing patients with complex medical problems, especially those who are co-morbid with their oral health problems so that they consider patient needs through a more holistic lens. At the same time, exposure of dental students to nurse practitioner faculty who worked at the NFP provided a reminder to refer patients to the NFP for primary care and consult with the nurse practitioners when questions or issues about the dental patient's overall health arose and sometimes provided barriers to implementing dental care

unless resolved. The physical presence of a primary care practice during dental clinical hours provided an opportunity to extend targeted education to dental students.

Nursing/Dental Chairside Consultation Project

The Chairside Consultation Project took place in one of the general dental clinics on a weekly basis. The nurse practitioner faculty member collaborated with the dental group practice director to identify student competency development in relation to integrating the overall

Nurse practitioner students had their primary care clinical experience at the NFP and dental students rotated through the adult dental admitting center.

health needs of dental patients with their extant oral health problem(s). The nurse practitioner faculty member conducted patient chart reviews with dental students prior to commencing the dental patient encounter. Ad hoc consulting opportunities for dental students were offered while they were providing dental care to their regular patients. The aim of the project was to teach dental students about the need for comprehensive patient assessment, collaboration and referrals for systemic health risk factors and existing problems. Commonly identified general health problems were elevated blood pressure, risk for diabetes, weight, smoking and no primary care provider. Such dental patients were potential referrals to the NFP and

provided dental students with a holistic view of patient. This was a resource-intensive project that was not scalable across 14 group practice director groups with the nurse practitioner resources available, given the need to staff the NFP for delivery of primary care services.¹⁰

IP Integrated Basic Science-clinical Case Presentation Seminars

The aim of the IP integrated basic science-clinical case presentation seminars was to provide vertically integrated basic science and clinical education to students in all four years of the dental program and instill IP collaboration between dentistry, nursing and hygiene. The seminars were implemented incrementally. First, small groups of D4 and D3 students were asked to discuss clinical cases, with D4 students identifying the case and D3 students finding the best evidence in the literature by formulating a PICO question. In 2010, we added small groups of hygiene, D2 and D1 students and a basic science mentor to coordinate their contribution with a five-minute presentation (for each representative student) on a narrow aspect of the pathology or physiology, respectively, of the same patient. The result was a vertically integrated case presentation with all four years present (in small groups) and a representative of each year presenting his or her prepared contribution during a 50-minute well-polished, interprofessional presentation. In 2011, a nurse practitioner student and a dental hygiene student joined the dental team and collaborated on preparing the case presentation. Their role was to enhance the IP presentation and discussion of the oral health promotion (hygiene) and the general health (nurse practitioner) management of the patient.

How can all these students be in the same room at the same time? The seminars were held at 7:00 a.m. with frequent starts at 6:45 a.m. The outcome of these

integrated seminars was overwhelming support from each student and from the 28 faculty mentors. These mentors included 14 group practice directors and 14 basic science mentors, many of whom were dually trained clinicians, with or without advanced science degrees or straight PhDs. All faculty were from the dental college. Nursing and hygiene faculty join nurse practitioner and hygiene students on these early-morning seminars. Dental, nurse practitioner and hygiene students and faculty gained a deeper understanding and respect for the knowledge base and scope of practice of each participating profession, learning to communicate more effectively and function as a team.

Smoking Cessation Program

The Smoking Cessation Program was a systemwide initiative that addressed an IP population health issue that aligns with the Healthy People 2020 goals.⁹ Data revealed that approximately 25 percent of NYUCD dental patients smoked cigarettes, a smoking prevalence that is 67 percent higher than the general New York City population (15.8 percent) and 19 percent higher than the general U.S. population.^{11,12} The overall aim of the initiative was to inculcate a population-focused health care role for dental and nurse practitioner faculty and their students. A key component of the initiative was a study that implemented an intervention to improve the quality of tobacco use treatment in the 14 general dentistry clinics and evaluate provider adherence to tobacco use treatment guidelines. Faculty development and student training on smoking cessation and guideline adherence, chart prompts and free nicotine replacement therapy (NRT) were major features of the intervention.^{11,12}

Dental students used the five A's — ask, assess, advise, assist and arrange — to identify dental patients who smoked and encouraged them to stop. They were able

to offer up to six weeks of NRT and referred the patients to smoking cessation support services, including those provided at the NFP and through local online services. As a routine step, dental students accompanied these patients to the NFP to observe the follow-up care, including the prescribing of NRT and counseling sessions offered by the NFP faculty nurse practitioners and nurse practitioner students as a health promotion component of the NFP primary care services. The data reveal that from 2008 to 2011, 345 referrals were made for smoking cessation counseling and NRT;

Dental students used the five A's — ask, assess, advise, assist and arrange — to identify dental patients who smoked and encouraged them to stop.

245 individuals received smoking cessation counseling and NRT prescriptions. Findings indicate that faculty and students demonstrated increased adoption and implementation of tobacco use treatment guidelines in a dental public health setting that treats the most vulnerable populations. Based on the study findings and previous research in dental settings, by providing brief advice and NRT, an estimated quit rate of 10-18 percent can be estimated. This is consistent with national data.^{11,12}

IP Pediatric Oral Health Initiatives

Collaboration between faculty and students in the NYUCN pediatric nurse practitioner program and the pediatric dental program, including dental students and pediatric dental residents, was designed to promote an interprofessional

health promotion collaboration focused on the oral and overall health needs of children. These are effective clinical education experiences that promote clinical competency development, IP communication team building and values clarification about the importance of oral health promotion. Dental, dental hygiene and pediatric nurse practitioner faculty designed a four-week rotation for pediatric nurse practitioner and dental students to participate in community outreach at Head Start and other preschool programs. The pediatric nurse practitioner students who take a health promotion course, learn from the dental students and faculty about and demonstrate competence in the pediatric oral health assessment, exam and how to provide anticipatory guidance. The D3 dental students learn from the pediatric nurse practitioner students about behavioral management of children, child safety, oral trauma risk reduction and management of primary care health problems (e.g., asthma or Type I diabetes) and their impact on oral health.

When the pediatric nurse practitioner students take their diagnosis and management courses, they have a second pediatric dental rotation, this time in the pediatric dental clinic with the pediatric dental residents. Guided by faculty from both programs, the pediatric nurse practitioner students and pediatric dental residents collaborate on assessing, diagnosing and developing a treatment plan for a complex pediatric patient with special needs (e.g., autism, seizure disorder, cerebral palsy, cancer, etc.). The pediatric nurse practitioner and pediatric dental resident team lead a collaborative case conference each semester to which faculty and students are invited. Since 2007, 115 pediatric nurse practitioners, 20 family nurse practitioners, 840 dental students and 120 pediatric dental residents have taken part in this IP pediatric oral health experience.^{13,14}

Service Learning Initiatives

As a “private university in the public service,” faculty and students at NYU place a high value on service learning. At NYUCN and NYUCD, service-learning activities have a significant interprofessional component where we capitalize on the unique partnership of the two colleges. Each college has its own mobile health van, which serves their respective constituencies. However, we commit to interprofessional opportunities where the vans visit the same elementary school to offer dental screenings to the kindergarten and first grade children while the nursing van conducts a teddy bear clinic, exposing other children at the school to the importance of having and visiting a primary care provider. The dental van and nursing van staff arrange twice-yearly visits to the international high schools that the nursing van serves as a primary care safety net. The adolescents attending these schools are in the U.S. for four years or less. Many of them have never had dental care. Because they are Medicaid eligible, they can be screened on the dental van and referred to the dental school for any treatment they may need. Health fairs provide another opportunity for interprofessional collaboration where oral health and primary care screenings and health literacy programs are offered.

At a recent health fair for our NYUCN HRSA-funded elder care program, we had an event that included our adult-gerontology primary care nurse practitioner, dental hygiene and dental students and faculty. While the dental and dental hygiene students conducted the oral health screenings, the nurse practitioner students implemented the oral health literacy component by offering the health literacy equivalent of “speed dating.” Every six minutes the older adults moved to one of six tables where the students had a different oral health literacy topic loaded

on their laptops that they shared with a group of four to eight attendees. Examples included diabetes and oral health, good dentures promote good nutrition and accessing affordable dental care. An annual ABC health screening, held at NYUCD since 2005, has become an interprofessional event with a wide array of oral health screenings offered, including blood pressure, diabetes and cholesterol screenings as well as BMI, weight and nutrition counseling. Nurse practitioner, nursing, hygiene and dental students, all of whom are supervised by the nurse

Health fairs provide another opportunity for interprofessional collaboration where oral health and primary care screenings and health literacy programs are offered.

practitioner faculty, often collaboratively implement these primary care services. In the past six years, we have collaboratively screened approximately 10,000 community members from the tristate area.

Summer Research Experience

The Summer Research Experience is a vibrant eight-week, full-time NYUCD program designed to introduce approximately 140 dental, dental hygiene and nurse practitioner students to research and inspire them to pursue research careers and/or value research as a component of their clinical or academic careers. Students attend IP research seminars presented by faculty research experts from both colleges. A faculty member whose research study and team the student joins

for the eight weeks mentors each student. Some dental students have the option of designing their own yearlong research project. Sharing the same strategic priority to develop men and women of science, it seemed like a perfect plan for NYUCN to join the Summer Research Experience. It has been a very rewarding collaboration with students from each college having the opportunity to work with faculty from either college, most of whom are extramurally funded scientists, depending on the student research interest and faculty availability. The Summer Research Experience culminates with a professional poster show featuring 120 to 150 posters each year, presented by the IP collaborating research teams on studies ranging from bench science to translation science. Some students have continued to work with their faculty mentors as research assistants and for independent study. They have submitted abstracts for student poster conference presentations, won poster awards and have been co-authors on faculty publications. The Summer Research Experience provides tangible evidence of the effectiveness of the NYUCD/NYUCN partnership in developing men and women of science.

Faculty Development: The EBP Academy

Interprofessional faculty initiatives related to evidence-based practice (EBP) provided an opportunity to actualize our strategic priority — developing men and women of science. Developing faculty as sophisticated research consumers was the major aim of this initiative. It provided a foundation for development of clinical scholarship initiatives for faculty whose primary aim was education and practice. The aim of the EBP initiative was to develop a critical mass of faculty EBP experts who would become EBP curriculum champions.

The EBP Academy, funded by the NYUCD/NYUCN Office of Professional Development, sponsored semiannual faculty development workshops at the introductory, intermediate and advanced levels for 300 dental and 100 nursing faculty members over a three-year period. Faculty from McMaster University in Hamilton, Ontario, taught the workshops until a critical mass of faculty were developed to lead our own workshops. An EBP steering committee co-led by NYUCN and NYUCD faculty provided the leadership for developing, implementing and evaluating the offerings.

The steering committee also sponsored an evidence-based decision making club that met monthly to critically appraise research studies and guidelines of mutual interest related to the oral-systemic connection. Faculty experts also conducted local EBP development programs for faculty at both colleges and provided individual and group consultation to faculty about integration of EBP in the nursing and dental curricula. Today, EBP is a major curriculum thread at both NYUCD and NYUCN. NYUCN has research courses at the baccalaureate, master's and clinical doctoral level that focus on developing increasingly sophisticated research consumers who lead evidence-based initiatives that result in systems-level change. NYUCD is now the North American Cochrane Center for Systematic Review Training in Oral Health and, currently, we have three IP systematic review teams from both colleges collaborating on preparing systematic reviews on Cochrane-approved oral health topics.

Discussion

The unique organizational partnership of the NYU Colleges of Dentistry and Nursing provided an opportunity for two health professions to capitalize on IP

initiatives when the importance of this concept was just emerging.^{1,2} Many of the successful exemplars presented in this article represented innovations that were “low-hanging fruit.” Despite being successful, there were, and continue to be, challenges in maximizing our potential. We believe that these challenges, as well as the lessons learned, apply not only to NYU but also to other health science institutions who contemplate undertaking such IP health initiatives.

Engaging faculty champions who are formal or informal leaders is essential to supporting an IP culture change and promoting grassroots change.

Challenges

Cultural dissonance. The degree to which there was cultural dissonance was significant. Faculty and students from both colleges had a dearth of knowledge about the education, scholarship and scope of practice of each other's profession. Clarity about the roles and responsibilities of each profession was minimal and much of what was thought to be true was based on stereotypes rather than accurate data. For example, it remains an ongoing challenge to clarify the scope of practice of nurse practitioners to the dental community, especially new students who have not had any exposure to nurse practitioners. Similarly, it has been a challenge to educate nurse practitioner students about the health promotion role of the dental profession

and the potential for collaboration with regard to the oral-systemic connection.

Faculty development. Creating venues for IP faculty development so that faculty from different disciplines have opportunities to communicate about their respective role and responsibilities that from a long-term perspective, ultimately increases respect and trust about each profession, greater commitment to team building and advances contributions to patient-centered care.

Reluctance from faculty to move out of their academic “comfort zone.” When faculty are faced with new projects that require them to commit to new and potentially disruptive, “uncomfortable” innovations, outside of their comfort zone, the first reaction may be “Why?” There has to be a very firm belief, commitment and messaging on the part of the organization's leadership about the value of the IP initiatives. Faculty change-champions are often hard to identify, given current responsibilities or administrative duties. Curriculum integration that features oral-systemic health using an IP framework is an important factor in maintaining momentum and faculty have to have both the knowledge base and commitment to continue advancing the IP strategic agenda.

Sustainability. Financial sustainability must be considered and factored into a cost-benefit analysis across academic units. The potential for specific IP initiatives to be revenue generating is an advantage. Other initiatives must be supported and built into the budget. For example, the NFP is a revenue-generating primary care practice. However, its academic mission and clinical placement for nurse practitioner and dental students, as well as credentialing/reimbursement challenges as a nurse managed center, make institutional and grant support an ongoing need. Sustainability is also

a function of the degree to which the IP initiatives become integrated in the curriculum and core competencies and become a set of IP best practices.

Evaluation. Evaluating the impact of the interprofessional innovation is a challenge. There is a dearth of valid and reliable IP measurement instruments. We have used a variety of evaluation strategies ranging from qualitative debriefing sessions, to tracking volume of participants, to pre and post testing of perceived IP change, to electronic health record clinical documentation of interprofessional oral-systemic health competencies and best practices. Establishing and evaluating interprofessional oral-systemic health community-based demonstration projects is recommended to test the clinical and cost-effectiveness of the model. A future challenge will be the evaluation of graduates to see if IP oral-systemic practice patterns continue to be evident in the professional practice environment.

Lessons Learned

Leadership support. It is imperative for there to be support from the deans, associate deans and assistant deans of the academic units involved in any IP collaboration. Embedding IP and oral-systemic health in our strategic plan was very important and created messaging about the value placed on the IP initiative as well as committed resources to support IP projects.

Identifying faculty champions. Engaging faculty champions who are formal or informal leaders is essential to supporting an IP culture change and promoting grassroots change.

Support interprofessional oral-systemic scholarship. Identify the low-hanging fruit that will create early “wins” that will provide positive reinforcement. Create opportunities for promoting

research synergies and clinical scholarship including internal and external funding mechanisms for projects and studies. Support dissemination of findings in publications and presentations, and appointments to local, state and national committees. Recognize faculty IP innovations and outcomes with support for internal and external awards.

Sustainability over time. IP education must be more than the collaboration of two institutional leaders. It must survive the departure of either leader. At NYU such a leadership change was put to test when first Dr. Alfano was promoted and subsequently Dr. Fulmer left for another deanship. Luckily, the commitments on both sides existed to sustain the momentum. First, the interim deanships of Richard R. Vogel, DMD, and Judith Haber, APRN, PhD, and subsequent selection of Charles Bertolami, DDS, DMedSc, and Eileen Sullivan-Marx, PhD, RN, FAAN, at the Colleges of Dentistry and Nursing, respectively, were firm believers in the strategic direction both colleges have forged together.

In conclusion, willing institutions should undertake IP education not because it is fashionable or it is imposed by an administration or an outside accrediting agency but because the faculty in these institutions truly feels that the outcome of such education will benefit the public with more seamless and improved population health that improves access and decreases health disparities. ■

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CHINO (GP) - Modern designed office w/ 4 eq ops, 1 plmbd and w/ over 34 yrs of gdwll Dentrux software. New-8 yrs old eq. ID #4427.
FONTANA (PEDO) State of the Art practice located in 1 story multi use bldg with 2 eq ops / 3 chair in open bay. 85% Denti-calID #4301.
PALM DESERT (GP) - Well established practice w/ 5 eq ops in 1 story bldg w/ ample parking & excellent signage. Net \$119K. ID#4331.
PALM SPRINGS - Leasehold & Equip Only! Practice located on a busy street w/ 4 eq ops in a 2,000 sq ft office. ID #4387.
RANCHO MIRAGE - Leasehold Improvements Only! Nicely decorated office w/ 4 plmbd not eq ops. Excellent opportunity. ID #4431.

SAN DIEGO COUNTY

CHULA VISTA (GP) - Located in downtown. Store front. Consists of 4 eq ops 1 plmbd not eq. Some Cap. Net \$152K. # 4279.
OCEANSIDE - Leasehold & Some Equipment Only! Beautiful office in a single shopping center w/ 5 not eq ops in a 1,500 sqft ste. #4363

VENTURA & SANTA BARBARA COUNTY

SANTA BARBARA (GP) - Well established practice w/ 3 eq ops in a 1,100 sqft ste. 100% Cash . Net \$215K. Condo for sale. ID # 4393.

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Changing to a Different Practice Model

Michael Perry, DDS

A previous Practice Support column discussed four different business models of private practice. These were based on the percentage of patient care in the practice provided through contracted dental benefits. The models were in numerical order based upon their prevalence in the California marketplace.

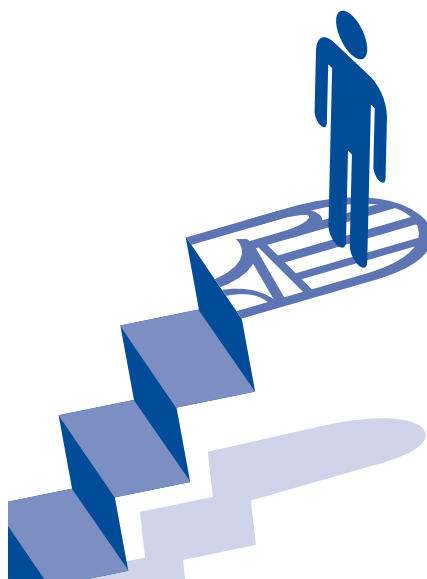
The purpose of this article is to present a more detailed description of each model.

Model 1

A model 1 practice has approximately one-third of the billable services performed on patients with a PPO form of dental benefits that the doctor is directly contracted with.

There is no known historical information, but it is very likely that the vast majority of private practices in California in 1980 were model 1. Most of these practices only contracted with Delta Dental Premier. The lower fee Delta PPO that Delta Dental of California sells today was either a very small segment of the dental benefits market or it didn't exist at all. Many model 1 doctors utilized their Delta Premier fee schedule as their regular (UCR) fee schedule.

Overhead costs among model 1 practices vary, but most are close to certain norms, particularly in variable cost categories (staff, lab and supplies). Solo model 1 practices with one full-time hygienist have staff costs of approximately 27 percent to 31 percent of practice income. Lab costs for practices not using in-office CAD/CAM are approximately 6 percent to 11 percent of income. Professional supplies and office supplies are approximately 4 to 6 percent and 1 to 2 percent respectively. In a model 1 practice, for every \$100,000 in annual



income, annual variable costs would often range approximately between \$38,000 and \$50,000. Fixed overhead would be in addition to variable overhead.

Many of today's model 1 practices still have Delta Premier as their only dental benefits contract. The dental benefits market, however, is very different from the one that existed in 1980. Recent statistics show that only 17 percent of Delta Dental of California's sales are of their Premier plan. That percentage is all plan renewals. They have not sold a new Premier plan in more than three years. The remaining 83 percent of its sales are Delta PPO and Delta Care (HMO).

Some contracted Delta Premier doctors who are long established are authorized by Delta Dental of California to charge Premier rates on some Delta PPO plans. This "grandfather clause" has given a shrinking number of model 1 doctors the ability to still utilize traditional business strategies while operating in today's changing marketplace. The uncertain future of the grandfather clause combined with an impending Delta Dental of California Premier fee cut makes the viability of these traditional strategies questionable.

Model 2

A model 2 practice has approximately two-thirds of the billable services performed on patients with a PPO form of dental benefits that the doctor is directly contracted with.

As with model 1, overhead costs among model 2 practices vary, but most are close to certain norms, particularly in variable cost categories (staff, lab and supplies). Solo practices with one full-time hygienist have staff costs of approximately 30 percent to 35 percent of practice income. Lab costs for practices not using in-office CAD/CAM are approximately 8 percent to 12 percent of income. Professional supplies and office supplies are approximately 5 to 8 percent and 2 to 3 percent respectively. In a model 2 practice, for every \$100,000 of annual income, annual variable costs would often range between approximately \$43,000 and \$58,000. Fixed overhead would be in addition to variable overhead.

Most model 2 practices contract with multiple PPO plans. Many of these practices contract with Delta Premier and Delta PPO. Some contract with other dental benefit companies as well. Those that contract with Delta PPO are not utilizing the grandfather clause. Because the number of patients with Delta Premier plans is relatively small, the predicted Delta Premier fee cut will have a much smaller effect than with practices utilizing the grandfather clause.

Model 3

A model 3 practice has approximately three-quarters or more of the billable services performed on patients with PPO and/or HMO forms of dental benefits that the doctor is directly contracted with.

Variable overhead percentages for

model 3 vary more widely than with model 1 or model 2. Solo model 3 practices with one full-time hygienist have staff costs of approximately 33 percent to 40 percent of practice income. Lab costs for practices not using in-office CAD/CAM are approximately 10 percent to 15 percent of income. Professional supplies and office supplies are approximately 6 to 10 percent and 2 to 3 percent respectively. In a model 3 practice, for every \$100,000 of annual income, annual variable costs would often range between approximately

\$51,000 and \$68,000. Fixed overhead would be in addition to variable overhead.

Most of the dental service organizations (DSO), sometimes called “large group practices,” are model 3. It is likely, however, that a significant number of solo and smaller group practices are also model 3. It is also likely that the great majority of model 3 practices are contracted with Delta PPO and are therefore not utilizing the grandfather clause. A cut in Delta Premier fees would have little effect on their profitability.

Model 4

A model 4 practice has no dental benefits contracts. All relationships with third-party benefits are on an “indemnity” basis.

As with the other models, overhead costs among model 4 practices vary, but variable costs are generally the lowest of the four models. Solo practices with one full-time hygienist have staff costs of approximately 22 to 25 percent of practice income. Lab costs for practices not using in-office CAD/CAM are approximately 6 percent to 11 percent of income. Professional supplies and office supplies are approximately 4 to 6 percent and 1 to 2 percent respectively. In a model 4 practice, for every \$100,000 of annual income, annual variable costs would often range between approximately \$33,000 and \$44,000. Fixed overhead would be in addition to variable overhead.

Model 4 practices are sometimes called “pure fee-for-service” or “insurance independent.” It is interesting to consider that prior to 1955 all California private practices were model 4, as dental benefits did not exist. In the current marketplace, model 4 practices are the least prevalent of the four models. ■

Michael Perry, DDS, is a former member of the California Dental Association Council on Membership and the Dental Benefits Research Task Force. He is also the chair of the CDA Practice Support Center Task Force. Dr. Perry is a practicing general dentist in Santa Rosa, Calif., and a dental business consultant.

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Compromised Health Warrants Medical Clearance

TDIC Risk Management Staff

Dental offices routinely send medical clearance forms to physicians before beginning treatment on medically compromised patients, and The Dentists Insurance Company receives a number of questions on its Advice Line about this practice.

When it comes to medical clearance, the big issue is whether dental treatment could substantially affect a patient's physical condition or the reverse, whether a physical condition could affect dental care, said Steven Barrabee, a San Francisco-area attorney working with TDIC who specializes in professional liability and business law. "It's a judgment call dentists must make, and it's best to err on the side of seeking the medical guidance of a patient's health care provider."

To understand their patients' medical conditions, dentists must ensure each patient's health history is detailed and current. This crucial step alerts dentists to diseases, disorders, allergies and medications that could affect dental treatment. "Know all of the medications a patient is taking," Barrabee said. "This is essential to avoiding adverse interactions." He said patients with complicated medical conditions such as cancer may not even be sure of all the medications they are taking, but he advised dentists to seek clarification. "I know it's difficult because doctors are busy, but it's incumbent upon dentists to ensure their treatment will not adversely affect the patient."

Barrabee also advised paying special attention to the American Heart Association's updated guidelines for antibiotic prophylaxis and to patients taking bisphosphonates for treatment of osteoporosis and other bone

diseases. "There can be huge issues with medications, and I have seen a number of cases related to this," he said.

When requesting medical clearance from a patient's physician, TDIC recommends that dentists describe the dental treatment plan and include all prescription and over-the-counter medications that could be used during treatment. Also, indicate why the patient's condition warrants special concerns. TDIC provides fax transmission forms for medical clearance on its website at thedentists.com. Risk

CONTINUES ON 57

"It's a judgment call dentists must make, and it's best to err on the side of seeking the medical guidance of a patient's health care provider."

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ANAHEIM: General Dentistry. 3 Ops. GR \$423K. Adj. Net \$140K. Refers out specialty procedures. Growth potential! #CA101

BAKERSFIELD: General Dentistry. 3650 SF. 8 Ops, 7 equipped. Digital X-rays & intra-oral camera. GR \$1.2MM. Adj. Net \$453K. Growing area. #CAM554

BAKERSFIELD and SMALL FARM COMMUNITY: Two Practices 30 mins apart. Strong patient bases. Room for growth. GR \$588K. Adj. Net \$278K. #CAM557

BISHOP: General Dentistry & Building. 1,800 SF. 5 Ops. '11 GR \$1MM. Adj. Net \$387K. #14390

CENTRAL COAST: Prosthodontic Practice. 4 Ops. In-house lab. '12 GR \$1.1MM. Near shopping. #CAM535

CERRITOS: General Dentistry. 1,500 SF suite. 7 Ops, 6 equipped, 1 plumbed. Digital X-rays & SoftDent. Near shopping and freeway. GR \$408K. '12 Adj. Net \$140K. Est. 39 years. #CA100 - In Escrow.

CHICO: General Dentistry. 2400 SF. Free-standing building. '12 GR \$1.4MM. Option to purchase. #CA109

CHULA VISTA: General Dentistry. 4 Ops. 3 1/2 days of hygiene. Dentrux software. '12 GR \$528K. #CA109.

CLAREMONT: General Dentistry. 6 Ops. 8 days of hygiene/week. GR \$581K. Adj. Net \$147K. #CA114

COALINGA: General Dentistry. 1100 SF. 3 Ops. Remodeled in '11. Opportunity for new dentist or estab. dentist looking for satellite office. #CA564

COASTAL ORANGE COUNTY: General Dentistry/Implant Practice. 1,800 SF. 4 Ops. Implant system in all Ops. '12 GR \$1.1MM. #CA520 - In Escrow

COASTAL ORANGE COUNTY: General Dentistry. \$500K on 4 new Ops - high-end chairs, cabinetry, Dentrux, Dexis & digital Pan. Close to the ocean. '11 GR \$600K+ & '12 GR \$500K+. #CAM566

COASTAL ORANGE COUNTY: Periodontal Practice. 5 Ops. Great location near freeway/hospital. Retiring doctor works 3 days/wk with 4 days of hygiene. '12 GR over \$450K. #CAM533

DANVILLE: Facility Only. 5 Fully equipped Ops. Digital X-ray, digital Pano, & Central nitrous oxide/oxygen. Seller relocating. #CA548 - In Escrow

FOLSOM/EL DORADO HILLS: General Dentistry. 1,200 SF. 4 Ops. 2 1/2 days hygiene/wk. Dentrux, laser, digital X-rays & intra-oral cameras. '12 GR \$405K. #CA103 - In Escrow

FREMONT: 3,000+ SF suite. 10 Ops. Digital X-rays & Pan. 4,000 active patients. PPO/HMO. '12 GR \$1.2MM. Adj. Net \$300K. #CA553 - In Escrow

GRASS VALLEY: General Dentistry. 1,500+ SF. 5 Ops, 4 equipped. GR \$491K. Adj. Net \$130K. #14379 - In Escrow

GRASS VALLEY: General Dentistry. 2,000 SF condo. 6 Ops. '12 GR \$442K. #14372 - In Escrow

GREATER CHICO/REDDING: General Dentistry. 3 Ops. Well-established. Intra-oral, Pano & Imaging System. '12 GR \$252K+. #CA104

GREATER SACRAMENTO: General Dentistry. 1,400 SF office. 5 Ops. '12 GR over \$879K. Adj. Net \$446K. #CA525 - In Escrow

GREATER SACRAMENTO: General Dentistry & Building. 2,400 SF. 6 Ops. EZ Dental Software. 3 1/2 days hygiene/wk. \$900K avg. over last 3 yrs. Great location. #CA560

GREATER SACRAMENTO: Orthodontic Practice. Like-new 2,300 SF. 6 Ops. Office with extensive leasehold improvements. 220 active patients phase 1. #CA551

HAWAII (MAUI): General Dentistry. Approx. 1,200 SF. 4 equipped Ops. GR. \$636K #20101

HENDERSON, NV: DECEASED DENTIST, Pediatric Practice - 6 Ops. Dentrux & Pano. '11 GR \$875K, '12 GR \$766K and '13 GR in first 9 months \$688K. Available for immediate sale. #NV100 - In Escrow

HOLLISTER: Facility Only. 1,800 SF. 3 Ops w/ 2 add'l plumbed with cabinets. Adec chairs, units, & lights. Dexis, Easy Dental & Pano X-ray. Owner relocating to own building. #CA563

HUNTINGTON PARK: 15 Ops. Dentrux/Dexis w/25 computer workstations. E4D CAD/CAM machine. '12 GR over \$1.1MM. Retiring General Dentist w/ large group practice started in 1984. Seller owns the building. Practice #CA113

INDIAN WELLS: General Dentistry/TMJ Practice. 4,000 SF suite. 6 Ops. '11 GR \$350K+ on 1 doctor-day/wk. #CAM530

LANCASTER: General Dentistry. 2,300+ SF. 4 Ops. GR \$676K. Adj. Net \$174K. #14376

LOS ANGELES: General Dentistry. 4 equipped Ops, 1 plumbed, not equipped. Great LA location on the west side. GR \$342K on just 2 doctor days/week. Room to grow! #CA117

MILPITAS: General Dentistry. 1,440 SF. 4 Ops w/intra-oral cameras & computers in each Op, plus a Pano X-ray. Prof. designed office in major business district. Owner retiring. #CA562 - In Escrow

MURRIETA: General Dentistry. 1,300 SF. 4 Ops. '12 GR over \$530K. Adj. Net \$213K. #CAM544

MURRIETA: General Dentistry. 5 Ops. 8 days of hygiene/week. '12 GR \$1.5MM. Adj. Net \$875K. #CA107 - In Escrow

NEWPORT BEACH: General Dentistry. 4 Ops near Fashion Island. Dentrux. GR \$256K. Seller refers out most specialty work. Room to grow. #CAM559.

NEWPORT BEACH: General Dentistry. 3 Ops. Newer high-end equipment. '12 GR \$350K on 3 1/2 days/wk. #CAM534

NORTH EAST BAY: General Dentistry est. over 35 years, owner retiring. 2,324 SF. 7 Ops. Dental Mate software, intra-oral camera, Pano X-ray, & digital X-ray. '12 GR \$885K w/ overhead of under 70%. Building to be sold with practice. #CA108

NORTH OF SACRAMENTO: General Dentistry. Remodeled office w/ 4 equipped Ops, 5 available. 1,500 active patients. EZ Dental, Pan, & Fiber Optics. 20 hrs. hyg./wk. '12 GR \$515K on 32 hr/wk. and 37 wks/yr. Bldg. available for purchase. #CA558

NORTH OF SACRAMENTO: General Dentistry. 1,650 SF. 4 Ops. '12 GR \$521K. Low Overhead of 52%. #CA528.

NORTH OF SACRAMENTO: General Dentistry. 2,050 SF. 5 Ops. Dentrux, intra-oral cameras, digital X-ray, imaging system, & Pano. '12 GR of \$1.2M+ with overhead of only 54%. At current location for over 15 years. #CA106

NORTH ORANGE COUNTY: Endodontic Practice. 5 Ops fully equipped. 3 Zeiss wall-mounted microscopes. Estab. 30 yrs. GR \$370K. Adj. Net \$172K on 3 day wk. #CAM561

NORTH SAN DIEGO COUNTY: Large legacy practice. 12 equipped Ops. HMO practice with large CAP check in a desirable area in North County. #CAM543. - In Escrow

ORANGE: General Dentistry. 5 Ops. '12 GR \$830K+. #CA105 **SOLD**

ORANGE: General Dentistry. 3 Ops. In retail location. '12 GR of \$168K. #CA110 - In Escrow

RIDGECREST: General Dentistry and Dental Building. 1,500+ SF office building. 4 Ops. Small practice grossed about \$175K in '12. #CA523

RIVERSIDE: General Dentistry. 4 Ops. Priced for immediate sale - deceased doctor. **SOLD**

SACRAMENTO: General Dentistry. 2,400 SF. 8 Ops, 7 equipped. Office/building with low 54% OH. '12 GR \$642K. #CA549

SAN GABRIEL VALLEY: General Dentistry. 4 Ops. '12 GR \$1.5MM on 3 1/2 day wk. #CAM541 **SOLD**

SAN JOSE: Facility Only. 3,700 SF. 6 Ops. Digital X-ray, sterilization, computer workstations in every room. Reception w/flat screen TV, equipped business office and conference room. #CA565

SAN RAMON: Facility Only. 1,400 SF. 4 Ops. equipped, 2 add'l plumbed. Pano, computer server & workstations w/Dentrux, intra-oral camera. Priced to sell. #CA511

SANTA CRUZ: Endodontic Practice. 850 SF. 2 Ops w/ Schick Digital X-rays. Ideal for a satellite practice. Owner will work for new buyer 1-1 1/2 days/wk. 55% OH. GR \$350-\$400K. #CA102

SANTA CRUZ COUNTY: General Dentistry. 1,100 SF. 3 Ops in prof. bldg. near Hwy. 1. Gross Coll. \$338K on 2 day/wk. 2,200 active patients. 10 new patients/mo. Schick Digital X-ray and Dentrux software. Equipment 5 yrs. Old. #CA550

THOUSAND OAKS: Retiring General Dentist in practice for 37 years. 6 Ops. 8 days of hygiene/week. Dentrux/Dexis. Office collected \$616K in '10, \$621K in '11 and \$589K in '12. #CA118

TURLOCK: General Dentistry. '12 GR over \$950K. Adj. Net \$443K. #CA506 - In Escrow

WALNUT CREEK: Prosthodontic Practice. 3 fully-equipped Ops and full lab. '12 GR \$530K. #CAM540

YORBA LINDA: General Dentistry. 5 Ops. laser, intra-oral camera, & digital X-rays. 3 hygiene and 3 doctor days/wk. Great location. #CAM531

LOCATION CONFIDENTIAL: Pedodontic practice. 4 Ops. GR over \$750K w/ a low overhead. Great opportunity. #CA111

CONTINUED FROM 55

management experts recommend that medical clearance forms include an area for physicians to comment on the patient's overall health, which alerts dentists to potential issues.

In cases where the patient's health is severely compromised, a conversation with the treating physician is recommended before beginning dental treatment or prescribing medication of any kind. However, a conversation with the physician is not a substitute for a signed medical clearance form. "Medical clearance in writing is necessary to provide clear documentation," Barrabee said.

A medical clearance form signed by a nurse practitioner rather than a physician is generally acceptable, according to TDIC risk management analysts. Nurse practitioners are registered nurses with advanced training in diagnosing and treating illnesses. Among other things, nurse practitioners can obtain medical histories, perform medical examinations, identify, treat and manage chronic diseases, order and interpret diagnostic tests, prescribe medications and refer patients to other health care providers. The scope of allowable duties may vary from state to state. For more information, please contact the American Association of Nurse Practitioners at aanp.org.

If dentists have any questions about the qualifications of the personnel signing the medical clearance form, they should call the physician for verification. Barrabee specified that nurse practitioners or physician assistants can only sign off on what is within their scope of practice. "If in doubt, follow up," Barrabee said. ■

The Dentists Insurance Company offers policyholders a free advice line at 800.733.0634 for assistance with questions or concerns about potential liability. TDIC risk management analysts will work with policyholders to develop a solution.

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BC-221 EAST CONTRA COSTA: Well Respected w/ loyal patients, Seller is retiring! 1900 sf w/ 4 ops **\$325k**

BN-218 UNION CITY: Modern and attractive office building. Large, efficiently designed office ~ 2,404 sf w/ 5 ops **\$495k**

BN-183 HAYWARD: *Kick it up a notch by increasing the current very relaxed work schedule!* 1,300 sf w/ 3 ops **\$150k**

BG-226 ANTIOCH (Real Estate): OWN your dental facility! Priced to move quickly at less than \$100/ft. ~ 1,500 sf w/ up to 5 ops **\$137k**

BN-233 ALAMEDA: If real estate and space are what you've been looking for, here's your practice! ~ 3,139 sf w/ 8 ops. **\$275k, RE: \$825k**

CC-151 SANTA ROSA: Stable patient base, well-respected, close to Memorial Hospital. 2,262 sf w/ 6 ops **\$875k Real Estate avail.**

CC-170 SOLANO COUNTY: Near Wine Country! 950 sf w/3 ops **\$225k**

CC-220 MILL VALLEY: In attractive Dental Professional Condo w/in block of Hwy 1. 1,200 sf w/ 3 ops **\$499k & take over Cerec pmts**

CN-189 ANTIOCH VICINITY: In the heart of the beautiful California Delta! 3 ops **\$275k**

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DG-116 SALINAS AREA: Large, loyal & stable patient base! Popular Retail Center. 1,400 sf w/5 ops. State-of-the-art Equipment **\$195k**

DG-124 MILPITAS: Highly visible. Desirable area. 960 sf w/ 2 ops + 1 add'l **\$130k**

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DG-161 FREMONT: Beautiful office generating 40+ new pts/mo. 1,440 sf w/ 4 ops **\$215k**

DC-191 MOUNTAIN VIEW: High quality, potentially large-scale practice. Heart of Silicon Valley. 2,000 sf w/7 ops (+1) **\$950k**

DG-222 SAN JOSE: High traffic Retail Shopping Center with unbeatable signage. 2,847 sf w/ 7 ops **\$925k**

DG-223 SUNNYVALE: Seller Relocating! Popular Retail Shopping Plaza with major anchor tenants. 2,000 sf w/ 6 ops +1 **\$475k**

BAY AREA CONTINUED

DG-202 SARATOGA Facility: Affluent, upscale area. Great Location & Excellent Visibility! Across from major shopping center/Starbucks. Call for Details! 1,568 sf w/ 4 ops **REDUCED! Now Only \$145k**

DG-212 FREMONT: One of the most beautiful practices we've listed! Courtyard Garden welcomes patients. Your talent and skill keeps them! 2,181 sf w/ 3 ops **REDUCED! Now Only \$175k**

DG-214 CUPERTINO: Seller highly motivated and will consider all reasonable offers! Opportunity to own property in the future. Highly desirable commercial corridor. 1,200 sf w/ 3 ops +1 \$100k obo

DG-232 SANTA CRUZ: Large, well-established Medical/Dental Prof complex! 1,063 sf w/ 3 ops **\$345k**

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NORTHERN CALIFORNIA

EG-198 SACRAMENTO: Tucked in well established "Pocket Area" in highly desirable corridor. 1,112 sf w/3 ops **REDUCED! \$125k**

EG-237 ROCKLIN: Seller Moving out of the Country! Would cost over \$300k to duplicate! Spacious & spectacular. State-of-the-art, top-of-the-line equipment. 1,000 sf w/ 2 ops. Plumbed for 2 add'l **\$245k**

FN-181 NORTH COAST: Well respected FFS GP. Stable patient base. 1,000 sf w/3 ops **SELLER MOTIVATED! \$150k (25% int. in bldg. avail.)**

FN-148 MENDOCINO CO: "Gateway to the Redwoods!" Quality care in 4 ops **\$325k**

FN-185 UKIAH: 900 sf w/ 3 ops. Seller Willing to Negotiate! **\$250k**

GN-134 REDDING: Stellar reputation, quality care and location! 2,264 sf w/4 ops. **\$500k**

GN-196 CHICO: Appealing location! ~2,510 sf w/4 ops **\$150k**

GN-149 YREKA: Quality FFS, Warm & Caring. 900 sf w/ 3 ops. Now Only: **\$180k/Real Estate \$110k**

GN-177 CHICO/OROVILLE: Spacious 2,500 sf w/6 ops **\$399k**

GN-201 CHICO: Beautiful practice located on major thoroughfare with stellar reputation! 1,400 sf w/ 4 ops & room for another **\$425k**

GN-228 CHICO/PARADISE AREA: A reputation built on quality care and personalized service in a warm and caring atmosphere. Office ~ 898 sf w/ 3 ops. **\$250k**

HN-213 NORTH EAST CA: Close to the Oregon Border, this FFS practice is ~2,200 sf w/ 3op +1 add'l **\$145k**

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CENTRAL VALLEY

I-9721 STOCKTON: Prof. complex. 1,450 sf w/ 3 ops & plumbed for 1 add'l **\$75k**

IG-067 STOCKTON: Fully computerized, paperless, digitalized. 5,000 sf w/10 ops **Now \$425k**

IG-165 TURLOCK: Well established Shared/Solo Group Practice. 10 ops (shared) **\$428k**

IN-193 Modesto Facility: Recently remodeled! High foot traffic! Can be purchased with or without new equipment. 2,300 sf w/6 ops **\$199k**

IN-205 STOCKTON Facility: Desirable professional corridor. Newly remodeled. 1,565 sf w/ 4 ops **\$169k**

JG-188 FRESNO: Loved, respected, Established! Net Profit over \$350k! 1,452 sf w/4 ops **\$390k**

JN-219 TULARE: Imagine working here in this highly esteemed **fee-for-service** practice! Office is ~ 1,500 sf w/ 4 ops. **\$425k**

IN-211 MODESTO: Located in a single story, multi-unit Professional building, 1,500 sf w/ 4 ops. **\$300k**

SPECIALTY PRACTICES

EG-131 ROSEVILLE Ortho: Reputation, loyal patient base, seasoned staff & beautiful, spacious facilities. 1,100 sf w/ 4 chairs **\$95k**

I-7861 CENTRAL VALLEY Ortho: 2,000 sf, open bay w/ 8 chairs. Fee-for-Service. **\$370k**

I-9461 CENTRAL VALLEY Ortho: 1,650 sf w/5 chairs/bays & plumbed for 2 add'l **\$180k**

IC-163 CENTRAL VALLEY Perio: Well-respected FFS. 2,300 sf w/5 ops **\$175k (Bldg: \$250k)**

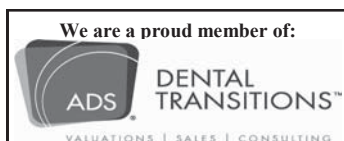
EN-203 SACRAMENTO Oral Surgery: This highly efficient office occupies ~ 3,000 sf w/ 4 fully equipped ops **\$325k**

GN-209 SACRAMENTO VALLEY Endo: Be the one to carry on the stellar reputation and tradition! 1,400 sf w/ 3 ops **\$350k**

BC-230 CENTRAL CONTRA COSTA Perio: Loyal patients @ 2 locations! **\$650k**

EG-225 SACRAMENTO Ortho: Well-maintained, single-story Medical/Dental professional complex. 1,200 sf w/ 4 chairs **\$95k**

DN-229 EAST BAY Endo: Strong referral & patient base. Attractive tree-lined street, mature landscaping and curb appeal. High foot traffic. 975 sf w/ 2 ops **\$250k**



ASK THE BROKER

When is the best time to put my practice on the market?

Believe it or not, January is usually the best time to list a practice. I say this based on previous years' history. We have been in the business for thirty years and experience dictates my answer. I can only assume the reason for this is because the New Year usually brings resolutions and the commitment to big decisions. Dentists who have been associating for a while finally decide it is time to purchase and own their practice rather than associate.

High buyer demand is critical for our Sellers. Our business goes full tilt towards the end of January, slows down during the summer, picks up again from Labor Day until mid-November and then goes into hibernation for the holidays. Therefore, it is best to get the ball rolling in January as it takes several weeks to digest all the practice financials and establish the practice on the market.

Many dentists think that the best time to list a practice is when students are graduating from dental school. This is not true! New dental graduates entering the job market right after graduation usually cannot qualify for a loan until they have practiced for at least a year or two. Of course, there are exceptions for graduates with family funds, parents who will co-sign, or spouses with excellent income-producing jobs.

Historically, January kicks off the New Year with pent-up buyers who have been contemplating their decision for two months during the holidays, coinciding with new buyers who have been associating for the past 18 months after graduation. We are anticipating stronger than normal activity this spring as we are seeing an influx of buyers coming back into the market after deciding that they can no longer postpone their dreams because of a slow economy.

When I was a practicing dentist, I did not particularly care for attorneys or dental brokers. However, now that I own Western Practice Sales, I am constantly amazed at how many dentists try to sell their practices on their own. While it can be done under the perfect circumstances, an experienced broker can help navigate all the pitfalls which dentists are unaware of. Since they are constantly developing a data base of buyers, they normally make up for their commission in making sure they get the full market value and a better fit for the practice. Most of us would never sell a house on our own and that would be WAY easier than selling a dental practice!!! In addition, most of us hire a CPA to prepare our taxes compared to a bookkeeper or those large corporate entities that provide "cookie cutter" tax returns. I would also apply this concept to discount brokers or trying to sell on your own. **Why trust your most cherished asset in the care of anything less than an experienced, full-service brokerage firm.**

Timothy G. Giroux, DDS is currently the Owner & Broker at **Western Practice Sales** and a member of the nationally recognized dental organization, **ADS Transitions**.

You may contact **Dr Giroux** at: **wps@succeed.net** or **800.641.4179**

Prescribing and Dispensing

CDA Practice Support Center

Below are questions and answers on prescribing and dispensing controlled and noncontrolled medicines.

Can a pharmacist substitute the medicine I prescribed, even though I indicated "Do not substitute" on the prescription? A pharmacist told my patient the prescription I wrote is outside my scope of practice. What can I do?

A pharmacist may select another drug product with the same active chemical ingredients of the same strength, quantity and dosage form and of the same generic drug name, of those drug

products having the same active chemical ingredients. However, in no case shall a substitution be made if the prescriber personally indicates, either verbally or in handwriting, "Do not substitute," or words of similar meaning. Reference: Business & Professions Code §4073.

A pharmacist's license is at risk whenever he or she fills a prescription. The pharmacist has a professional responsibility to ensure the prescribed medication is appropriate for the patient and within the prescriber's scope of practice. Many pharmacists expect dentist-generated prescriptions to be for antibiotics or for

relief of acute pain. Prescriptions for medicines not typically associated with oral disorders or for controlled substances for an extended time raise red flags.

Dentists and pharmacists must work together for the patient's benefit. Make an effort to introduce yourself to local pharmacies and the pharmacists in charge. Send a letter of introduction that includes a description of your practice and any education/training you have had that supports the type of prescriptions you write. A practice, for example, that focuses on TMD/TMJ cases may generate prescriptions beyond

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Tonya Lanthier, RDH/ Founder

what is expected from a general dentist.

If your patient uses a pharmacy that is unfamiliar with you and you have written an atypical prescription, send along a note that provides your rationale or that asks the pharmacist to contact you to discuss the patient's case. A pharmacy may question your prescription of one antibiotic over another, for example, but you could use your patient's history to demonstrate that the patient responds best to the antibiotic you prescribe.

Building a professional relationship with pharmacists helps your patients and your practice.

Is it true I must offer a patient a written prescription even if I am able to dispense the medication?

Yes, you must offer to give a written prescription to the patient that the patient may elect to have filled by you or by any pharmacy. Also, you must provide the patient with a written disclosure that the patient has a choice between obtaining the prescription from you or obtaining the prescription at a pharmacy of the patient's choice. Reference: Business & Professions Code §417.

Can I dispense medication to a patient for a condition not related to the dental care or treatment I am providing?

No. Any medication dispensed by a dentist to a patient must be in conjunction with the dental treatment provided by the dentist.

Can I dispense medication using coin envelopes to give to patients?

No. State law requires prescribers who dispense to follow all the packaging requirements of good pharmaceutical practice, including the use of childproof containers. Reference: Business & Professions Code §4170.

CONTINUES ON 62



PRACTICE SALES AND LEASING



Paul Maimone
Broker/Owner

"HAPPY NEW YEAR!"
IT'S A SELLER'S MARKET!
WITH SUPPLY LOW, DEMAND HIGH, &
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BAKERSFIELD #26 – 3,500 sq ft free stand. duplex bldg. w a (5) op fully equipped turnkey dental office. Located on a main thoroughfare w signage. Move in condition. **PENDING**

BAKERSFIELD #27 – (4) op comput G.P. starter pract. 2 ops of new eqt. (2) add. plmbd ops. Opened June 2012. (12) mos Gross Collect \$75K p.t. & growing. Mixed pts. Seller moving.

BEVERLY HILLS – Great startup or second office. (2) op Turnkey Office. Leaseholds & eqt'd. No charts. Located in a smaller two story prof. bldg. on a main thoroughfare. Low rent. **NEW**

CENTRAL VALLEY/So. FRESNO COUNTY – (3) op comput. G.P. in smaller town w ltd. competition. Newer eqt. Networked & digital. Dentrax & Dexis. Gross Collect \$40K+/mos.

CORONA – Dental Spa & Free Stand. Bldg. for sale. (5) op comput. G.P. w (2) spa rooms; one for facials & one for massage. Drop dead gorgeous facility w all the special touches. New eqt. Digital x-rays. Pano eqt'd. Previous Production of \$1.0M+. Partnership dissolution. **NEW**

EAST VENTURA COUNTY – (3) op compt. G.P. Fee for Service. Located in a smaller prof. bldg. w some exposure & visibility. Pano eqt'd. 2013 Proj. Gross Collect \$500K. **SOLD**

ENCINO – (4) op compt G.P. in a well-known, recently remodeled prof bldg. on a main thoroughfare. Magnificent panoramic Valley views in (3) ops. Cash/Ins/PPO. Gross Collect \$600K/yr on a (4) day week. Digital X-Rays & laser eqt'd. 34+ yrs of Goodwill. **PENDING**

HAWTHORNE – (7) op compt. G.P. in a free stand. bldg. on a main St. Exposure & visibility. (6) ops fully eqt'd. Digital x-rays. Cash/Ins/PPO. Many walk-ins. Collecting \$30K+/mos. **NEW**

OXNARD #7 – (5) op turnkey G.P. No pts. In a free stand bldg. on a main thoroughfare.

SAN JOAQUIN VALLEY – G.P. & Bldg. in small town w ltd. competition. (4) op comput. office. Cash/Ins/PPO. Annual Gross Collect \$500K+. Low overhead. Seller retiring. **REDUCED**

WEST SAN FERNANDO VALLEY PEDO/ORTHO OFFICE – Comput. Pedo/Ortho office. (3) op open bay & (1) op quiet room. Pano eqt'd. Digital X-rays. Cash/Ins/PPO small % Denti-Cal. 30+ years of Goodwill. Annual Gross Collect \$600K+. Seller retiring but will assist with transition and/or stay to do Ortho.

WOODLAND HILLS #4 – Beautiful state of the art (9) op comput G.P. in a Shop Ctr. on a main thoroughfare. Excellent exposure/visibility/signage! (6) ops eqt'd w newer eqt. (3) add. plumbed. 2013 Projected Gross Collect \$370K on a 3-3.5 day wk. Cash/Ins/PPO/HMO pts. **SOLD**

UPCOMING PRACTICES: Agoura, Alhambra, Bakersfield, Beverly Hills, Camarillo, Covina, Glendora, Montebello, Monrovia, Pasadena, SFV, San Gabriel, Torrance, Ventura & Westchester.

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CONTINUED FROM 61

I suspect an emergency patient is just seeking another prescription for Vicodin. What can I do?

Check for the patient's name in the online state Prescription Drug Monitoring Program, a tool to assist prescribers in making better prescribing decisions and to cut down on prescription drug abuse. The program provides access to its database of patient controlled substance history to registered prescribers. More information on the program and a link to the electronic application can be found on the CURES site, oag.ca.gov/cures-pdmp. Access to the PDMP may be denied or suspended for a number of reasons, including, but not limited to, failure to maintain effective controls for access to patient activity reports, accessing information for any other reason than caring for one's patients and falsifying an application for access. Dissemination or distribution of the controlled substance history information to anyone other than the registered user is prohibited.

For additional information on prescribing and dispensing, see the articles "Controlled Substances Prescribing and Dispensing" and "Medication Prescribing and Dispensing Q&A" on cda.org/compass. ■

Regulatory Compliance appears monthly in the Journal and features resources about laws and regulations that impact dental practices. Visit cda.org/compass for more than 600 practice support resources, including practice management, employment practices, dental benefit plans and regulatory compliance.



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Make this a "One Stop" Shop. Little competition with phenomenal upside.

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- 6055 SACRAMENTO** 2013 collected \$900,000. 2012's Available Profits on \$924,000 in collections totaled \$515,000+. 6-Ops. Phenomenal location.
- 6054 TRACY** Great starter practice. 2013 should collect \$165,000+ on part-time schedule. 4-ops in shopping center location.
- 6053 SAN FRANCISCO'S SOUTH BAY – PEDO PRACTICE** Long established. 2013 tracking \$660,000 in production, \$650,000 in collections and \$255,000 in Available Profits. Great staff.
- 6052 BERKELEY** Trendy north side shopping area. Very strong foundation. 2,000 active patients. 4-days of Hygiene. Beautiful hitech office with great curb appeal. 2012 collected \$590,000. Lots of work referred out.
- 6051 FRESNO'S FIG GARDEN VILLAGE AREA** Not a Delta Premiere practice. 2013 tracking \$435,000 in collections on a 3.5 day week. 3.5 days of Hygiene.
- 6050 MERCED** 2013 trending \$360,000. Very profitable. Refers Endo, OS & Perio. Not a Delta Premiere Practice. Great foundation to build upon. Full Price \$125,000.
- 6048 SALINAS** Great opportunity for the ambitious, Ideal for two Dentists. 10 days of Hygiene per week. 2012 collected \$1.1 Million. 2013 tracking \$1.2 Million. Practice did well during Great Recession.
- 6047 STOCKTON** Best location outside Brookside Community on West March Lane. Annualized revenues of \$540,000. Attractive 3-Op office. Package sale includes condo.
- 6046 PINOLE** Collected \$500,000 in 2012. 4-days of Hygiene produced \$178,600. Beautiful office. Refers Endo. Lots of Goodwill here.
- 6045 MANTECA / MODESTO AREA'S RIPON** Great location. 3 Ops, 2 wired & plumbed. \$180,000 invested here. Practice did more when Owner worked harder. 2012 collected \$327,000 on 3- day week with 5-weeks off.
- 6044 MODESTO** Best location. New development occurring nearby. Collects \$380,000. Digital with computers in Ops. Very attractive office.
- 6043 EL SOBRANTE** 3-day practice collected \$170,000 in 2012. 3-Ops. Building optional purchase.
- 6041 PLEASANT HILL** Collected \$365,000 with Profits of \$142,000 in 2012. Owner slowing down. Previous 5-years averaged collections of \$415,000 and Profits of \$180,000.
- 6039 CALIFORNIA'S SOUTH LAKE TAHOE** Long established. 2012 collected \$515,000 with 3-months off. Realized Profits of \$230,000+. Attractive 3-Op office

- RIVERSIDE** High identity dental building "For Sale" with practice. Part time Owner grosses \$550,000. Elegant 5 ops includes CT & digital Panorex. Full time Buyer will do 1 Million in 5 years.
- ALISO VIEJO** Best shopping center location. Gross almost \$1 Million. Gorgeous 5 ops, all digital, paperless. 70 New Patients per month. Part-time Owner. Full Price \$945,000.
- CUCAMONGA** High identity shopping center on freeway exit. 5 ops. Grossed \$850,000 in 2012. 2013 tracking \$1.2 Million. Full Price \$850,000
- RIVERSIDE** Grosses \$1.3 Million. Digital GP & Ortho. 10 Ops in 3,000 sq.ft. Low rent. High identity shopping center near Wal-Mart. Young GP will do \$1.5 Million first year & net \$500K. Full Price \$800,000.
- BEST HISPANIC CORNER IN SAN FERNANDO VALLEY** Dental building & practice. 7 Ops with room to grow. 70 New Patients/month. Practice \$1 Million, Building \$1.75 Million. \$2 Million location.
- TORRANCE/GARDENA** Conservative Chinese DDS. Established 31 years. Seller refers lots of work. Young Chinese/American Successor will do \$600,000 first year. Bargain at \$185,000.
- SAN FERNANDO VALLEY** Absentee Owner. Grosses \$1.6 Million. \$6,000-to-7,000/month in HMO checks. Full Price \$1.4 Million. Seller to assist with financing.
- REDLANDS** Bank Repo! 4 ops. High identity location. Practice is operating. Bargain at \$285,000. Make Offer.
- ANAHEIM** Established 50 years. Grossing \$30,000/month part time. Rent \$2,700/month for 2,000 sq.ft. 6 Ops. Full Price \$185,000.
- PASADENA AREA** Grossing \$750,000 part time. HMO \$6,000-to-7,000/month. Did over Million when Owner had more time. Full Price \$850,000.
- LANCASTER** Proven shopping center location. Equipped & ready to go. Seller needed more space. Many walk-ins daily. Seller grossed \$900,000, collects \$600,000+. Full Price \$125,000. Stay 18 months and resell at \$350,000 or more. Low overhead.
- VICTOR VALLEY** Divorce Sale. Classic/Quality GP with high Gross. Owner would rather sell and split value than fight and give to attorneys. This is simple and lets him go on with his life.
- BAKERSFIELD** High identity dental building. Grosses \$750,000. Established 50 years. 5 ops. Successor will do \$1 Million first year. Low overhead. Full Price \$500,000.
- SMALL TOWN NEAR BAKERSFIELD** Practice and real estate. \$400,000 with full time DDS. Practice and building \$350,000.
- ORANGE** Part time Lady DDS. Does \$30,000-to-40,000/month. 5 ops. Seller can work back for smooth transition. Full Price \$295,000.
- VICTOR VALLEY** High identity shopping center. Grosses \$650K. 8 Ops low overhead. Full Price \$550,000.
- REDLANDS** Unique Location. Low overhead digital office. 5 ops, Gross \$30,000+/month. Full Price \$350,000.
- NEVADA** Small Resort City near Las Vegas. "State of art" 5-ops. Seller will stay for smooth transition. Grosses \$600,000 on 3-days. Will do \$300,000 more with 3 more days. Full Price \$600,000.
- DENTURE CENTER** Over 30 denture patients per day. Grosses \$1.3 Million. Patients not given option for implants as practice just does dentures. Full Price \$1 Million. Specialist can take to \$2 Million first year.

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4009 WOODLAND

Dental facility in gorgeous garden setting. 1,573 square foot, single level, handicap accessible dental facility with 4 operatories setup for right-handed delivery; bathroom; a staff lounge; reception area; private office; business office; lab; sterilization area; consult room; and a separate storage closet. The office enjoys a view of the shared, beautiful, wooded common area and garden bridges at the center of the condominium complex. Asking \$1.50 per square foot.

3092 SF FACILITY

1,600 sq. ft. street-level dental facility in Marina/Cow Hollow neighborhood across from Presidio with excellent visibility and signage for foot traffic plus easy diagonal parking in front of building. Move in ready with 4 ops., 2 labs, kitchenette, reception and 2 desk areas plus 2 pvt. offices, 2 bathrooms, 1/2 basement & backyard with deck. Asking Rent \$3.50/sq. ft.

4015 LOS ANGELES COUNTY GP

Quality East San Gabriel Valley, Foothill Community practice. Retiring seller working 4 doctor-days, approx. 1,600 active pts., seasoned & loyal staff. 1,103 sq. ft. modern office w/4 fully-equipped ops. Prominent, well-travelled street corner in desirable neighborhood surrounded by healthcare professionals with large daytime population draw. Recent equipment upgrades. New computers and new cabinets. 2012 GR \$877K+ Asking \$722K.

3096 NORTH BAY PERIO

Step into quality practice with established referral base. 2,200 sq. ft. office w/6 fully-equipped ops. Modern facility kept updated with recently purchased chairs, lights, Pano & lasers. Seller will grant a fair market lease and would consider selling the office space. 5 year avg. GR \$1.2M+

4007 FREMONT PERIO

Seller retiring from 30 year est. Periodontal practice in 3 op facility located in medical/dental building on well-traveled avenue in commercial neighborhood. Strictly Perio - no implants. Great starter practice opportunity, turnkey operation with equipment and no construction hassles. 2012 GR \$133K+ w/just 1 Dr. day/week. Avg. 8 new pts. per month, 6 pts. per Dr. day & 7-8 pts. per hygiene

4011 SANTA ROSA GP

Seller is changing careers and offering a well-established and successful practice. No insurance contracts, well-trained staff, 4 doctor day/week & attractive 1,700 sq. ft. office in desirable neighborhood close to downtown. 2012 \$576K+, 2013 on schedule for \$612K+ as of June. This is a terrific opportunity! Asking \$450K.

4014 SAN FRANCISCO GP

Located in Cow Hollow neighborhood. Seller has a sterling reputation throughout the community, and is ready to sell. Facility has 3 fully-equipped ops, reception area, business office, private office, lab + sterilization area, x-ray room, dark room + storage and bathroom. Asking \$125K.

4012 SAN RAFAEL GP

Ready to start your own practice? Check out this turnkey ready practice opportunity with brand new state-of-the-art equipment: Panorex, inter-oral cam, digital x-ray in well-deigned 800 sq. ft. facility w/3 fully-equipped ops. Located on well traveled street close to hospital in strategically located professional building. Averaging 5 new pts. per month. Asking \$275K.

3098 SALINAS GP

Well-known GP specializing in restorative dentistry retiring from 28 year practice located in highly visible downtown office. 4 fully-equipped ops., Panorex, digital x-ray & recent equipment upgrades. 2 year avg. GR \$331K+ w/approx. 152 doctor days/yr. Asking \$150K.

4002 SANTA CRUZ AREA GP & BLDG

Well-est. practice in modern 1,250 sq. ft. office w/4 ops. 5 years est. GR \$630K+ w/ just 4 doctor days. Selling building & practice together. Practice asking price \$430K, building to be determined.

3094 NORTH BAY PERIO

North Bay Perio now available. Seller retiring from well-est. practice with seasoned staff and active referral base. 1,300 sq. ft. very nice office with 4 fully-equipped operatories. 2012 GR \$450K+ with just 3 1/2 doctor days and 5 days of hygiene per week. Great upside potential since owner does few implants. Asking \$271K. day. Asking \$75K.



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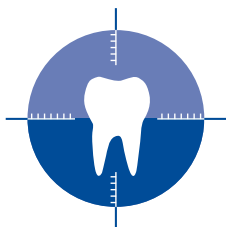
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IMAGING

Accuracy of extraoral bitewing projections

Kamburoglu K, Kolsuz E, Murat S, et al. Proximal caries detection accuracy using intraoral bitewing radiography, extraoral bitewing radiography and panoramic radiography. *Dentomaxillofac Rad* 41:450–459, 2012.

Clinical problem: Early and accurate diagnosis of caries is important to minimize loss of tooth structure. Currently, a combination of visual and clinical examination and bitewing radiography is used to detect proximal caries. However, the sensitivity for radiographic detection of proximal caries is low. Recently, the panoramic unit manufacturers have introduced the concept of “extraoral bitewings,” where the imaging projection of a panoramic unit is modified to generate bitewing-like radiographs. However, the accuracy of this extraoral projection for proximal caries detection has not been tested.

Aim: This study compared proximal caries detection using standard intraoral bitewing, extraoral bitewing and panoramic radiographic projections.

Method: In this in-vitro study, 80 extracted human premolar and molar teeth were radiographed using intraoral radiographic film (Kodak Insight), and extraoral bitewing and panoramic projections (Planmeca ProMax digital panoramic unit). Three observers scored images on two separate occasions. The scores were compared with the histological gold standard to generate receiver operating characteristic curves (ROC).

Results: The Az values (area under the receiver operating characteristic curves) were highest for the intraoral bitewings, and were significantly higher than those derived from extraoral bitewing images and panoramic images.

Conclusions: Intraoral bitewing radiography is superior to extraoral bitewing and panoramic projections for the diagnosis of proximal caries in posterior teeth.

Bottom line: Standard intraoral bitewing radiography continues to be the modality of choice for detection of proximal caries in the posterior dentition.

— Sanjay M. Mallya, BDS, MDS, PhD, and Sotirios Tetradis, DDS, PhD

PERIODONTICS

Bacterial changes that occur following periodontal therapy

Socransky SS, et al. Effect of periodontal therapy on the subgingival microbiota over a two-year monitoring period. I. Overall effect and kinetics of change. *J Clin Periodontol* 2013; 40: 771–780.

Background: Periodontal treatment is rendered in hopes of improving various clinical parameters and altering the subgingival microbial flora to one that will support periodontal health. The aim of this article was to determine the bacterial changes that occur following periodontal therapy for up to two years.

Methods: This randomized, single-blinded, prospective clinical trial consisted of 178 chronic periodontitis patients assigned to eight groups treated by scaling and root planing alone or with one, two or three adjunctive periodontal therapies (systemic amoxicillin and metronidazole, local tetracycline and/or surgery). A total of 27,710 subgingival biofilm samples were collected and subjected to checkerboard DNA-DNA hybridization for the analysis of 40 bacterial species. Patients were evaluated at three, six, 12, 18 and 24 months postperiodontal therapy and data was analyzed using the Friedman and Wilcoxon ranks tests to determine statistical significance.

Results: Overall, the mean counts of 30 of the 40 tested species, including red and orange complex bacteria, were significantly decreased post therapy except for *Streptococcus oralis*, which was significantly increased at two years. Although the kinetics surrounding the bacterial reductions differed among species, a general trend was observed with all of the categories of baseline pocket depths in which a rapid reduction of the DNA probe counts was observed at three months followed by a rebound at six months and a slow decline up to 24 months.

Conclusion: Changes in the subgingival microbiota as a result of periodontal therapy leads to an overall decrease in the total number of bacteria, which can be maintained for up to two years.

Clinical significance: The best strategy to maintain periodontal attachment is to reduce periodontal inflammation. Reduction of bacterial biofilm and total number of bacteria can help to reduce inflammation and achieve periodontal health. Various therapeutic approaches are effective in reduction of bacterial biofilm over a period of time that can help to control periodontal inflammation and attachment loss.

— Kian Kar, DDS, MS, and Diane Anthony

PUBLIC HEALTH

How alternative tobacco products affect smoking cessation attempts

Popova L, Ling PM. Alternative tobacco product use and smoking cessation: a national study. *Am J Public Health* 2013 May;103(5):923-30.

Objectives: Smoking rates in the U.S. have been driven down by health concerns, increasing regulations and prices and changing social norms. As a result, the promotion of alternative tobacco products has been escalated by cigarette companies. The marketing messages include those that smokeless tobacco products facilitate reduction or cessation of cigarette use. These messages encourage dual use, which raises health concerns. The authors investigated the frequency of alternative tobacco product use (loose leaf, moist snuff, snus, dissolvable, electronic cigarettes among smokers and the association with quit attempts and intentions.

Methods: A nationally representative probability-based cross-sectional survey of 1,836 current or recently former adult smokers was completed in November 2011. Multivariate logistic regressions evaluated associations between alternative tobacco product use and smoking cessation behaviors.

Results: Of the smokers, 38 percent had tried an alternative tobacco product in the past. About 12 percent of smokers were current dual users in the past 30 days. Men and younger people were most likely to have used any alternative tobacco products in the past (except dissolvable), and women and people of Asian descent were more likely to have tried e-cigarettes. E-cigarettes were tried most frequently, and participants were most open to using them in the future.

Alternative tobacco product use was associated with having made a quit attempt, and those intending to quit were significantly more likely to have tried and currently use the products than were smokers with no intentions to quit. Use was not associated with successful quit attempts. Interest in future use of alternative tobacco products was low, except for e-cigarettes.

Conclusions: Alternative tobacco products are attractive to smokers who want to quit smoking, but these data did not indicate that they promote cessation.

Clinical implications: Use of these products is not associated with having made successful quit attempts. Patients should be informed that these products may lead to dual use. Dual use is associated with increased rates of cardiovascular disease, pancreatic and esophageal cancers, and greater risk of inflammatory bowel disease. Unsubstantiated, overt and implied claims that alternative tobacco products aid smoking cessation should be prohibited.

— Mina Habibian, DMD, MS, PhD

PEDIATRICS

Trends in pulp therapy: analyzing pulpotomy techniques taught in pediatric dentistry residency programs

Walker L, Sanders B, Jones J, Williamson C, Dean J, Legan J, Maupon G. Current Trends in Pulp Therapy: A Survey Analyzing Pulpotomy Techniques Taught in Pediatric Dentistry Residency Programs. *J Dent Child (Chic)* 2013 Jan-Apr;80(1):31-5.

Purpose: This study was aimed at program directors of advance pediatric dentistry programs to evaluate the materials currently being taught and used for pulpotomy procedures for primary teeth in educational and clinical settings.

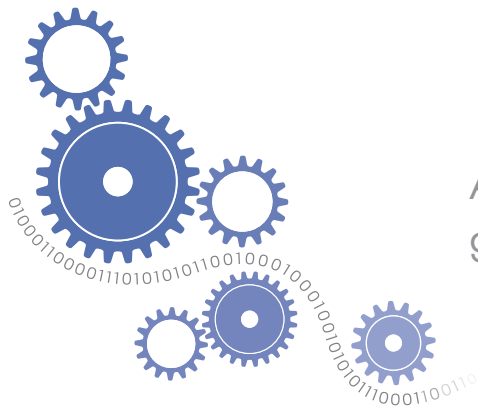
Methods: A web-based survey (SurveyMonkey), which was approved by the Institutional Review Board of the Indiana University, Indianapolis, was distributed to all graduate pediatric dental residency program directors in the U.S. Questions regarding utilization of different medicaments and procedures and if there were any changes in the last five years were assessed. Medicaments and techniques assessed were formocresol, ferric sulfate, mineral trioxide aggregate (MTA), calcium hydroxide and sodium hypochlorite; ZOE; eugenol-free bases; intermediate restorative material; resin-modified glass ionomers; compomers, electrosurgery and diode lasers. The rationale of program directors for using and/or phasing out certain medicaments was also surveyed.

RESULTS: Out of 71 program directors, 47 (55 percent) responded. Statistically significant finds are as follows: Decrease of formocresol (dilution 1:5) being utilized over the last five years. This is due to systemic health concerns, carcinogenicity and reliance on reports from evidence-based literature. Increase in utilization of ferric sulfate and MTA. Cost was the biggest limiting factor in using MTA, followed by reliance in evidence-based dentistry and less familiarity, longer procedure time, technique sensitivity and biocompatibility.

Increases in lasers and diodes were also seen, but this was not a statistically significant finding.

Discussion/conclusion: The majority of pediatric programs are still utilizing formocresol. However, in the last five years, some have chosen to transition to other materials and techniques such as MTA, ferric sulfate, laser and electrosurgery. MTA was chosen because of its biocompatibility and success rate in published literature. Cost is the biggest limiting factor. More randomized clinical trials must be conducted on laser and electrosurgery pulpotomies. Also, histologic analysis of teeth treated with these techniques must be conducted to lead to greater awareness and acceptance of these materials and techniques.

— Thomas S. Tanbonliong Jr., DDS



A look into the latest dental and general technology on the market

Canon PowerShot G16

(Canon U.S.A. Inc., \$499; pricing may vary)

General specifications on the G16 remain unchanged from the G15 model. Included are 12.1 megapixels and a 1/1.7 inch sensor, which is admittedly small compared to other point and shoots in the same class. Also included is a pop-up flash, an optical viewfinder, a three-inch LCD screen and 5x optical zoom with a zoom range of 28-140mm.

A big plus for the G16 is its user friendliness while in manual mode, which is helpful for dental use when users are adjusting settings between photos. Manual use is made simple by several dials on the body of the camera. There is an easily accessible dial for shutter speed and a shared dial for F-stop and ISO, making it simple to adjust between photos and in concert with surrounding light sources. As well, the ability to have programmable settings, on the main dial as C1 and C2, can be used for one-touch intraoral and/or portrait-type photos.

A new upgrade for the G16 is its Wi-Fi capability. Users can transfer photos from the camera to their iPhones or Android devices via a Canon photo app (Canon CW) or to their computers. This enables them to review photos with patients or highlight certain treatment plans with the help of high-quality images in a reasonable amount of time. Set up is pretty straightforward by following the instruction manual and downloading the app.

Image quality can be further improved with various accessories. The hot shoe mount allows for DSLR-quality ring light use, a fairly standard need for dental photography. Flash diffusers can also be mounted on the hot shoe while using the pop-up flash. A standard lens adapter hooked onto the existing lens helps the user eke out more quality with the addition of macro, fisheye or telephoto lenses, for dental or recreational use.

If users want to improve the quality of their dental work, it's necessary to document their work. Take photos, lots of photos, and don't be scared off by the entry level cost of some DSLR setups, or the complex nature of changing lenses or needing one accessory or another for good dental images. Becoming comfortable with a compact enthusiast camera like the G16 or other compact system cameras is a good stepping stone for future DSLR use.

— Darien Hakimian, DDS

Automatic Link

(Automatic Labs Inc. \$99.95)

As many objects in our everyday lives are embedded with sensors and connected to each other and our smartphones, the "Internet of Things" is beginning to materialize and usher forth an era of unparalleled connectivity. Joining the ranks of industry-shifting devices such as the Nest Learning Thermostat and the Nike+ FuelBand is the Automatic Link.

Link bills itself as a "smart driving assistant" that plugs into your car's data port and connects via Bluetooth to your smartphone whenever you drive. The associated Automatic app (iOS or Android) utilizes a users' GPS on their phone to provide driving feedback, tracking such things as rough braking, speeding and rapid acceleration, and logs how much they drive and where, miles per gallon for all trips and detects fill-ups and local gas prices to show how much is being spent on fuel.

In addition, Automatic can detect a "check engine light" and translate the engine trouble code generated by a car's onboard computer, taking the mystery out of that cryptic alert so the driver knows how best to respond. If a car needs to go to a mechanic, Automatic can search out nearby mechanics in the driver's vicinity.

Automatic can also detect many types of serious crashes (using the Link's built-in accelerometer) and, when a crash is detected, Automatic staff contact local authorities to send help and also call the user's (pre-defined) emergency contacts to let them know about the crash and that emergency responders are on the way.

Finally, Automatic always remembers where you parked and can display your car's location (and directions to it) using your smartphone's GPS and mapping.

I've had a Link installed in my car for about two months and, as a result, have learned that I tend to brake quite hard and accelerate too fast on a green light. At first, that subtle little beep annoyed me, but then I realized (and accepted) that thanks to Automatic, I'm learning to improve my bad driving habits and save both fuel consumption and wear and tear on my vehicle as a result. While I have not measured or compared my gas mileage, it has been informative to learn how much it costs me to drive to and from work each day.

— Blaine Wasylkiw, director of online services, CDA

QUESTIONS MOST OFTEN ASKED BY SELLERS:

1. Can I get all cash for the sale of my practice?
2. If I decide to assist the Buyer with financing, how can I be guaranteed payment of the balance of the sales price?
3. Can I sell my practice and continue to work on a part time basis?
4. How can I most successfully transfer my patients to the new dentist?
5. What if I have some reservation about a prospective Buyer of my practice?
6. How can I be certain my Broker will demonstrate absolute discretion in handling the transaction in all aspects, including dealing with personnel and patients?
7. What are the tax and legal ramifications when a dental practice is sold?



QUESTIONS MOST OFTEN ASKED BY BUYERS:

1. Can I afford to buy a dental practice?
2. Can I afford not to buy a dental practice?
3. What are ALL of the benefits of owning a practice?
4. What kinds of assets will help me qualify for financing the purchase of a practice?
5. Is it possible to purchase a practice without a personal cash investment?
6. What kinds of things should a Buyer consider when evaluating a practice?
7. What are the tax consequences for the Buyer when purchasing a practice?



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A Very Good Year



I was now quite capable of making a living without knowing beans about quadratic equations or the significance of pie are squared.

Robert E.
Horseman,
DDS

ILLUSTRATION
BY VAL B. MINA

When I was 17, it was a very good year. Armed with a high school diploma on which my name was inscribed correctly in beautiful calligraphy, I faced the future with the full confidence of knowing what I did *not* want to be. My youthful ambition was to become an electrical engineer, but whatever thirst I had for that profession was effectively slaked after encountering the dizzying goulash of algebra, geometry, trigonometry and differential and integral calculus. As my checkbook can attest, some of us are simply not cut out for abstract thinking.

When I was 23, it was a very good year. In spite of a crippling misunderstanding of the complete metric system with its insistence upon drams, grams and

millimeters, I emerged from dental school with a bachelor of science degree mounted on a nice plaque and a complimentary doctor of dental science degree certifying I was now quite capable of making a living without knowing beans about quadratic equations or the significance of pie are squared.

But, before I could confirm that the general public was probably not ready to embrace the ministrations of a 23-year-old freshly minted dentist, there was an international conflict to attend to.

When I was 25, it was a very good year. I can truthfully say that World War II was more exciting than dental school. Even more riveting than histology, pharmacology and anatomy of the head and neck put together was learning

the art of keeping one's own anatomy intact until the shooting was over.

When I was 26, it was a very good year. It was a very good year for building a practice after the United States Marine Corps awarded me a nice discharge diploma signed by the Secretary of the Navy who thanked me for not taking up space in Arlington National Cemetery and added, "Stay in touch."

When I was 27, it was a very good year. The summer of 1947, I met a young lady who emitted more electricity than the entire Western Grid. Four months later when she had at last obtained the legal age of 21, I locked my knees the best I could and stood with her in my double-breasted blue suit with the wide lapels, brown wing-tipped shoes and big Windsor-knot tie in front of a minister. Hair slicked down with Brilliantine and wearing the stunned expression of an individual who had just been granted a preview of his next 66 years, I murmured in a voice I didn't recognize, "I do."

Adorned with a white orchid the size of a dinner plate, this lovely creature peered around it and echoed, "I do, too." That fall, that November of '47, it was a very good year.

When I was 29, I was a first-time father, narcotized by the daily pantheon of Desitin and Johnson's Baby Powder. Adroitly testing bottled milk temperature on my wrist, I was introduced to nondisposable diapers and how to function minimally on four hours of sleep per night. It was a very good year for learning. Together, my bride and I would fathom how to be parents; the boy would learn what he could get away with.

We had plenty of help. Apparently, other people had done this before us, but the advice was frequently contradictory. To add to the confusion, plastic was invented, television became a part of the household and color replaced

The electricity is still there,
the amperage only slightly
diminished, the wattage
still incontestably bright.

black and white before we got the first one paid for in accordance with the American credo of acquiring a mortgage, accumulating credit cards and insuring everything against every contingency.

When we had our prototype progeny pretty well developed, we decided to introduce a new model of a different gender, so when I was 31, it was a very good year, during which we started applying what we had learned to a baby girl. The learning curve got steeper.

When I was 35, it was another very good year. Another girl.

Now we knew pretty much everything there was to know until this trio of kids got into puberty, so we traveled the western half of the country in vehicles without air conditioning and safety belts because manufacturers hadn't supplied them yet. Siblings napped, fought jurisdictional wars in the back seat, ate junk food before it had that name, stopped at a million restrooms and climbed over everything that was available in every national park that we visited.

We hadn't undertaken anything beyond standard operating practice since I grew a mustache and my wife dyed her hair some shade of red. At this point, I considered longevity was my most notable achievement, so when I was 51 we moved lock, stock, barrel and kids to Australia.

My own parents, in the spirit of the early pioneers, had piloted a slightly modified Conestoga wagon in the form of a 1919 Dodge from Kansas to California in 1926, dragging two kids

ages 6 and 3 with them for company. My future wife's tribe moved from Canada to Washington then to Oregon and finally to California in 1926. It had been a very good year for gypsies; otherwise, we would have never met.

When I was 61, that, too, was a very good year — actually a very good decade. Back in California with a reestablished practice, we concluded that a new Australian daughter-in-law and a son in practice with me, plus the accumulation of two granddaughters and a great-grandson, was a sterling accomplishment. Akin, perhaps, to successfully negotiating a trip over Niagara Falls in a barrel large enough for two generations, but definitely exhilarating.

On a particular day in August of every year, my wife and I pause on the anniversary of our first date and consider ourselves either the most perfect couple on the planet, or more likely, the luckiest. The electricity is still there, the amperage only slightly diminished, the wattage still incontestably bright.

Now at 93, my wife and I are in the autumn — or arguably — the winter of our years. Like vintage wine from fine oaken casks, I offer poetically. Her eyes roll. I look across to her every morning. She sleeps, mouth slightly open, her silver hair fanned out on her pillow and I reach over to softly touch the back of her hand where the ring I gave her 66 years ago still shines. That fall, that November when I was 27, it was a very good year. ■

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