

OF THE CALIFORNIA DENTAL ASSOCIATION

Journal

JULY 2012

Telehealth Technologies

In-Person Versus Virtual
Dental Exam

New Strategies

VIRTUAL DENTAL HOME

PATIENTS

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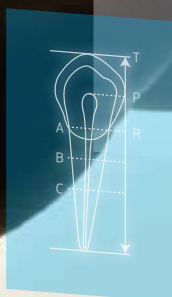
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No Grandfathers

KERRY K. CARNEY, DDS

On Sunday morning radio, I heard that Sen. Dianne Feinstein had sent a letter to California Senate President Pro Tem Darrell Steinberg warning him that if the State of California did not do something to protect small businesses from systematic abuse by litigation then she would introduce legislation on the federal level to do just that.

Nothing like a family dustup between state and federal legislators of the same party to bring a smile to my face.

Feinstein's letter described the current situation. Some attorneys file "...'abusive lawsuits' and 'coercive demand letters' to force small businesses to pay thousands of dollars over often-minor noncompliance with the federal Americans With Disabilities Act and the state Unruh Civil Rights Act.

"The shakedown tactics used by these lawyers may place a financial strain on businesses and counterproductively leave them unable to afford to make required access improvements," Feinstein wrote.¹

Clint Eastwood was sued in 2000 for ADA violations at the hotel he owned in Carmel. As a result of his high-profile case, federal amendments allowing time to fix access violations were proposed in 2000, 2001, 2003, and 2005. They all failed.

In California, there are three main pieces of legislation that have a direct impact on the ADA compliance picture for dental practices.

California's Unruh Civil Rights Act of 1959 was established to prevent discrimination by businesses. In 1968, the California Legislature enacted the California Disabled Persons Act, which declared that the physically disabled are entitled to the same rights as the able-bodied.

In 1990, the U.S. Congress passed "The Americans With Disabilities Act." Every-



A noncompliant business may be held responsible, regardless of whether the facility in which the business operates is owned or rented.

one else refers to this as the ADA but that acronym means something else in our profession so we frequently refer to it as the AwDA to avoid confusion. The AwDA was intended to make public accommodations accessible by disabled individuals.

Dental practices are considered places of public accommodation under the AwDA.

Sen. Feinstein was concerned for Californians because the constellation of these three acts and their subsequent amendments makes small businesses in California very attractive for "drive-by" AwDA lawsuits. Neither actual intent to discriminate nor actual harm is required to trigger litigation in California. Each violation carries a statutory penalty of \$4,000 plus potentially the awarding of attorney fees. Then there is still the cost of fixing the problem.

In other states, fixing the disability access issue, the injunctive relief, is the only thing for which the plaintiffs can sue. The lucrative damages awarded under the Unruh Act are in part why California accounts for 42 percent of national AwDA litigation.²

The stage was set for monetary profit to trump access and an industry of legal abuse took root and flourishes. The scenario goes something like this. A litigant with standing drives by and notes a failure to comply. It could be as simple as missing or improper signage. A letter of intent to sue is sent to the business owner with an offer to settle for less than

the minimal fine. However, the settlement does not preclude other drive-bys from threatening to sue and demanding similar settlements.

In 2008, SB 1608 was signed into law in California. This was a reform aimed at providing some relief to small businesses trying to comply with AwDA requirements.

The key provisions of SB 1608 include:

- Incentivizing building owners to use state-certified access specialists to ensure compliance.
- A new court procedure to encourage early resolution of disability access lawsuits.
- Clarifications in the law to help reduce unwarranted damages and attorneys' fees.
- A new disability access commission that is tasked with evaluating and providing recommendations on further disability issues having an impact on the disability community and business.
- Improved continuing education in disability access laws for building inspectors and architects.³

The state-certified access specialists are an important element in this legislation. Having your local building inspector OK construction does not guarantee you are in compliance. As of July 2010, local building inspection offices were required to have at least one state-certified access specialist on staff to provide consultation.³ Despite the requirement, it does not seem that this is the case in most municipalities.

One of the biggest misconceptions around AwDA requirements is the notion that there are “grandfather clauses.” There is no grandfathering. Even if your practice is in a building that was constructed before 1992, architectural barriers that impede accessibility must be removed if “readily achievable.” Consult your attorney to find out what that means.

Newly constructed or remodeled facilities must fully comply with AwDA standards.

A noncompliant business may be held responsible, regardless of whether the

facility in which the business operates is owned or rented.

Under SB 1608, if a business owner voluntarily hires a certified access specialist to inspect his/her facility for AwDA compliance, there may be some legal protection for good faith efforts to comply. The specialist provides a report outlining exactly where AwDA vulnerabilities exist. If a business is sued after having an inspection, a 90-day stay of the lawsuit and an early evaluation conference can be requested.

The goal of the AwDA regulations is

to reduce physical barriers to access. It is the law. However, no one likes to see the funds that should be spent on accomplishing that goal diverted to enrich those who make a livelihood out of abusing the system. The best defense against the risk of falling prey to abusive litigation is to take advantage of SB 1608 and become compliant. Otherwise like Clint Eastwood’s Dirty Harry said, “You have to ask yourself, ‘Do you feel lucky?’ Well, do ya?”

■■■■■

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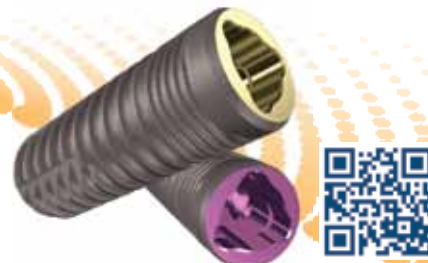
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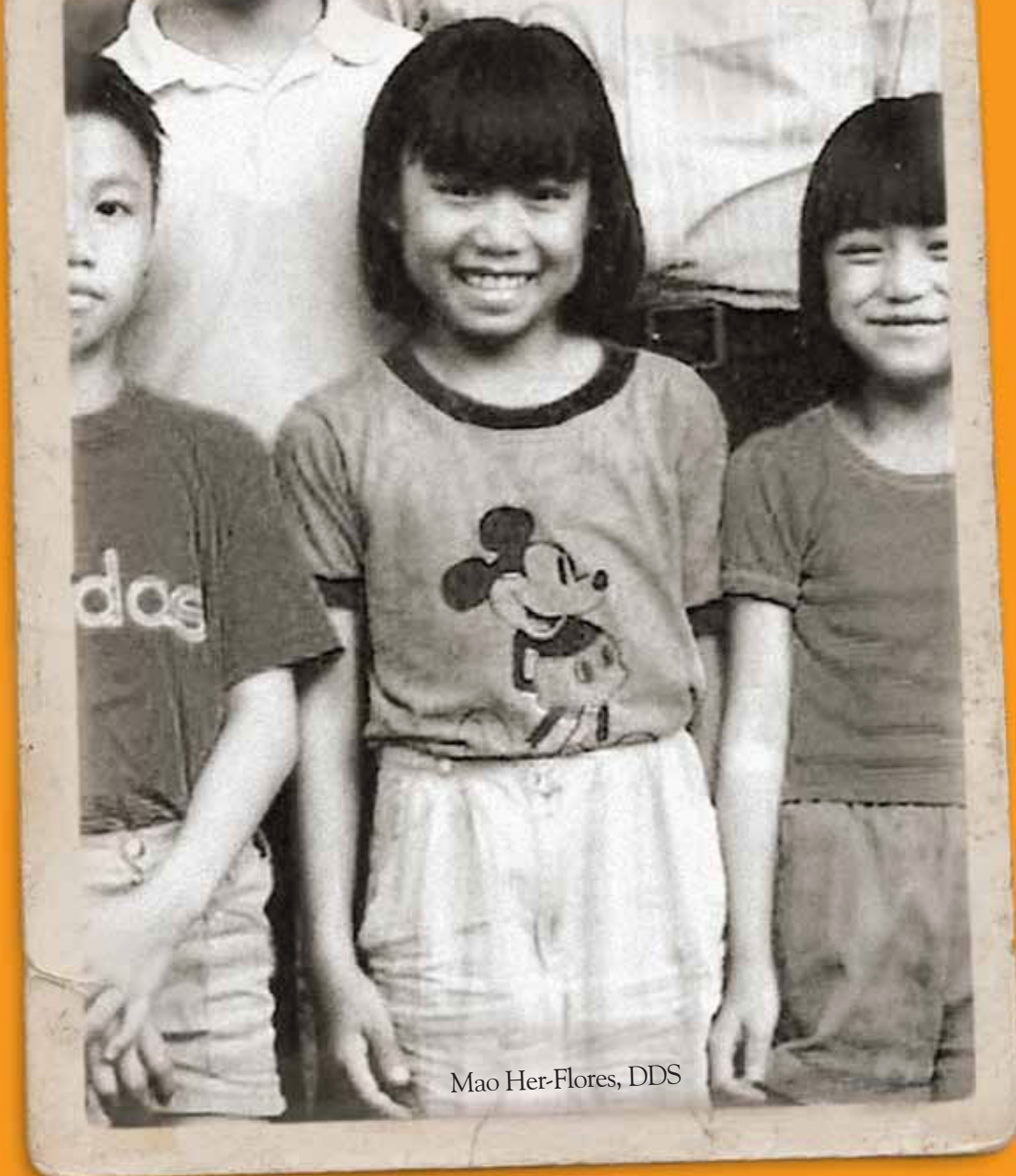
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Mao Her-Flores, DDS

Often, where you come from defines where you're going.

A fifth-grade field trip to a dental office was the spark that led Mao Her-Flores to dentistry, but her experiences as a young girl working in the fields with her parents are what shaped her choice of where to practice. You see, as a young dentist, she ran a community clinic where she cared for migrant workers and their families. And in the faces of her littlest patients, she saw herself.

Every dentist has a unique story behind why they chose this profession, but the reasons to join CDA are clear—advocacy, protection, education, support and being part of an organization dedicated to improving the oral health of all Californians.

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Access to Care! Missing the Point

For several years now, I have read about and participated in discussions about the lack of access to care due to inadequate insurance, inadequate numbers of dentists, maldistribution of dentists, unwillingness by dentists to care for the state/federal insured, and the burgeoning crisis of caries, particularly in children but including adults as well. Aren't we missing the point here?

I have known since dental school (1966 to 1970) that a restoration to fill a cavity does nothing to improve oral health. Thank you Ernest Newbrun and Robert Parr for helping me understand oral disease. None of our typical restorative efforts does anything to improve the oral health of our patients. The real problem, in my view, is burgeoning oral disease as a result of a deteriorating, much-sugar-added diet and the lack of dental health education for our patients.

A Clean Tooth Will Not Decay. We have known that for decades. Since 1999, we have had the benefit of research and teaching from the likes of John Featherstone at University of California, San Francisco, and Douglas Young at Arthur A. Dugoni School of Dentistry. They and many others are teaching us how to teach our patients how to control the disease in their own mouths. Our patients can even reverse the effects of the disease in some situations. However, I am continually dismayed by how few practitioners I talk to put the principles of protocols like caries management by risk assessment (CAMBRA) to use in their daily practice.

How many of you take the time to use disclosing solution for EVERY preventive recall appointment? After disclosing the patient, how many of

you hand a toothbrush to the patient and give them an opportunity to "see and feel" what it takes to get the plaque off? Give those hands a chance to start "muscle memory" for a good toothbrushing. How many of your hygienists put mom's nine-month-old infant/toddler in your laps knee-to-knee style and show mom how to clean the child's teeth? How many hygienists disclose the kids and then after the kids brush the plaque off, show mom where the child's dexterity is lacking? Then, put the toothbrush in mom's hand and allow her to finish the job. Please, do all this with a dry toothbrush. Toothpaste does nothing to help the cleaning. A dry brush facilitates visibility and effectiveness, reduces time, eliminates the mess, and allows mom to do it anywhere, like in her lap at story time or after the child is in bed.

The Harder I Work, the Behinder I Get! If we spend our energy on the problem of surgically treating (drill and fill) the devastation of oral disease, we will never improve the situation our populace is facing. The disease is growing faster than dental manpower will ever be able to grow. And the oral health of that populace is deteriorating at a remarkable rate. Childhood caries incidence increased by 30 percent from 1994 to 2004. That is astounding. I don't have incidence figures for adults but their diet has been deteriorating like the kids' diet, and the access to care problem for them has been growing just like for the kids.

We must address the disease before we address the devastation. Does the surgeon remove the gangrenous foot of the diabetic without first diagnosing, addressing, and controlling the disease? Do you "expect" your patients to control



their dental disease before you do their restorations? How much more willing would your patient be to accept the very best (and profitable to you) dentistry if they had taken control of the dental disease in their mouths, had seen the proof, and knew that the investment in that fine dentistry was going to last a long time?

Plaque is a very, very complex "organism," which is its very weakness. Disrupting that biofilm is very easy once the patient sees it and understands it. If our patients have taken control of the disease in their mouths, we will spend very little time repairing the fine dentistry we do. This improves accessibility for more patients, too. It will make your hygiene recall department a larger profit center and open your schedule to see more new restorative patients.

We must address the disease if we are going to provide our patients the best long-term service. Though restorations are valuable, they do nothing to address the burgeoning oral disease impacting our patients.

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Moral Decoupling

DAVID W. CHAMBERS, PHD

All the big companies have ethics departments now. Recently failing to find a contact on the webpage of the first large dental supplier I tried, I left a note on the bulletin board explaining who I am and asking to be put in touch. A few days later, I received a reply that “Yes, X Company does have an ethics officer, a lawyer, and, in fact, a whole ethics staff, but corporate policy prevents releasing any information about them.”

Welcome to “decoupling” — the practice of separating the form of ethical compliance from its substance. Some examples include requiring that employees receive “ethics training”; issuing reports and codes of conduct; filing compliance reports; conflict of interest disclosure for publications and presentations; whistle-blowing legislation; and good PR.

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Study Finds Teeth Stain More Permanently From Coffee Than Tobacco

A recent study, published in the *Journal of the American Dental Association*, evaluated the stain removal ability of toothbleaching and simulated toothbrushing after coffee and cigarette smoke staining. In addition, researchers determined the enamel susceptibility to restaining.

Using a colorimeter to determine the baseline color of 40 bovine labial enamel surfaces, researchers immersed half of the samples in coffee and exposed the other half to cigarette smoke in a smoking machine, then evaluated the stain removal ability of toothbleaching and simulated toothbrushing after the coffee and cigarette smoke staining.

According to the report, both staining procedures resulted in similar discoloration.

“The specimens stained with coffee and cigarette smoke showed a significant reduction in color change after bleaching” the authors wrote, but only the cigarette smoke-stained samples showed significant color reduction from toothbrushing.

The authors concluded that 6 percent hydrogen peroxide at-home bleaching removed both coffee and cigarette smoke staining. However, restaining potential was greater for the tooth surfaces stained with coffee than for those stained with cigarette smoke, regardless of the removal method used. Finally, authors wrote, continued frequent consumption of coffee can increase the staining susceptibility of enamel.

See the full report in the *Journal of the American Dental Association*, vol. 143:5, May 2012.





Why Gum Disease Is More Common With Old Age

New research from Queen Mary, University of London, in collaboration with research groups in the United States, may elucidate the reasons behind deteriorating gums as we age.

According to the study, published in *Nature Immunology*, the worsening of gum health, common with aging, is associated with a drop in the level of a chemical called Del-1.

In the study's abstract, authors wrote that aging is "linked to greater susceptibility to chronic inflammatory diseases, several of which, including periodontitis, involve neutrophil-mediated tissue injury." The authors reported finding that "aging-associated periodontitis was accompanied by lower expression of Del-1, an endogenous inhibitor of neutrophil adhesion dependent on the integrin LFA-1."

According to a news release from the uni-

versity, authors believe understanding more about Del-1 and its effects on the body's immune system could help in the treatment or prevention of serious gum disease.

The study compared gum disease in young and old mice and found that an increase in gum disease in the older animals was accompanied by a drop in the level of Del-1, a protein known to restrain the immune system by stopping white blood cells from sticking to and attacking mouth tissue.

Mice that had no Del-1 developed severe gum disease and elevated bone loss, and researchers found unusually high levels of white blood cells in the gum tissue, the news release said.

When they treated the gums of the mice with Del-1, the number of white blood cells dropped, and gum disease and bone loss were reduced.

Source: Published online March 25, 2012, *Nature Immunology*. For more information, visit nature.com/ni/journal/v13/n5/full/ni.2260.html

Filling Composite Kills Bacteria, Regenerates Teeth

According to the University of Maryland, a team of scientists at its school of dentistry has developed the first cavity-filling composite that kills harmful bacteria and remineralizes teeth.

Rather than just limiting decay with conventional fillings, Huakun Xu, PhD, MS, director of the Division of Biomaterials and Tissue Engineering in the school's Department of Endodontics, Prosthodontics and Operative Dentistry, said the new composite is a revolutionary dental weapon to control harmful bacteria, which coexist in the natural colony of microorganisms in the mouth.

"Tooth decay means that the mineral content in the tooth has been dissolved by the organic acids secreted by bacteria residing in biofilms or plaques on the tooth surface. These organisms convert carbohydrates to acids that decrease the minerals in the tooth structure," Xu said in a news release from the university.

After a dentist drills out a decayed tooth, the cavity still contains residual bacteria and, according to Xu, it is not possible for a dentist to remove all the damaged tissue, hence the importance of neutralizing the harmful effects of the bacteria.

The research team has also built antibacterial agents into primer used first by dentists to prepare a drilled-out cavity and into adhesives that dentists spread into the cavity to make a filling stick tight to the tissue of the tooth. "The reason we want to get the antibacterial agents also into primers and adhesives is that these are the first things that cover the internal surfaces of the tooth cavity and flow into tiny dental tubules inside the tooth," Xu said.



Impact of Water on Fluoride Content of Prepared Infant Foods and Drinks

A team of researchers recently conducted a study to measure the fluoride (F) content of infant foods and drinks requiring reconstitution with liquids prior to consumption and determine the impact of water F concentration on their F content, as consumed, by measuring F content before and after preparation.

Using 58 infant powdered formula milks, dry foods, and concentrated drinks prepared with deionized water, nonfluoridated and fluoridated water, the authors of the study found some infant foods/drinks, when reconstituted with fluoridated water, may result in a F intake in infants above the suggested optimum range (0.05–0.07 mg F/kg body weight).

“Although some nonreconstituted infant foods/drinks showed a high F concentration in their dry or concentrated forms, the concentration of F in prepared foods/drinks primarily reflected the F concentration of liquid used for their preparation,” the authors wrote.



According to the report, the F concentrations of drink samples were measured directly using a fluoride-ion-selective electrode after addition of TISAB III, and food samples and formula milks measured indirectly by an acid diffusion method.

“Further research is necessary to determine the actual F intake of infants living in fluoridated and nonfluoridated communities using reconstituted infant foods and drinks,” the researchers concluded.

Source: Community Dentistry and Oral Epidemiology, first published online April 23, 2012.

Study: Saliva Test to Detect Oral Cancer

A Michigan State University surgeon is teaming up with a dental benefits firm on a clinical trial to create a simple, cost-effective saliva test to detect oral cancer, a news release said. The development of such a test would be a breakthrough capable of improving screening and resulting in fewer people dying of the world's sixth-most common cancer.

Lead investigator on the project, Barry Wenig, a professor in the College of Human Medicine's Department of Surgery, is working with a Michigan research and data institute to compile study data and recruit dentists. According to the news release, the study will enroll 100–120 patients with white lesions or growths in their mouths and tonsil areas to test as part of the clinical trial.

The researchers will look for specific biomarkers previously identified by researchers at the University of California, Los Angeles; the biomarkers have been

shown in studies to confirm the presence of oral cancer. By creating a simple saliva test that could identify the biomarker's presence, the news release said, physicians and dentists would know which patients need treatment and which could avoid unnecessary, invasive biopsies.

“Most white lesions are benign, so a majority of people who develop them are getting biopsies that are not needed,” Wenig said in the new release. “Conversely, a simple test would allow us to identify those patients with malignant lesions and get them into treatment quicker.”

Late detection of oral cancer has been linked to its poor survival rate.

“The key challenge to reduce the mortality and morbidity of oral cancer is to develop strategies to identify and detect the disease when it is at a very early stage,” he said.

Wenig is also collaborating with PeriRx, a Pennsylvania company that will sponsor upcoming trials with the Food and Drug Administration.



“A simple test would allow us to identify those patients with malignant lesions and get them into treatment quicker.”

BARRY WENIG

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Rare Facial Malformation's Genetic Pathway Discovered

Researchers recently identified a pair of defective genes that cause a rare congenital malformation syndrome that can make it impossible for the child to breathe or eat properly without reparative surgery.

The team of researchers at Seattle Children's Research Institute and their collaborators discovered two genes — *PLCB4* and *GNAI3* — in a genetic pathway that affects children with auriculocondylar syndrome (ACS), according to a study in the *American Journal of Human Genetics*.

Authors of the study described ACS as a rare, autosomal-dominant craniofacial malformation syndrome characterized by variable micrognathia, temporomandibular joint ankylosis, cleft palate, and a characteristic "question mark" ear malformation. In severe cases, children with ACS may require an immediate tracheostomy, feeding tubes, and extensive facial reconstructive surgery in order to eat and breathe properly.

Led by Michael L. Cunningham, MD, PhD, medical director of the Seattle Children's Hospital's Craniofacial Center, the study included sequencing the DNA of five children with similar facial features characteristic of ACS. The researchers used exome sequencing, selectively sequencing those regions of the patients' DNA believed to constitute the majority of disease-causing mutations, according to a news release from Seattle Children's.

Of the five cases studied, two of the parents did not have this condition but were carriers for the mutation.

According to Cunningham, the findings suggest these genes may also play a role in more common disorders of the jaw and ears.

"Now that we know the genetic pathway for ACS, we will be able to better identify and counsel people who have normal facial appearances but carry these genes, about the likelihood of passing on this mutation to their children," Cunningham said in the news release.

Dental Plaque Gives Clues About Ancient Diets

University of Nevada, Reno, researchers G. Richard Scott and Simon R. Poulson recently discovered that very small particles of plaque removed from the teeth of ancient populations may provide good clues about their diets.

According to the research, published in the *Journal of Archaeological Science*, Scott obtained 58 dental calculus samples from medieval and postmedieval skeletons from Vitoria, Spain, and a single sample from an Alaskan Inuit to test for stable carbon and nitrogen isotope compositions. After his first methodology led to varied results, Scott opted to send five samples of dental calculus to Poulson at the University's Stable Isotope Lab, hoping they may contain enough carbon and nitrogen to estimate stable isotope ratios.

"It's chemistry and is pretty complex," Scott said in a news release. "But basically, since only protein has nitrogen, the more nitrogen that is present, the more animal products were consumed as part of the diet. Carbon provides information on the types of plants consumed."

According to the news release, Scott said the common practice of using bone to conduct such research is cumbersome and expensive, requiring several acid baths to extract the collagen for analysis.

Scott said that although additional work is necessary to firmly establish this new method of using dental calculus for paleodietary research, the results of this initial study indicate it holds great potential.

See the research in the *Journal of Archaeological Science*, 39(5):1388, 2012.



Fosamax Gel Can Benefit Diabetic Patients With Periodontitis

In a recent study, published in the *Journal of Periodontology Online*, researchers found that alendronate gel can help diabetic patients who have periodontitis. Alendronate is a bisphosphonate commonly used as an oral medication to treat osteoporosis and is marketed under the name Fosamax.

Lead author A.R. Pradeep, MDS, from the Government Dental College and Research Institute in Bangalore, India, and colleagues found that placing 1 percent alendronate gel into periodontal pockets benefits patients with diabetes who have periodontitis.

According to the report, the researchers treated 70 intrabony defects with either 1 percent alendronate gel or placebo gel and recorded clinical parameters at baseline, two months, and at six months. Radiographic parameters were recorded at baseline and six months.

Mean probing depth reduction and mean periodontal attachment level gain was found to be greater in the alendronate gel group at both two months and six months, authors noted. In addition, the researchers reported finding significantly greater mean percentage of bone fill in the alendronate group than in the placebo group.

The 1 percent Fosamax gel can be used “to provide a new dimension in the periodontal therapy in the near future,” authors concluded.

Source: *Journal of Periodontology*, published online Jan. 20, 2012. Link: <http://www.joponline.org/doi/abs/10.1902/jop.2012.110292>.



Oral Robotic Surgery Successful for Oropharyngeal Cancer Patients

Transoral robotic surgery, a minimally invasive surgery technique, achieves excellent results in removing oropharyngeal squamous cell carcinoma, especially in patients with human papillomavirus (HPV), according to a recent study published in the March issue of *Mayo Clinic Proceedings*.

Researchers at the Mayo Clinic followed 66 patients with oropharyngeal cancer who underwent transoral robotic surgery. Every few months, patients underwent imaging studies, scans, and examinations to determine if the cancer had recurred.

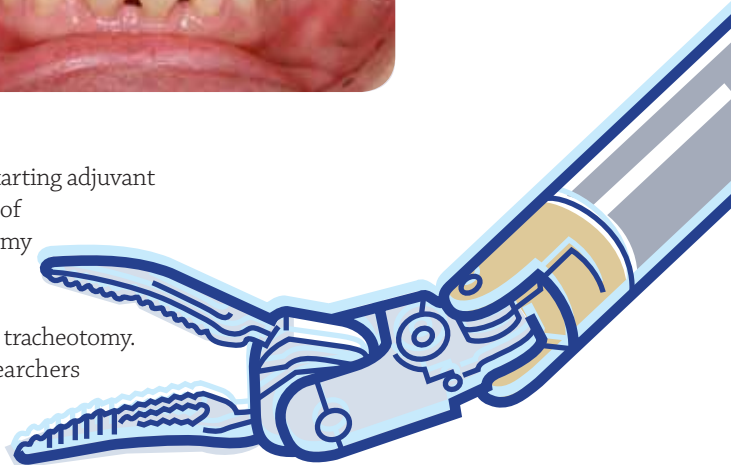
According to the report, patients were followed up for a minimum of two years. Because traditional surgery techniques to remove throat tumors can be traumatic, requiring cutting and reconstructing the jawbone, neck and tongue, researchers were also interested in patients' healing after robotic surgery.

Researchers found 97 percent of those patients able to eat orally within three

weeks after surgery before starting adjuvant therapy. Less than 4 percent of patients required a gastrostomy tube, which enables food to bypass the throat; and one patient required a long-term tracheotomy.

After two years, the researchers found that the patients' survival rate was greater than 92 percent, as good as rates for some other surgical and nonsurgical treatments for oropharyngeal cancer, the authors wrote.

“We were surprised that the cancer cure results were even better than the traditional treatments that we have been doing, but that is probably almost as much of a matter that these cancers are HPV-mediated for the most part, and they respond much better to treatment,” author Eric Moore, MD, a head and neck surgeon at Mayo Clinic in Rochester, Minn., said in a news release. “Importantly, the treatment preserved the patients' ability to swallow and their



speech performance was excellent.”

The study provides preliminary data illustrating that the robotic surgery is a viable treatment option, Moore concluded in the news release. Continuing research involving multiple medical centers will investigate transoral robotic surgery in a larger population of patients with oropharyngeal cancer.

Source: *Mayo Clinic Proceedings* 87(3):211-2, March 2012. Link: <http://www.mayoclinicproceedings.org/article/PIIS0025519612002017/fulltext>.



Ethical behavior is a function of the way leaders in the firm act, especially how they respond when challenged, not what they say.

DECOUPLING, CONTINUED FROM 555

A conspicuous example of ethical form over substance is the Sarbanes-Oxley laws enacted after the Enron scandal and requiring that higher-ups in organizations file papers saying they know what is going on in the firm. Not much teeth in that gesture from our legislative master decouplers. This has been a boost toward full employment for lawyers, but there is absolutely no evidence in almost 10 years that the trajectory of corporate opportunism in America has been bent.

Research in the field shows that ethical rules for organizations have these effects: increased formal appearance, increased cost, and increased employee and public cynicism. Ethical behavior is a function of the way leaders in the firm act, especially how they respond when challenged, not what they say.

Decoupling has become established in our legal system. The U.S. Sentencing Commission Organizational Guidelines (accessible on the Web) prescribe the formulas used in sanctioning businesses that break the law. (I believe the guidelines apply only to organizations with 10 or more employees.) The guidelines are used to calculate a “culpability score” that drives the size of the fine. All organizations start with a base score of five points against the organization, and have points added or subtracted based on circumstances.

The base culpability score can double for large firms. Previous bad faith or criminal activity increase the penalty. If there has been an adjudication for similar misconduct during the past 10 years, add one point; if the firm violates a standing judicial order or injunction add either one or two points.

On the other hand, if the organization has an ethics compliance program, subtract three points. Firms with repeat violations of court injunctions can have that penalty removed by showing that they had an ethics compliance program — even when per definition that program failed. If the firm cooperates in the investigation, it gets another two-point bonus. That comes pretty close to letting the form of ethics compliance erase the negative effect of violating the intent of ethical (legal) guidelines.

The Nub:

① Decoupling form from substance in ethics does not promote moral excellence.

② Decoupling form from substance in ethics promotes cynicism.

③ Codes, pronouncements, and training are insufficient evidence of commitment to a moral culture.

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*.

UPCOMING MEETINGS

2012

Sept. 30–Oct. 3	National Primary Oral Health Conference, La Jolla, Calif., nnoha.org/conference/npohc.html
Oct. 18–23	ADA 153rd Annual Session, San Francisco, ada.org
Oct. 26–28	California State Association of Endodontists biennial meeting, Newport Beach, Calif., 415-577-2760
Nov. 4–10	U.S. Dental Tennis Association, Tuscon, Ariz., 800-445-2524 or dentaltennis.org

2013

Feb. 7–9	20th anniversary Conference and Exhibition, Academy of Laser Dentistry, Palm Springs laserdentistry.org/
April 7–13	U.S. Dental Tennis Association, TOPS'L Resort, Destin, Fla., 800-445-2524 or dentaltennis.org
Oct. 31–Nov. 5	154th Annual Session, New Orleans, ada.org/session
Nov. 3–9	U.S. Dental Tennis Association, Big Island, Hawaii, 800-445-2524 or dentaltennis.org

To have an event included on this list of nonprofit association continuing education meetings, please send the information to Upcoming Meetings, CDA Journal, 1201 K St., 16th Floor, Sacramento, CA 95814 or fax the information to 916-554-5962.



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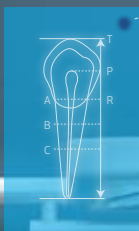


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VIRTUAL DENTAL HOME

PAUL GLASSMAN, DDS, MA, MBA

GUEST EDITOR

Paul Glassman, DDS, MA, MBA, is a professor of Dental Practice, director of Community Oral Health, and director of the Pacific Center for Special Care, Arthur A. Dugoni School of Dentistry in San Francisco
Conflict of Interest Disclosure: None reported.

It is now widely recognized that good oral health and access to basic dental services are not readily available to one-third or more of the U.S. population.¹⁻⁵ These underserved populations include low-income children and adults, minority racial and ethnic groups, people with disabilities and complex medical conditions, and dependent older adults. The reasons that many people in these groups do not access the traditional office-based dental care system are complex, but include issues with the cost of dental care, the separation between dental care system and the rest of the health care delivery system, education of oral health and other professionals, geographic distribution of sources of care, language and cultural barriers, and health literacy. The results of these issues are profound oral health disparities among the groups listed above.

Many people are realizing that new and innovative strategies will be needed to address the profound health disparities

among underserved populations. There are currently multiple models being developed and tested in the United States. Among them is a model that is the theme of this issue, the virtual dental home. This new model of care was developed at, and is being tested by, the Pacific Center for Special Care at the University of the Pacific, Arthur A. Dugoni School of Dentistry. It is based on the principles of bringing care to places where underserved people live, work, or receive social, educational, or general health services; emphasizing prevention and early intervention strategies; integrating oral health with general health, social and educational delivery systems; and using telehealth technologies to connect a geographically distributed, collaborative dental team with the dentist at the head of team-making decisions about treatment and location of services.

The first article in this issue describes the virtual dental home system, how it works, and preliminary results from a

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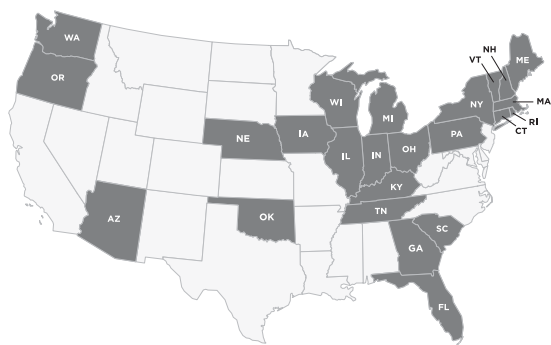
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statewide demonstration project. The next article is a review of the use of telehealth technologies in the delivery of dental services. Following that is an article describing the validation of a telehealth-enabled oral health examination. The next article describes the scientific basis for the prevention and early intervention strategies used in the virtual dental home system. The final article in this series describes the policy implications of the virtual dental home model.

The virtual dental home system has significant potential to improve oral health of currently underserved populations who now experience profound health disparities. It also has the potential to expand the scope of practice and patient population of dentists who are now able to interact with a geographically expanded group of patients and direct the activities of an expanded dental team. Readers of the articles in this issue will be able to increase their understanding of this model of care as well as the potential for other models to benefit vulnerable and underserved patients and oral health professionals alike. ■■■■

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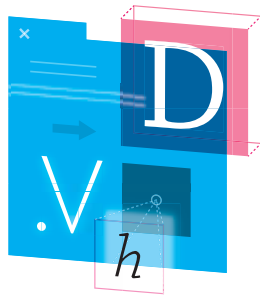


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The Virtual Dental Home: Bringing Oral Health to Vulnerable and Underserved Populations

PAUL GLASSMAN, DDS, MA, MBA; MAUREEN HARRINGTON, MPH; MAYSA NAMAKIAN, MPH; AND PAUL SUBAR, DDS, EDD

ABSTRACT Large and increasing oral health disparities in the U.S. population led the Institute of Medicine to call for expanded research and demonstration of delivery systems that test new methods and technologies. These new methods include delivering oral health services in nontraditional settings, using nondental professionals, expanded roles for existing dental professionals and new types of dental professionals, and incorporating telehealth technologies. The virtual dental home is a system that demonstrates the characteristics called for by the IOM.

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Conflict of Interest
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Conflict of Interest
Disclosure: None reported.

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Conflict of Interest
Disclosure: None reported.

The Pacific Center for Special Care at the University of the Pacific, Arthur A. Dugoni School of Dentistry (Pacific) is demonstrating a new model of care that uses the principles and techniques listed above. By creating a “virtual dental home” in sites throughout California, Pacific is delivering oral health services in locations where people receive educational, general health, and social services. Over the next several years this project will demonstrate the viability and effectiveness of a significant new approach to improving and maintaining oral health that can make a significant difference in the epidemic of dental disease for California’s vulnerable and underserved children and adults.

Poverty, Race, Disability, and Oral Health

The traditional office and clinic-based oral health delivery system is failing to reach a large and increasing segment of the population. The disparities in access and the resulting health disparities have been well-documented. The 2000 Report of the U.S. Surgeon General indicated that “Although there have been gains in oral health status for the population as a whole, they have not been evenly distributed across subpopulations. Profound health disparities exist among populations including: racial and ethnic minorities, individuals with disabilities, elderly individuals, and individuals with complicated medical and social conditions and situations.”¹

In 2011, the Institute of Medicine and the National Research Council of the National Academies of Science issued two reports on oral health, “Advancing Oral Health in America” and “Improving Access to Oral Health Care for Vulnerable and Underserved Populations.”^{2,3} Both of these reports describe the significant proportion of the U.S. population that do not have access to oral health services and the disparities in oral health among these groups.

A national analysis in 2010 by the Government Accountability Office (GAO) indicated that only about one-third of children enrolled in Medicaid received any dental service during the 2008 fiscal year.⁴ In California, oral health disparities are more severe than the national average, particularly among low-income and disabled populations. Just 25 percent of Medi-Cal beneficiaries reported a dental visit in 2007 and among pregnant women with Medi-Cal coverage only one in seven received dental services.⁵ Almost one-quarter of all children in California have never seen a dentist and about 40 percent of California black, Latino, and Asian preschoolers and approximately 65 percent of elementary schoolchildren in these groups need dental care.^{6,7} In 2011, only 22 percent of the total number of people eligible for Medi-Cal dental services received any service, a decrease of 8 percent from 2009. A decrease was expected for adults since most adults benefits were eliminated in 2009. However, there was also a decrease for children. In 2011, only 27 percent of eligible children received any dental service compared to 34 percent in 2009.⁸

The number of low-income children and adults and those with disabilities or complex medical conditions needing oral health services is rising dramatically. The U.S. Census reported in 2000 that

49.7 million people in the United States population had a long-standing condition or disability.⁹ They represented 19.3 percent of 257.2 million people who were aged 5 and older in the civilian noninstitutionalized population — or nearly one person in five. Many reports show that people with disabilities have more dental disease, more missing teeth, and more difficulty obtaining dental care than other members of the general population.^{1,10-12}

There are significant personal and economic consequences that result

IN CALIFORNIA, oral health disparities are more severe than the national average, particularly among low-income and disabled populations.

from the lack of oral health services for low-income and disabled populations. In California, approximately 6.3 million children, or two-thirds of all children in the state, suffer needlessly from poor oral health by the time they reach the third grade.¹³ Approximately 7 percent of California children missed school due to a dental problem in 2007, excluding time for cleaning or routine check-up.¹⁴ In 2007, there were more than 83,000 visits to California hospital emergency departments for preventable dental conditions.¹⁵

The Institute of Medicine, in its 2011 reports on oral health, called for expanded research and demonstrations of delivery systems that would test new methods and technologies including delivering oral health services in non-

traditional settings, using nondental professionals, expanded roles for existing dental professionals, the use of new types of dental professionals, and incorporation of telehealth technologies.^{2,3}

Health Homes

There is considerable interest and an expanding body of literature on improving health care provided to underserved populations through a “medical home” or “health home” model.¹⁶ A summary of the model and considerations in its implementation were thoroughly reviewed in a supplement to the journal *Pediatrics*.¹⁷ The foreword to that issue points out the degree to which the medical home model has been integrated in national health policy including “Healthy People 2010” and the “President’s New Freedom Initiative.”¹⁸ In general, the medical home model encompasses systems that provide:

- Care management over time;
- Health promotion activities;
- Access to technical medical services when needed; and
- In pediatric medical home models, there is also an emphasis on early intervention services.

In contrast to the medical home literature, there is a more recent and much smaller body of published works on adapting this model to improving oral health.^{19,20} In 2010, the American Academy of Pediatric Dentistry (AAPD) reaffirmed their “Policy on the Dental Home” in which they described the dental home as “inclusive of all aspects of oral health that result from the interaction of the patient, parents, nondental, and dental professionals.”²¹ Also in 2010, the AAPD reaffirmed its definition of the “dental home” in which they described it as “the ongoing relationship between the dentist and the patient, inclusive of all aspects of oral health care delivered in a

comprehensive, continuously accessible, coordinated, and family-centered way.

“Establishment of a dental home begins no later than 12 months of age and includes referral to dental specialists when appropriate.”²² Other models that describe the “medical home” or “health home,” now recognize that the important functions of these models can be performed by many different types of personnel and settings. In contrast, the AAPD definition emphasizes the role of the dentist in the dental home concept. While some people advocate for the idea that a dental home be centered in a dental office, the reality that most underserved populations do not visit dental offices on a regular basis leads to the conclusion that other solutions need to be developed to provide the essential elements of this model. There is growing recognition that other personnel and settings can be used to provide these essential elements.

Telemedicine/Teledentistry

During the same time the medical home or health home concept has evolved, there have been parallel advances in the use of distance technology to improve the health of populations at a distance from primary health care providers or specialists.²³⁻²⁵ The term “telemedicine” has been applied to the use of information technologies, primarily real-time videoconferencing and asynchronous store-and-forward systems to provide care remotely.²⁶ In California AB 415, which became law Jan. 1, 2012, replaced the term “telemedicine” with “telehealth” throughout California law and made other significant changes designed to facilitate use and adoption of telehealth technology.²⁷

As with the medical home concept, there are far fewer reports in the literature on the application of telehealth concepts to oral health. The emphasis of those reports on “teledentistry” has been on the use of these technologies as a means to

share records between dentists and dental specialists or as screening tools to determine the feasibility or urgency of need for dental treatment.²⁸⁻³⁵ However, there are a few reports in the literature that describe the use of telehealth technologies to facilitate geographically distributed, collaborative dental care.³⁶⁻⁴¹ The experience in medicine holds great promise for these technologies in improving the oral health of underserved populations through fostering and facilitating geographically distributed collaborative systems of care.

IN THE VIRTUAL DENTAL home, the RDHAP, RDH, or RDA collaborates with a dentist who makes diagnostic and treatment decisions to provide care.

The Virtual Dental Home

The Pacific Center for Special Care at the University of the Pacific, Arthur A. Dugoni School of Dentistry (Pacific) is demonstrating a new model of care. By creating a “virtual dental home” in a variety of sites throughout California, Pacific is delivering oral health services in locations where people live, work, play, go to school, and receive social services. The Pacific Center has partnered with a number of funding organizations to implement this demonstration project and bring much-needed oral health services to these underserved populations. These populations range from children in Head Start Centers and elementary schools to older or disabled adults in residential care settings or nursing homes.

What Is the Virtual Dental Home?

The virtual dental home is a community-based oral health delivery system in which people receive preventive and early intervention therapeutic services in community settings where they live or receive educational, social, or general health services. It utilizes the latest telehealth technology to link practitioners in the community with dentists at remote office sites.

This project is demonstrating that registered dental hygienists in alternative practice (RDHAP), registered dental hygienists working in public health programs (RDH) and registered dental assistants (RDA), can work in a team led by geographically distant dentists and can keep many people healthy in community settings by providing education, triage, case management, preventive procedures, and early intervention therapeutic services. Where more complex dental treatment is needed, the virtual dental home connects patients with dentists in the area.

This system promotes collaboration between dentists in dental offices and clinics and these community-based allied dental personnel. This system expands the use of the term dental home to include the entire geographically distributed, collaborative, telehealth-facilitated system of care. The virtual dental home provides all the ingredients of the health home, keeps dentists at the head of the dental care team, and most importantly, it brings much-needed services to individuals who might otherwise receive no care.

How Does It Work?

This model relies on the advanced training and community-based practice of a group of allied oral health professionals. In the virtual dental home, the RDHAP, RDH, or RDA collaborates with a dentist who makes diagnostic and treatment decisions to provide care. Technology

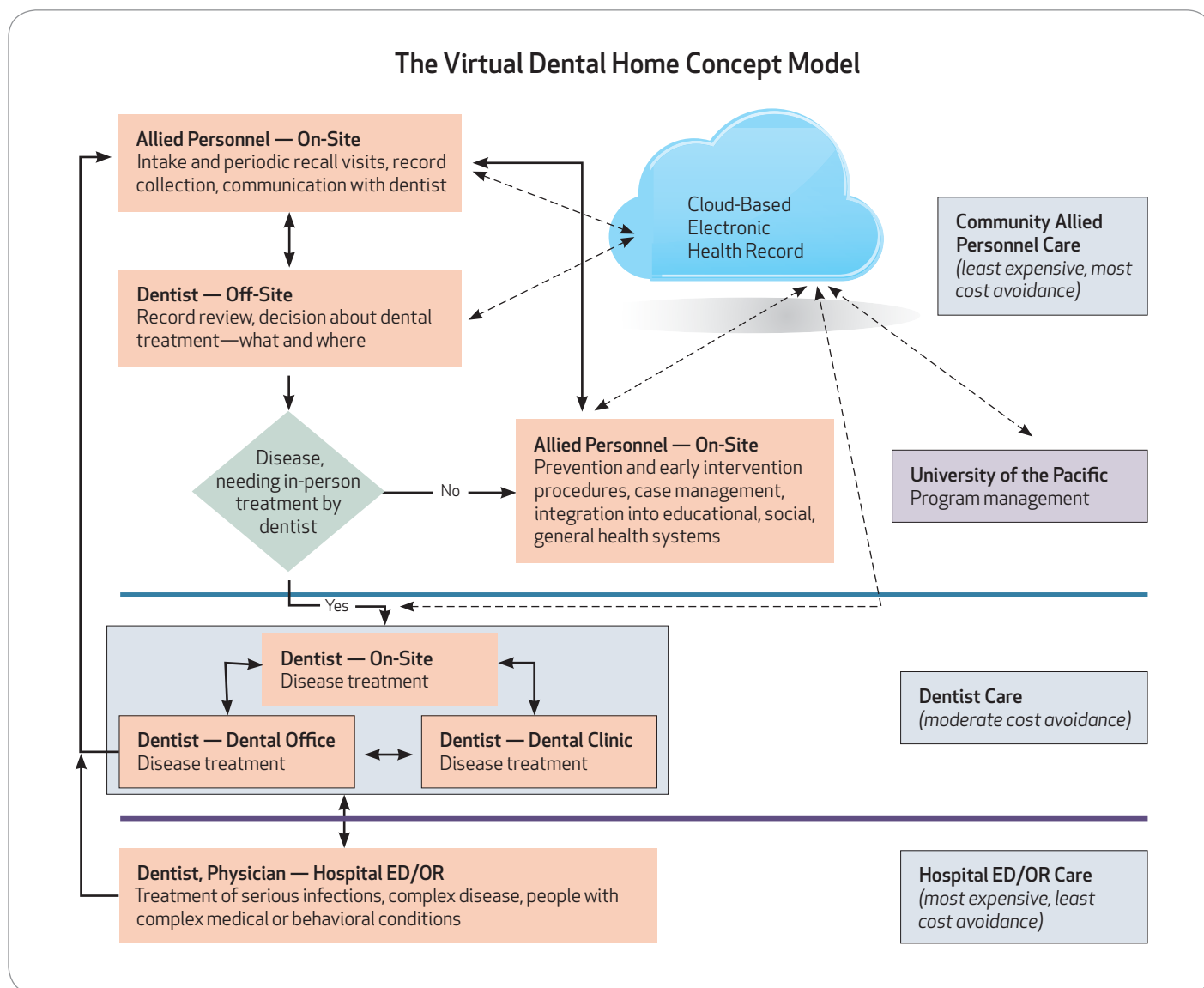


FIGURE 1. The virtual dental home concept model (Pacific Center for Special Care, University of the Pacific School of Dentistry, © 2012).

helps bridge the geographic gap between the community provider and dentist.

Equipped with portable imaging equipment and an Internet-based dental record system, the RDHAP, RDH, or RDA collects electronic dental records including radiographs, photographs, charts of dental findings, and dental and medical histories, and uploads the information to a cloud-based software system called Denticon where the records are reviewed by a collaborating dentist.⁴² The dentist reviews

the patient's information and creates a plan for dental treatment. The RDHAP, RDH, or RDA then carries out the aspects of the plan that can be conducted in the community setting under the general supervision of the dentist. The services included in the demonstration project are:

- Health promotion and prevention education;
- Dental disease risk assessment;
- Preventive procedures such as application of fluoride varnish, dental

sealants and for dental hygienists, dental prophylaxis and periodontal scaling;

- Placing carious teeth in a holding pattern using interim therapeutic restorations (ITR) to stabilize patients until they can be seen by a dentist for definitive care; and

- Tracking and supporting the individual's need for and compliance with recommendations for additional and follow-up dental services.

It should be noted that "interim

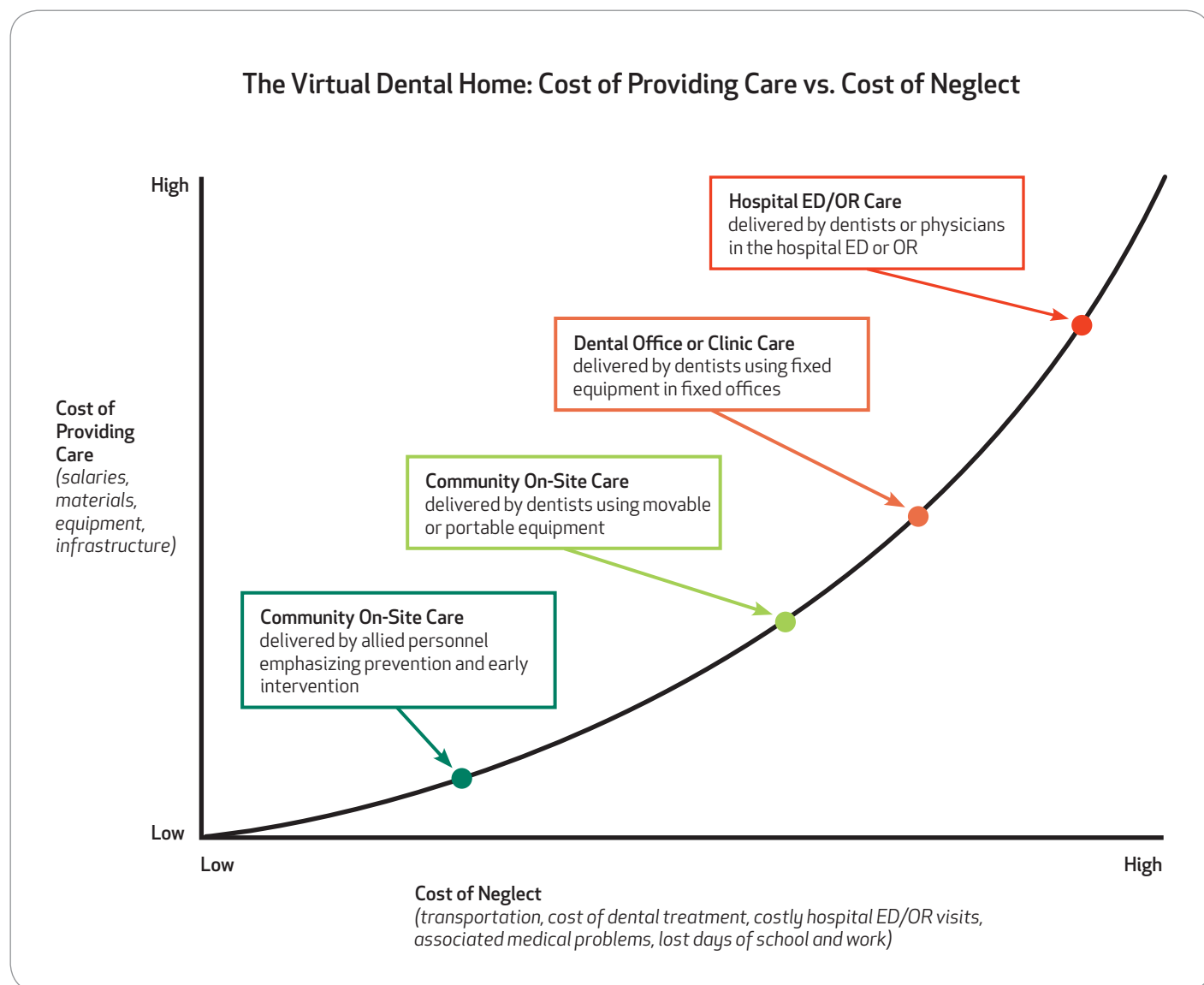


FIGURE 2. The virtual dental home: cost of providing care versus cost of neglect (Pacific Center for Special Care, University of the Pacific School of Dentistry, © 2012).

therapeutic restoration” is the term developed by the American Academy of Pediatric Dentistry in its “Policy on Interim Therapeutic Restorations” (ITR).⁴³ As described in that document, this term is used to describe the technique referred to more broadly in the literature as atraumatic restorative technique (ART), which involves removal of superficial caries using hand or slow-speed rotary instruments and placement of glass-ionomer restorative material. The new term, ITR,

is used to emphasize the provisional nature of the restoration. Allied dental professionals in the virtual dental home demonstration project are placing ITRs under the general supervision of dentists in a health workforce pilot project (HWPP) authorized by the California Office of Statewide Planning and Development (OSHPD).^{44,45} In the virtual dental home demonstration project, the technique consists of using hand instruments only to remove soft debris and superfi-

cial caries and obtain clean and sound margins with subsequent placement of glass-ionomer restorative material.

The RDHAP, RDH, or RDA refers patients to dental offices for procedures where a dentist has determined that the skills of a dentist are required. When such visits occur, the patient arrives with health history and consent arrangements completed, a diagnosis and treatment plan already determined, preventive practices in place and preven-



FIGURE 3. Capturing radiographs in the virtual dental home system.

tive procedures having been performed. The patient is likely to receive a successful first visit with the dentist as the patient's dental records and images have already been reviewed and preventive procedures performed. All of this adds up to a more successful dentist visit.

In some cases, the dentist may come to the community site and use movable or portable equipment to provide restorations or other services that only a dentist can provide. In either case, the majority of patient interactions and efforts to keep people healthy are performed by the RDHAP, RDH, or RDA in the community setting after a telehealth consultation with a collaborating dentist who makes diagnostic and treatment decisions and determines the best location for treatment, thus creating a true community-based dental home.

FIGURE 1 is a diagram illustrating the virtual dental home concept model. **FIGURE 2** is a diagram illustrating the cost of providing oral health services versus the impact of those services on the cost of neglect of dental disease. As illustrated in **FIGURE 1**, the emphasis of the virtual dental home model is the delivery of diagnostic, preventive, and early intervention services by allied dental personnel in community settings under general supervision of dentists who have reviewed patient records and determined a plan of treatment for that patient. These services, delivered under these circumstances, are the least costly methods for delivering diagnostic, preventive and early intervention services and, as illustrated in **FIGURE 2**, the most likely to drive down the cost

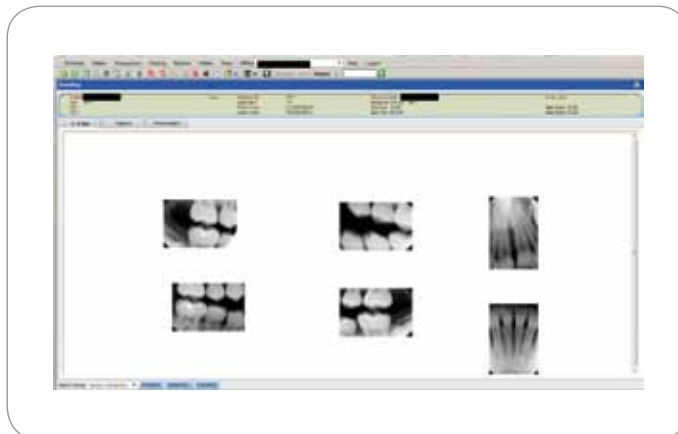


FIGURE 4. Radiographs displayed in the Denticon electronic dental record.

of neglect. Neglecting oral diseases until they require the restorative and surgical services that must be provided directly by dentists is more costly and less likely to impact the overall cost of neglect. As also illustrated in **FIGURE 2**, waiting until oral diseases are so advanced that they require visits to a hospital emergency department or operating room is the most expensive of the options displayed and does very little to lower the overall costs of neglecting oral diseases.

What Is the Current Status of the Project?

Phase 1 of this project is now completed and has included development of the project concept and design, and creation and implementation of all of the components and infrastructure for the virtual dental home system. The legal framework for the project has been created including agreements, consent forms, liability coverage, and Institutional Review Board (IRB) approval. The project technology hardware and software systems have been created or adapted for this system. Training materials and methods, site protocols, and operational guidelines have been developed. A study validating the ability of dentists to make treatment decisions after evaluating digital oral health records without an in-person examination has been completed.⁴⁶ Providers and sites in nine communities have been enlisted and trained. A Health

Workforce Pilot Project (HWPP) from the California Office of Statewide Health Planning and Development (OSHPD) was approved. The HWPP authorizes two new duties for allied dental personnel (RDHAPs, RDHs and RDAs). These are:

- Make the decision about which radiographs to take, if any, to facilitate an oral evaluation by a dentist; and
- Place interim therapeutic restorations (ITR).

What Are the Results From the First Phase of the Demonstration Project?

The virtual dental home demonstration program has clearly demonstrated the ability to establish a community-based, geographically distributed, collaborative, telehealth-facilitated system of care. There are nine sites currently operating under this model of care in California. Patients are being seen in community settings, dentists are reviewing records and determining the best course of treatment for the patient, preventive and early intervention care is being provided in the community, and patients with advanced disease requiring the services of a dentist are being referred to dental offices and clinics.

Patients enrolled in the virtual dental home project are being seen in a variety of settings: two elementary schools in low-income communities of Sacramento and San Diego County, a consortium of Head Start centers in San Francisco



FIGURE 5. Radiograph displayed in the Denticon electronic dental record.

and San Diego, residential facilities associated with three regional centers for persons with developmental disabilities, four long-term care facilities for vulnerable elders, and one community clinic.

FIGURES 3 AND 6 depict allied dental personnel capturing dental radiographs and photographs into a laptop computer. These images are uploaded to a secure Internet web server for review by a dentist. In **FIGURE 3** it is possible to see the simple and low-cost environment where allied personnel can set up portable equipment gather records and perform prevention and early intervention procedures. **FIGURES 4 THROUGH 8** depict sample screen shots of radiographs and photographs from this system.

Pacific has calibrated and trained eight RDHAPs and one RDA on the use of the



FIGURE 6. Capturing digital photographs in the virtual dental home system.

telehealth technology and the two new duties available under the HWPP. More than 750 patients have been enrolled in the virtual dental home project and have received a telehealth-enabled consultation by a dentist. Of these patients, almost 40 percent are children, 24 percent are adults living in rural or low-income communities, 17 percent are patients in long-term care facilities, and 15 percent are disabled adults living in residential care settings. The RDHAPs have provided more than 300 prophylaxes for both children and adults and more than 500 applications of fluoride varnish. These allied dental personnel have successfully placed more than 170 ITRs. Dentists have determined that almost half of the patients seen to date can be kept healthy through the services of the allied dental personnel performing preventive and early intervention services in the community. The other half are being referred to dental offices or clinics for the services only dentists can provide.

The virtual dental home system has

integrated oral health services into the activities of institutions such as preschools, elementary schools, group homes and long-term care facilities. This begins the process of normalizing daily oral care and emphasizes the importance of oral health. Feedback from allied dental personnel and staff at virtual dental home sites indicates that staff, caregiver, and parent education is occurring as community-based oral health professional and oral health activities become part of the fabric of these institutions. The consequence is an increase in dental literacy and increased willingness to comply with referrals, daily oral hygiene practices, and the role of nutrition in oral health.

New Roles for the Dental Team

The virtual dental home project is demonstrating the value of expanding the roles of all members of the dental team and training them to work in a new and unique system of care. Dentists' roles are expanded as they learn to work with a geographically distributed team of allied dental personnel and use telehealth technology to evaluate patients, make treatment decisions, and communicate with the dental team. Dentists in this project are also able to manage and

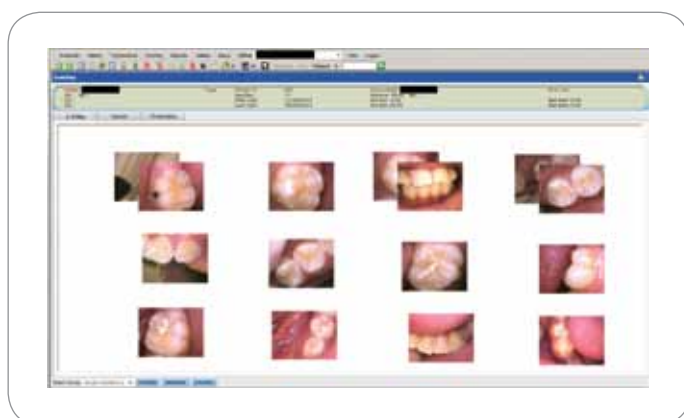


FIGURE 7. Digital photographs displayed in the Denticon electronic dental record.



FIGURE 8. Digital photograph displayed in the Denticon electronic dental record.

provide care for an increased population of patients through these expanded dental teams. Many of the patients these dentists are now serving would not have received any dental services at all without this community-based system of care.

The role of allied dental personnel is also expanded as they work in a geographically distributed team, perform procedures under remote general supervision of dentists, and communicate with dentists and other members of the team using telehealth technology. Allied dental personnel are also expanding their roles as they perform case management activities, work to integrate oral health services into the fabric of social, educational, and general health systems, and function as an integral part of a geographically distributed, telehealth-enabled dental home, one aspect of the "health home."

What Are the Expected Long-Term Outcomes of This Project?

The virtual dental home project is demonstrating a new system of care that is more likely to improve oral health of underserved and vulnerable populations at a lower cost than other systems of care. The demonstration project has located allied dental personnel in community sites where underserved children and adults receive educational, social, and general health services. It has expanded the role and reach of dentists and allied dental personnel. It has established telehealth-enabled collaboration and communication systems that allow dentists to work and communicate with geographically distributed allied personnel to create a virtual dental home for underserved populations. It is now allowing allied dental personnel to provide education, triage, case management, preventive procedures, and interim therapeutic restorations in these community locations under

general supervision of dentists. The data collected from this demonstration will support regulatory and reimbursement change needed to allow and facilitate spread of the model. There are indications that the next several years of this project will demonstrate the viability and effectiveness of a significant new approach to improving and maintaining oral health of underserved populations that can make a significant difference in the epidemic of dental disease for California's vulnerable children and adults. ■■■■

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Timothy G. Giroux
DDS/Broker

DELTA: Where do we go from here?

My last article discussed why the Delta policy is worse than originally believed and how it possibly affects more patients in the "Premier only" practices than we thought. I believe the new policy should open our eyes to the reality of our relationship with Delta Dental. Delta was originally formed by dentists back in 1950-1960 with an intent to try to balance quality patient care with reasonable fee schedules.

Now, Delta is acting no differently than any "for profit" organization, slashing payments to its providers in a stealthy fashion with this latest policy change.

As a group and an organized society, dentists have always been concerned about "anti-trust" suits while addressing these types of issues with insurance providers. If we attack this problem from a patient's rights and patient's freedom perspective, we will not need to worry about this "anti-trust" threat any longer. My proposed "Patient's Freedom of Choice Dental Insurance Act" should demand the following:

1. Patients are free to take their dental insurance plan or fee schedule to any provider they wish and the insurance company WILL pay the provider directly. (This Currently does not happen with Delta or Blue Cross) The patient has the choice to make up the difference with the provider if the provider's fee schedule is higher.
2. Dentists and patients are free to negotiate any fee schedule or payment arrangement directly with the provider. Dentists are no longer forced to collect pre-arranged payments under threat of "insurance fraud" if they choose not to collect the entire "co-pay". (Of course, the insurance companies can continue to have arrangements with providers who agree to the fee schedule. In this case, patients can still get a list of providers who agree to the schedule.)
3. Remove the punitive language towards dentists in the insurance contracts.
4. Providers should have the freedom to charge whatever they desire and let the patient decide on the type of care the patient desires and who should deliver that care.

Insurance companies claim that costs will increase if patients have more freedom with their insurance plans and begin utilizing them more. I say, SO BE IT!!! Whose side are we on anyway? Don't we want patients to seek out care? I believe that under-utilization of dental insurance is still primarily due to patient's fear of dentistry. The insurance companies limit their financial exposure two ways: (1) through the fee schedule, and (2) by imposing a maximum annual benefit per patient. They are covered on every angle. This maximum benefit has not kept up with inflation for more than 30 years, making the current coverage practically a joke!!! The entire annual allowance can almost be used by a single molar endo procedure! Instead insurance should be simply viewed as a sort of "medical savings account" that will help defray some of the costs of dental care.

Delta can certainly cut its costs by eliminating its ridiculous audit process. Again, our proposed "Patient Freedom of Choice Dental Act", designed to encourage patient's rights will eliminate the necessity of the audits. This is not a collective threat, just common sense.

Timothy G. Giroux, DDS is currently the Owner & Broker at **Western Practice Sales** (westernpracticesales.com) and a member of the nationally recognized dental organization, ADS Transitions. You may contact **Dr Giroux at: wps@succeed.net or 800.641.4179**

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NEW LISTING - \$1,100,000 - This office does it all! General Dentistry / Specialty Practice in Sacramento, Sacramento County, Northern California, with two (2) suites, one consists of general dentistry, the other does Specialty work. Nine (9) total operatories, six (6) equipped, three (3) plumbed, not equipped, with sterilization room, adjustment lab, x-ray room, dark room, reception area, staff lounge, private office, and storage room. Digital xrays, paperless office. Member of most PPO/HMO plans, large monthly cap checks.

NEW LISTING - \$450,000 - General Dentistry Practice in North San Diego County, Southern California with five (5) operatories, sterilization room, adjustment lab, dark room, reception area, staff lounge, and business office. Located in a professional building. Established over 37 years, this practice refers out all specialty work. Room to grow!

\$1,160,000 - General Dentistry Practice in North Orange County, Southern California with five (5) operatories, fully equipped, sterilization room, adjustment lab, dark room, staff lounge, business office, private office. Practice has been established for 47 years. **In Escrow.**

PRICE REDUCTION - \$4,500,000 - Implant Practice in Orange County, Southern California. This is a large, state-of-the-art practice with an in-house, full-service lab, private office, call center, and much more all located in a beautiful professional building.

\$430,000 - Prosthodontic Practice in Walnut Creek, Contra Costa County, Northern California with three (3) operatories, fully equipped, two-desk laboratory, administrative office, and private office near a retirement community. Doctor retiring, 28 years in the same location.

\$120,000 - General Dentistry Practice in Rancho Cucamonga, San Bernardino County, Southern California, with three (3) operatories, sterilization/lab combo, reception room and much more in a busy retail center. Practice has been in business over 20 years. Call our office for more information.

\$80,000 - Dental Leasehold Improvements and Equipment in Lake Forest, Orange County, Southern California with four (4) operatories, sterilization room, reception room, staff lounge, and private office in a retail center with plenty of foot traffic.

\$300,000 - General Dentistry Practice in Brea, Orange County, Southern California, with four (4) operatories, includes equipment, sterilization room, private office in a shopping center near mall and freeway. **In Escrow.**

\$500,000 - General Dentistry Practice in South Orange County, Southern California with four (4) operatories, fully equipped, sterilization/lab combo, adjustment lab, staff lounge, private office, over 31 years of goodwill, doctor retiring.

NEW LISTING - \$650,000 - General Dentistry practice in North Orange County, Southern California with six (6) operatories, \$13k cap checks/union per month, 20 years in same location. Call our office for more information.

PRICE REDUCTION - \$300,000 - General Dentistry Practice in Los Alamitos, Orange County, Southern California with seven (7) operatories, sterilization room, wet lab, business office, private office, staff lounge. Located on a busy street with plenty of frontage.

\$175,000 - Leasehold Improvements in Pasadena, Los Angeles County, Southern California with six (6) Adec Chairs/Lights in a great part of town. Contact our office for more information.

PRICE REDUCTION - \$675,000 - Dental Leasehold Improvements/Equipment and Real Estate in Santa Ana, Orange County, Southern California with seven (7) total operatories, five (5) equipped, two (2) plumbed, not equipped. Also includes sterilization area, adjustment lab, dark room, staff lounge, business office, and private office. Open floor plan that would be a great set-up for GP or Specialty practice with soothing neutral colors. A great opportunity to own real estate in Orange County. Near Western Medical Center.

\$450,000 - General Dentistry Practice in La Verne, Los Angeles County, Southern California with four (4) operatories, private office, staff lounge, sterilization/lab combo, adjustment lab, x-ray room, dark room, reception area in a retail center. Over 33 years of Goodwill. **In Escrow.**

\$225,000 - General Dentistry Practice in San Juan Capistrano, South Orange County, Southern California with three (3) operatories, sterilization room, adjustment lab, 2 x-ray rooms, staff lounge, private office in a business complex. 31 years of goodwill, doctor is retiring. **In Escrow.**

\$80,000 - Dental Leasehold Improvements/Equipment in Diamond Bar, Southern California, with four (4) equipped operatories, sterilization room, lab, located in a strip center, beautiful view of mountains. Great start-up opportunity for the right price.

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Using Telehealth Technologies to Improve Oral Health for Vulnerable and Underserved Populations

PAUL GLASSMAN, DDS, MA, MBA; MICHAEL HELGESON, DDS; AND JENNY KATTLOVE

ABSTRACT Telehealth refers to the use of technology to provide health care at a distance. The important and increasing role of telehealth in the delivery of health care has been recognized for several decades. Although there are fewer reports on the use of telehealth to deliver oral health services, evidence is emerging that these technologies can enhance the ability of the oral health delivery system to reach vulnerable and underserved populations.

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Conflict of Interest
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Several terms have been used to describe the use of technologies that facilitate interaction among patients and health care providers in geographically separated locations. Much of the literature uses the terms “telemedicine” to describe these interactions. In the last decade, the use of these technologies in dentistry has been referred to as “teledentistry.” More recently, these terms have been combined and referred to collectively as “telehealth.”¹

The important and increasing role of telehealth in the delivery of health care has been recognized for several decades. The California HealthCare Foundation in a 2008 report, “Telemedicine in California: Progress, Challenges, and

Opportunities,” reviewed the history and use of telemedicine nationally and in California.² The report described the use of telemedicine technologies to deliver health services in state prisons through regional service delivery mechanisms centered at the University of California, Davis, in outreach systems managed by the Veterans Administration, in outreach managed by rural health centers, and for use in diagnosis and treatment of a wide variety of health conditions.

Delivery of health care using telemedicine technologies is recognized by the federal government as a “cost-effective alternative to the more traditional face-to-face way of providing medical care” due to the ability to provide earlier diagnosis-

tic and preventive services and savings in transportation and other associated costs.³ The Center for Medicare and Medicaid Services (CMS) has indicated that “for purposes of Medicaid, telemedicine seeks to improve a patient’s health by permitting two-way, real-time interactive communication between the patient and the physician or practitioner at the distant site. This electronic communication means the use of interactive telecommunications equipment that includes, at a minimum, audio and video equipment.”³ CMS further stated that “states may reimburse the physician or other licensed practitioner at the distant site and reimburse a facility fee to the originating site. States can also reimburse any additional costs such as technical support, transmission charges, and equipment. These add-on costs can be incorporated into the fee-for-service rates or separately reimbursed as an administrative cost by the state.”

A 2008 report, “Meeting the Health Care Needs of California’s Children: The Role of Telemedicine,” by The Children’s Partnership, stated that “Quality health care no longer requires a health care provider and patient to be in the same room at the same time. With the advancement of information and communications technology (ICT), children and adults can receive high-quality health care from a distance through telemedicine. In fact, telemedicine is rapidly becoming a viable solution to meeting the health care needs of patients in rural and other underserved areas.”⁴

California was one of the leading states in adopting legislation to define and support the role of telemedicine in health care delivery. In 1996, California adopted the Telemedicine Development Act of 1996.⁵ This law put California in the position of national leadership on telemedicine policy and supported telemedicine

as a legitimate means of providing health care. The stated intent of the law was to support the idea that “The use of telecommunications to deliver health services has the potential to reduce costs, improve quality, change the conditions of practice, and improve access to health care in rural and other medically underserved areas.”

Common applications of telehealth include videoconferencing between a patient and health care provider for a consultation or among groups of patients or providers for education, support, and

CALIFORNIA WAS ONE of the leading states in adopting legislation to define and support the role of telemedicine in health care delivery.

care coordination; transmission of data, such as X-rays, photographs, video, and audio files; remote monitoring of vital signs and other health indicators; and Internet applications for patient education and disease management.³ Telehealth can occur in “real time,” where the patient and his or her provider are at one site communicating with another provider at another site simultaneously.⁶ Videoconferencing is the most common real-time telehealth interaction. Telehealth also occurs using “store-and-forward” methods. A store-and-forward interaction involves the transfer of data, such as an X-ray or a digital image, from an originating site to a distant site for review and consultation at a later time. Telehealth also involves the use of an ever-growing menu of software and technological devices, including

videoconferencing equipment; digital cameras; electronic clinical devices, such as digital stethoscopes; and disease management and health education software.³

Telehealth has been used in many applications including emergency and critical care, vision screening, mental health evaluation and treatment, telepharmacy, child abuse evaluations, and diagnosis and treatment of a variety of other health conditions.⁷⁻¹² A recent study demonstrated a 7 percent lower rate of rehospitalization for patients on home health care regimens who were followed using telehealth technologies versus those in a nontelehealth group.¹³ The savings from this intervention were substantial given an average cost of readmission of \$7,200 per person for the group of patients studied.

It has been argued that telehealth is a critical modality to address the severe shortages of health care available for large numbers of people in our society. In California, Medi-Cal has recognized the value of telehealth and reimburses providers who use videoconferencing to provide care. Medi-Cal also provides a facility and transmission fee to the originating site to compensate for the telecommunications and other costs associated with originating a telehealth visit. Medi-Cal also reimburses for store-and-forward applications related to teledermatology, teleophthamology, and specific types of teleoptometry services.¹⁴⁻¹⁶

Teledentistry

Application and use of telehealth in dentistry are not as well-developed as the use of telehealth technologies in other aspects of the health care delivery system. However, telehealth technologies have been available and used in the delivery of oral health services for quite some time. An early report on the use of technology to allow collaboration between distant dental providers described a system in use

by the U.S. Army to transmit still color images over a modem to allow periodontists to view healing after periodontal surgery without the patient having to travel long distances.¹⁷ A series of articles in the February 2000 issue of the *Journal of the California Dental Association* recognized the potential for telehealth but expressed significant caution about how these technologies would develop and be used.^{18,19} In spite of the widespread use of telehealth in medicine, there are far fewer reports in the literature on the application of telehealth concepts to the delivery of oral health services. The emphasis of those reports that are available on teledentistry has been on the use of these technologies as a means to share records between dentists and dental specialists or as screening tools to determine the feasibility or urgency of need for dental treatment.²⁰⁻²⁵

There are some more recent reports in the literature that describe the use of teledentistry to facilitate geographically distributed, collaborative dental care. An initiative based out of the University of Southern California demonstrated in 2003 that dentists were able to work with a dental hygienist at a remote location, to decide on preventive services that could be delivered by the hygienist at that location, and to facilitate referrals to the USC mobile dental clinic that delivered on-site dental services at a later date.²⁶ A 2004 report reviewed the available telehealth technologies and outlined the potential for using these technologies to foster collaboration between dentists and dental hygienists in order to reach and improve oral health of underserved populations.²⁷ A 2009 review of the uses of teledentistry described both real-time consultations and store-and-forward applications in use at that time.²⁸ In particular, a system was described in Minnesota where real-time videoconferencing was used to facilitate remote consultations

with dental specialists for temporomandibular disorders, orofacial pain, and oral medicine issues. A 2010 report described the use of teledentistry technologies to triage the need for a referral to a remote oral medicine hospital clinic.²⁹

In 2011, a report described the ability of endodontic specialists to remotely locate the canal orifice to assist general dentists in performing endodontic treatments.³⁰ A 2011 publication described an initiative developed by the Northern Arizona University (NAU) Dental

THE DATA
is stored on a secure
web server and
accessed using
a web browser from
any location.

Hygiene Department where affiliated practice dental hygienists can digitally acquire and transmit diagnostic data to a distant dentist for triage, diagnosis, and patient referral. Remote general supervision allowed these hygienists to provide preventive services permitted within the scope of their licenses.³¹ Although the potential for enhancing oral health care through the use of telehealth technologies is just beginning, these technologies hold great promise in improving the oral health of underserved populations through fostering and facilitating geographically distributed collaborative systems of care.

In 2011, the Institute of Medicine and the National Research Council of the National Academies of Science issued two reports on oral health, "Advancing Oral Health in America" and "Improving

Access to Oral Health Care for Vulnerable and Underserved Populations."^{32,33} These reports emphasize the significant oral health disparities among a number of underserved population groups and call for new methods and systems to address these disparities. There is specific mention of the role of telehealth as a component of future oral health delivery systems that can better reach and serve these populations.

Teledentistry in the California Virtual Dental Home Project

The virtual dental home project, directed by the Pacific Center for Special Care at the University of the Pacific Arthur A. Dugoni School of Dentistry and described in more detail in other articles in this issue, uses telehealth technologies to facilitate acquisition of records by allied dental personnel, including dental hygienists and dental assistants, in community sites and review of these records by dentists who are not on site. These dentists make decisions about the best course of treatment, and provide remote general supervision of the allied personnel performing preventive and early intervention treatment. The virtual dental home model is being demonstrated in schools, Head Start centers, residential facilities for people with disabilities, and long-term care facilities for dependent and elderly individuals. The techniques and illustrations of the equipment used for capturing telehealth records in a laptop computer in the virtual dental home system are also described in other articles in this issue.

The virtual dental home model uses a cloud-based software system called Denti-con.³⁴ The software has all the features of a locally installed dental patient management system. However, the data is stored on a secure web server and accessed using a web browser from any location.



FIGURE 1. Restorative chart from the Denticon Electronic Dental Record.

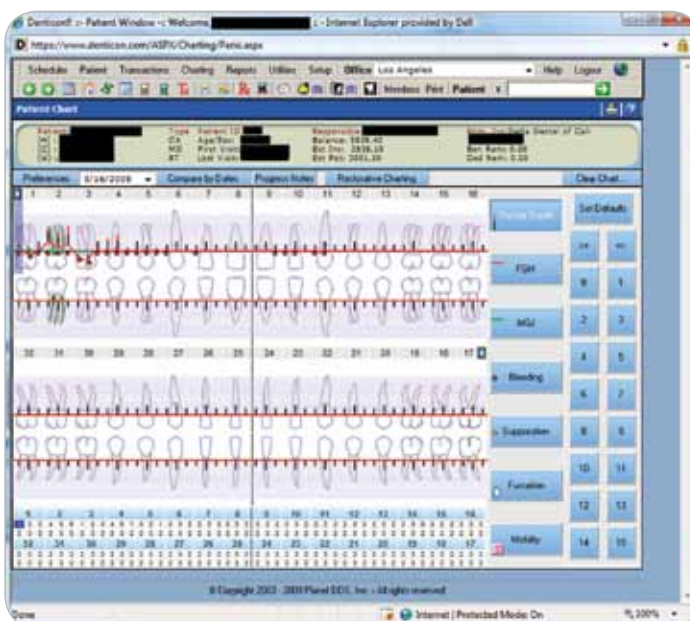


FIGURE 2. Periodontal chart from the Denticon Electronic Dental Record.

This cloud-based arrangement facilitates acquisition of records in one location and review in another. The entire system is fully HIPAA compliant and patient privacy is fully protected. Only users with authenticated credentials can access the system and upload or review records.

FIGURES 1 THROUGH 6 illustrate screen captures from some of the information available in the Denticon web-based software system. As illustrated in these figures, dentists who are reviewing these records have access to electronic restorative and periodontal charts, a system that records caries risk factors and assigns a caries risk score, a system for tracking patient status to facilitate case management, and high-quality radiographs and photographs. Also included in the records, but not illustrated here are treatment plans, patient ledgers, progress notes and other electronic health record (EHR) components. Communication between the allied personnel on-site at the community location, and the dentist off-site in a dental office or clinic, is facilitated by the electronic records described here, and enhanced by

email communication and phone calls that supplement the record review.

Once a dentist has reviewed the records and talked, if needed, with the allied personnel who are on-site, the dentist decides the best course of treatment for that patient. In the majority of cases, these individuals are kept healthy in the community location by preventive and early intervention activities of the allied dental personnel. In cases where the dentist determines that the individual has treatment needs that can only be addressed by a dentist, they are referred to and assisted with receiving treatment in a dental office or clinic. If the treatment is performed by the dentist who reviewed the virtual dental home records then that dentist already has access to records and is familiar with the treatment needs of the individual. If treatment is performed by another dentist, records can be exported from the system and made available. In either case, valuable time is saved at the dental office because diagnostic and preventive procedures have been performed and records are available.

Application of Teledentistry by Apple Tree Dental

Another example of the use of telehealth technology to facilitate oral health care is the delivery system from Apple Tree Dental (Apple Tree) in Minnesota. Apple Tree is a unique, nonprofit staff-model dental practice that currently operates five regional dental access programs in urban and rural areas of Minnesota. Telehealth technologies link special care dental clinics with on-site dental clinics at schools, Head Start Centers, group homes, assisted-living centers, nursing facilities, and other community sites for people facing physical, financial, and geographic access barriers.

The Apple Tree model links dental hygienists working under "collaborative agreements" with dentists. Apple Tree has demonstrated the ability for a dentist at a distant dental clinic to safely and accurately assess the permanent teeth of high risk children for sealant placement without the need for a face-to-face examination. Dentists made decisions using live videoconferencing, digital radiographs, Diagnodent readings, and high-resolution intraoral



FIGURE 3. CAMBRA risk assessment screen from the Denticon Electronic Dental Record.



FIGURE 4. Status tracker screen from the Denticon Electronic Dental Record.

video and still images. The decisions they made using the store-and-forward records closely matched the decisions made using live videoconferencing and those made after a second face-to-face examination.

Apple tree is now using oral health assessments and store-and-forward records collected in Head Start Centers and nursing homes and reviewed by off-site dentists to determine what treatment is needed and the best location for treatment of children and vulnerable adults in these locations. Approximately 70 percent of children in the Head Start Centers being served need only preventive services performed by the dental hygienist. For the 30 percent who need treatment by a dentist, this is provided by a dentist who comes on site with portable equipment. The same pattern is followed in the nursing home using Apple Tree's mobile dental office.

mendations." The report documents the use of and barriers to the spread of telehealth across the nation and proposes a model statute to optimize the use of telehealth in California.¹ The intent of the report was to propose a way to create parity between health services delivered using in-person methods with health services delivered using telehealth methods. The important determinant is whether the service was delivered effectively and not the technologies chosen by the provider to deliver the service.

The report identified multiple barriers to wider deployment of telehealth including confusing or contradictory definitions of telehealth, the uncertainty of payment for services, difficulties in developing and sustaining provider networks, the challenge of integrating technology among providers, and lack of training resources.

The most significant of these is the uncertainty about payment for telehealth services. If providers believe they cannot be paid for delivering services using telehealth technologies, they have little motivation to join telehealth-enabled provider networks or receive training in the use of telehealth technologies.

In 2011, based on the Center for Connected Health Policy's report, California Assemblyman Dan Logue (R-Lake Wildwood) introduced Assembly Bill 415, the Telehealth Advancement Act of 2011.^{35,36} Effective Jan. 1, 2012, this new law modernizes California's landmark Telemedicine Development Act of 1996 to reflect advances in the field since the original law's passage. It updates the definition of telehealth to reflect the broader range of services in use today, and allows all licensed health professionals in

Barriers and Solutions to Adoption and Spread of Telehealth

Even as the use of telehealth technologies is spreading in general health services and delivery of oral health services, barriers remain that are slowing down or blocking the wider-spread adoption of this method of delivering health care. The Center for Connected Health Policy, a nonprofit organization devoted to influencing policy to improve health care delivery in California through telehealth, issued a comprehensive report in 2011, "Advancing California's Leadership in Telehealth Policy A Telehealth Model Statute and Other Policy Recom-

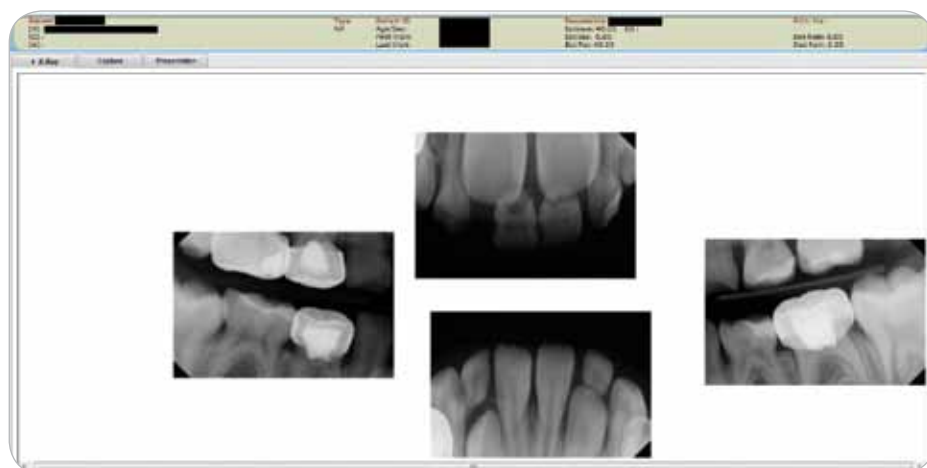


FIGURE 5. Radiographs from the Denticon Electronic Dental Record.

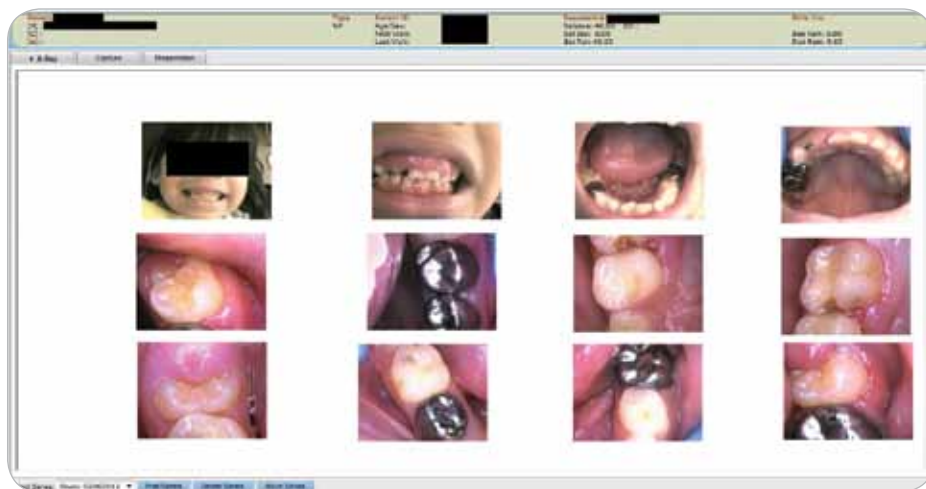


FIGURE 6. Photographs from the Denticon Electronic Dental Record.

California to engage in telehealth. Specific components of the legislation include:

- Replacing the outdated legal terminology of “telemedicine” with “telehealth” throughout California law. This change makes it clear that applications of telehealth technology to the delivery of oral health services are included in all aspects of the law. The law broadens the modalities that are included in telehealth to include multiple forms of electronic or distance communications and explicitly includes store-and-forward technologies in the definition. Telehealth, the new legal terminology, refers to the technology-enabled delivery of services, rather than a specific medical practice. This allows for a far broader range of telehealth services than the old law, and does not limit future telehealth technologies, because of its encompassing, forward-looking definition.

- Removing limits on the physical locations where telehealth services may be delivered. Under the old law, telemedicine appointments had to take place only in licensed health care facilities, such as hospitals or physician offices and Medi-Cal restricted telemedicine delivery to four types of licensed facilities only: hospitals, clinics, physician offices, and skilled nursing facilities. The new law removes limits on the locations for telehealth. This will allow for telehealth to be covered,

regardless of where it takes place. This can include patient care management programs that employ home monitoring devices, in-home patient medical appointments, and physician or dentist reviews of health data in any location in real time and using store-and-forward methods.

- Expanding the list of health professionals who can provide telehealth services to include all professionals licensed under the state’s healing arts statute.

- Removing a previous Medi-Cal regulation requiring providers to document a barrier to an in-person visit before a beneficiary could receive telehealth services, which was widely viewed by providers as a disincentive to its use.

- Removing a previous requirement that patients sign a separate, written, telehealth-specific consent form before any type of telehealth service could be delivered. Providers found that the written consent form stigmatized the use of telehealth, and created an unnecessary barrier to care. The new law replaces the written consent with a verbal consent that must be recorded in the patient’s record. This establishes parity between services provided in person, and those provided via telehealth.

While AB 415 clarified and improved many important areas of telehealth, it did not mandate that Medi-Cal or any other

payers reimburse providers for services delivered using telehealth technologies. It was primarily fiscal considerations that kept full parity in delivery and payment from being included in the law. However, there is increasing evidence that the use of telehealth in the delivery of health services will actually save scarce state resources as well as deliver better health care. For example, the Center for Connected Health Policy in a 2011 report, “Fiscal Impact of AB 415: Potential Cost Savings from Expansion of Telehealth,” has predicted that telehealth has the potential to reduce health care costs in the California Medi-Cal program by several hundred million dollars per year annually if telehealth is utilized to its fullest potential in treatment of cardiac disease and diabetes.³⁷

There is also reason to believe that the use of telehealth technologies can save scarce resources in providing oral health to underserved populations. The virtual dental home delivery model is demonstrating the ability to deliver more health per dollar spent than other methods when applied to the state’s most vulnerable populations. The emphasis on prevention and early intervention will have a significant impact on downstream “costs of neglect” for untreated dental disease such as increased costs for more complex dental treatment needed later on, cost of emergency-room visits, cost of care provided in hospital emergency departments and operating rooms, and lost days of work and school from dental pain and infection.

Future Advancement of Telehealth in Delivery of Oral Health Services

The history and recent advancements in the use of telehealth technologies to improve general health care and oral health care delivery, along with the recent legislation in California, point to an increasing awareness of the importance of these technologies. Given the large

general health and oral health disparities faced by many members of society and the difficulty many populations have accessing the traditional health care system, it is clear that telehealth will have an important and growing place in health care delivery. Demonstration projects, such as the virtual dental home project in California, are already illustrating the value of telehealth systems in addressing the chronic and severe oral health disparities faced by large number of people and the ability to do so in a way that can improve health and lower costs.

To fully realize the potential for telehealth to improve the oral health of vulnerable populations, policy and delivery system reforms are needed to ensure that telehealth delivered or enabled activities are reimbursed in parity with in-person activities that provide the same health service. What is also needed is the expansion of delivery systems that link geographically distributed provider teams and training of current and future providers to use telehealth technologies and work in these teams. New telehealth-enabled delivery systems will help ensure that vulnerable populations can gain access to the oral health care they need by extending the reach of dentists and other oral health providers to locations where they are needed most. ■■■■

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In-Person Versus “Virtual” Dental Examination: Congruence Between Decision-Making Modalities

MAYSA NAMAKIAN, MPH; PAUL SUBAR, DDS, EDD; PAUL GLASSMAN, DDS, MA, MBA;
ROBERT QUADE, PHD, MBA; AND MAUREEN HARRINGTON, MPH

ABSTRACT This study evaluated the agreement of a dentist’s conclusions reached through an in-person versus a virtual examination. The dentist determined whether a patient was healthy enough to be treated only by allied dental personnel in a community setting or whether the patient needed to be seen by a dentist. The study concludes that a virtual examination is a strong substitute for an in-person examination and validates the application of telehealth-enabled examinations.

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Disclosure: None reported.

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Conflict of Interest
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Conflict of Interest
Disclosure: None reported.

The Pacific Center for Special Care (the Center) at the University of the Pacific School of Dentistry is demonstrating a new model of care called the “virtual dental home.” This model uses telehealth technology to allow dentists to review records collected by allied dental personnel in community sites and use these records to make diagnostic and treatment decisions about the best course and location of treatment for patients. A component of this model is based on the ability of dentists to use these telehealth records to make these decisions.

Telehealth technologies have been available and used in the delivery of oral health services for quite some time. An early report on the use of technology to allow collaboration between distant providers described a system in use by

the U.S. Army to transmit still color images over a modem to allow periodontists to view healing after periodontal surgery without the patient having to travel long distances.¹ A series of articles in the February 2000 issue of the *Journal of the California Dental Association* recognized the potential for telehealth, but expressed significant caution about how these technologies would develop and be used.^{2,3} Now the field of telehealth has expanded and matured to the point where it is widely used and the potential to enhance the delivery of health services is widely recognized.⁴ In spite of the widespread use of telehealth in medicine, there are far fewer reports in the literature on the application of telehealth concepts to the delivery of oral health services. The emphasis of those reports that are available on “teledentistry” has been on

the use of these technologies as a means to share records between dentists and dental specialists or as screening tools to determine the feasibility or urgency of need for dental treatment.⁵⁻¹⁰ However, there are a few reports in the literature that describe the use of teledentistry to facilitate geographically distributed, collaborative dental care.¹¹⁻¹⁶ Although the potential for enhancing oral health care through the use of teledentistry is just beginning, these technologies hold great promise in improving the oral health of underserved populations through fostering and facilitating geographically distributed collaborative systems of care.

The University of the Pacific School of Dentistry (Pacific) offers a full array of dental services to patients with a range of physical, medical, and psychosocial considerations, including people with special needs and older adults. The Pacific Center for Special Care (the Center) at the University of the Pacific School of Dentistry has created best-practice models of, and advocates for, improved access to dental care for anyone with a special need, including people who have difficulty maintaining good oral health or accessing oral health services because of developmental, medical, physical, or social conditions. In the study described here, the Center evaluated the agreement between the conclusions an individual dentist reached on in-person and virtual examinations about whether a patient was healthy enough to be treated only by allied dental personnel in a community setting or whether the patient needed to be seen in person by a dentist. This decision was made using a list of allowable procedures that could be performed by allied dental personnel in the community setting.

For the purposes of this study, community settings included schools, nursing homes, or residential facilities. The

dentist's certainty on this decision was measured during both modalities of examination. Another factor considered was the urgency of needed dental care and if a patient needed to be seen in a dental office, how soon that visit should take place. Both examinations involved the dentist's review of digital records including medical and dental history, hard- and soft-tissue charting, photographs, and radiographs. In addition, the in-person examination included a visual examination of the patient using a mouth mirror and

THERE ARE A FEW reports in the literature that describe the use of teledentistry to facilitate geographically distributed, collaborative dental care.

dental explorer. The study involved three dentists, each seeing the same cohort of patients. For this reason, the study was also able to assess agreement and differences among the dentists' decisions.

In California, registered dental hygienists in alternative practice (RDHAP), registered dental hygienists working in public health programs (RDH) and registered dental assistants (RDA) who are participating in the virtual dental home program are able to provide the following services:

- Health promotion and prevention education;
- Dental disease risk assessment;
- Preventive procedures such as application of fluoride varnish, dental sealants and for dental hygienists, dental prophylaxis and periodontal scaling;
- Placing carious teeth in a hold-

ing pattern using interim therapeutic restorations (ITR) to stabilize patients until they can be seen by a dentist for definitive care. This procedure is currently authorized under a Health Workforce Pilot Project (HWPP) being conducted by the Center and approved by the Office of Statewide Health Planning and Development (OSHPD)^{17,18}; and

■ Tracking and supporting the individual's need for and compliance with recommendations for additional and follow-up dental services.

Dentists' decisions about whether a patient was healthy enough to be treated only by allied dental personnel in a community setting or whether the patient needed to be seen in person by a dentist was based on the dentist being calibrated to assume for the purposes of the study that they would be working with allied dental personnel who could perform the duties listed above in the community setting.

Methodology

This study took place at the University of the Pacific's Special Care Clinic (the Clinic). IRB approval was obtained and 29 adult patients with a variety of dental, developmental, medical, and psychosocial conditions, participated as a convenience sample. Two additional patients were seen for in-person examinations, but neither was seen for a follow-up examination and were therefore not included in the study. Each patient had a series of digital records collected and entered into the dental school's electronic health record system following normal dental school routines. They then received an in-person examination from each of three study dentists in which each dentist independently made three decisions:

■ Whether the patient's dental care needs could be adequately delivered in the community by an allied dental

professional performing the duties listed above as opposed to being seen in a dental office by a dentist. This was scored as a yes or no decision;

- The level of certainty the dentist felt about the decision described above. This decision was scored on a scale from 1 (not certain) to 10 (certain); and

- When a referral to a dentist's office was deemed necessary, the amount of urgency with which the patient needed to be seen was scored as a timeframe in terms of days, weeks, months or years.

The in-person examination was followed after at least three weeks by a virtual examination by each of the study dentists using the same patient's digital records. Twenty-five of the cases received a second virtual examination at least two weeks after the first virtual examination, for a total of 54 virtual exams for each study dentist. In these virtual examinations, each dentist was provided with the full set of digital records described above and was asked to make the same three decisions. Typically the records included radiographs, photographs, and charting. However, no radiographs were available for one patient due to cooperation difficulties, for either the direct or the virtual exams. Because the purpose of the study was to discover whether dentists' virtual decisions agreed with their in-person examination decisions, caution was taken to minimize the possibility of the dentists being able to link the digital records with the patients they had seen in person. Toward that end, all records were blinded, at least three weeks elapsed between each review, and the order in which the records were presented was scrambled.

Analysis was conducted for study dentists individually, comparing their in-person and virtual decisions. In addition their decisions were analyzed as a group, assessing the degree to which all three study dentists agreed.

Subjects

Thirty-one patients who were registered for an appointment at the clinic and who met the following criteria were chosen for the study:

- The patient was able to give consent to participate in the study on their own or it was possible to obtain consent for participation from their guardian/representative.

- The patient was being seen for an initial appointment at the clinic. If the patient was already a patient of the clinic

A FACULTY DENTIST supervised patient flow in the clinic and the collection of records and recruited and trained the three study dentists.

and had completed their initial appointment, then the patient's records were determined to be up-to-date and the patient had not had any dental treatment since collection of the most recent records. If the records were not up-to-date, then new records were collected.

- The patient was able to cooperate for collection of minimal records, including at least extra- and intraoral photographs.

Of the 31 patients who met these criteria, 29 finished the protocol and had an in-person examination and either one or two virtual examinations. Of these 31 patients, 14 were female and 17 were male. The patients ranged from 20 to 68 years of age with a mean age of 47. The patients had a variety of medical, developmental, and psychological conditions such as intellectual disabilities, cerebral

palsy, Down syndrome, autism, seizures, HIV disease, liver disease, neurologic disorders, stroke, and schizophrenia.

Personnel

A faculty dentist supervised patient flow in the clinic and the collection of records, and recruited and trained the three study dentists. The three study dentists were all general dentists on the faculty at Pacific. One had prior experience with special needs patients; the other two dentists had been in general private practice for several decades. Each dentist devoted one day per week to the study over the course of eight months (April to December 2010). Dental faculty members and dental students were engaged in collecting patient records following normal dental school routines. A registered dental assistant (RDA) recruited patients for the study, managed patient flow, collected digital intra- and extraoral photographs, and interfaced with the study dentists. The center's staff supervised the study and participants, analyzed data, and worked with an evaluation consultant to evaluate the data collected in the study.

Training

The Clinic faculty and staff reviewed the study protocols before the onset of the project. Detailed training for the study was provided to the RDA and the study dentists. The RDA received the following training:

- Use of the intraoral camera;
- Review of the clinic's electronic health record system (Axium);
- Review of the patient database and how and where to collect data; and
- Review of protocols, consent forms, evaluation questionnaire, and the system for setting up appointments with the three study dentists involved in the project.

The study dentists received the following training:

- Overview of the project;
- Description of dental services that can be provided in community settings by dental hygienists as described in the background section above;
- Review of the protocols for the study;
- Review of examination technique;
- Review of criteria for placement of interim therapeutic restorations (ITR);
- Use of the study evaluation questionnaire;
- Calibration on decision-making considering the scope of duties described above using case study examples; and
- Practice completing the evaluation questionnaire, and discussion of decision-making process and deviations among the dentists.

Patient Records

The faculty dentist or dental students collected a set of digital records including radiographs, charting, and medical and dental history and entered them into the school's electronic health record system as a normal part of patient intake. To complete patient records, the study RDA used the study laptop computer to capture extra- and intraoral photographs that were not part of normal patient records. The RDA followed a standard protocol to decide which photographs to take in order to depict the facial and lingual surfaces of anterior teeth, the occlusal surfaces of posterior teeth, and to visualize any other areas of concern. Once these procedures were accomplished, the patient record was said to be complete.

Equipment

The following equipment was utilized:

- A study laptop computer with intraoral camera;
- An extraoral point-and-shoot camera; and
- The dental school's electronic health record system (Axium).

Examinations

Following collection of initial patient records and prior to any treatment being provided, each patient received an in-person clinical examination by each of the three study dentists. The clinical examination consisted of a visual examination, use of a mouth mirror and dental explorer, and palpation if needed. Periodontal probing, which had previously been completed, was not redone. Instead, the study dentists relied on the probing records already in the dental

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school's electronic health record system. Following the in-person examination of each patient, the study dentists completed an evaluation questionnaire (FIGURE 1). The questionnaire results were entered onto a spreadsheet by the RDA.

In addition to the in-person examination, each patient had one or two virtual examinations. The virtual examination involved a dentist's review of the patient's digital records. Each study dentist independently conducted a virtual examination at least three weeks after the initial in-person examination. In this step, the study dentists reviewed the digital records and then completed the same evaluation questionnaire. The virtual examination was conducted twice for 25 patients, with at least three weeks between each such exam. The

RDA once again entered the data from the evaluation questionnaire into the data spreadsheet.

Examination times in minutes were recorded for each study dentist in both in-person and virtual exams.

Findings

Findings are presented for individual dentists, comparing each dentist's decisions following in-person and virtual examinations (intradentist findings), and for all three dentists compared to one another (interdentist findings). Of the 29 patients who completed the study protocol, 25 had an in-person examination plus two virtual examinations. Four patients had an in-person examination and one virtual examination. With three dentists reviewing each examination, there were a total of 162 virtual examinations.

Intradentist Findings:

Agreement Between In-Person and Virtual Examinations

In 87.0 percent of all virtual examinations, 141 out of 162 virtual examinations for 29 patients, the study dentist's judgment in the virtual exam about whether the patient could be treated in the community or required a visit to a dental office matched that same dentist's judgment in the in-person examination for that case. TABLE 1 shows the agreement between in-person and virtual examinations in the 25 cases for which there were two virtual exams conducted by each study dentist. Dentist A had the greatest congruence between judgments based on in-person and virtual exams, with judgments from both virtual examinations matching the judgments from the in-person exam for 22 of the 25 cases. Dentist B and Dentist C, had

Virtual Dental Home Demonstration Project Decisions Congruence Study Patient Evaluation

Date: _____

Reviewing dentist's name: _____

Study ID: _____

Amount of time spent on examination (minutes): _____

1. The following evaluation is based on

- ☐ In-person exam + digital records ☐ Digital records only

2. At this point, is it appropriate for the patient to be seen only in the community setting (as opposed to being seen in a dental office)?

- ☐ Yes ☐ No

3. How certain are you about your decision in question 2? (circle appropriate answer)

0	1	2	3	4	5	6	7	8	9	10
Not certain at all			Comfortable				Absolutely certain			

4. How urgent is it for the patient to be seen in a dental office?

- ☐ Patient should be seen in the next few days
- ☐ Patient should be seen in the next few weeks
- ☐ Patient should be seen in the next few months
- ☐ Patient should be seen within the year
- ☐ Patient does not need to be seen in a dental office – they can be seen again by a dentist in the future through a virtual consultation/examination

5. Please answer the following questions about the digital records you reviewed:

a. Were X-rays available for review?

- ☐ Yes ☐ No

b. How complete was the dental charting?

- ☐ Not present ☐ Partially completed ☐ Fully completed

c. Rate the quality of the virtual records as a basis for decision-making

- ☐ Excellent
- ☐ Good
- ☐ Adequate
- ☐ Insufficient for full interpretation (explain in comments section)
- ☐ Insufficient for any interpretation (explain in comments section)

6. Assuming that the patient can cooperate, could any ITRs be placed based on the study ITR criteria?

- ☐ Yes ☐ No

a. If **yes**, list the teeth number(s) where ITRs could be placed: _____

7. Comments (use other side if needed):

judgments from both virtual examinations matching the judgments from the in-person exam for 19 of the 25 cases.

Although all dentists had high agreement between the in-person examination and the virtual examinations, ranging from 76 percent agreement to 88 percent, not all the dentists came to the same conclusion on the second virtual exam as on the first. Dentist B, in particular, was more likely to have inconsistent conclusions from the two virtual exams. In each of the six cases in which Dentist B's findings in the virtual exam differed from those of the in-person examination, that dentist's conclusions in the virtual examinations differed from one another. This was true for only one case reviewed by Dentist A and two cases reviewed by Dentist C.

In the 25 cases the level of agreement between the virtual and the in-person examination of the same case was the same as the agreement between the two virtual examinations, as shown by Cohen's Kappa scores testing intraobserver agreement¹⁹ (TABLE 2). The combined level of agreement between observers was categorized as "substantial."

Level of Certainty

Study dentists rated how certain they were about their conclusions. They were slightly more certain about the conclusions they reached on the in-person examination (mean certainty = 8.70 out of 10.0; SD = 1.5) than they were on virtual exams (mean certainty = 8.06 out of 10.0; SD = 1.4). The means of the certainty measures were significantly different, with a p-value < .0008 using a two-tailed t-test on the difference between means. Uncertainty came from not being as used to making decisions based on virtual records and from the fact that in a number of cases there was no clear-cut "correct" answer.

FIGURE 1. Evaluation questionnaire completed by the dentist after each in-person and virtual examination

Conservatism

Both Dentist A and Dentist C judged that the patient could be seen in the community in 70.4 percent of the virtual case reviews. However, Dentist C's conclusions based on the virtual exam were more conservative than on the in-person exam (70.4 percent versus 75.9 percent in the in-person exam), whereas Dentist A's conclusions between in-person and virtual exams were more often the same and were slightly more conservative in the in-person exam (70.4 percent versus 69.0 percent in the in-person exam). Dentist B was generally conservative in both modalities, judging that community care was appropriate in only 55.2 percent of the in-person exams and 59.3 percent of the virtual exams (FIGURE 2).

Time Spent per Patient

The in-person examinations were accomplished in a mean of 4.20 minutes per case [SD = 1.6]. The mean for virtual examinations was 2.83 minutes per case [SD = 1.0]. The means were significantly different, with a p-value of 8.60×10^{-15} using a two-tailed t-test on the difference between means assuming equal variances. On average, the virtual examinations saved 1.37 minutes per case (32.8 percent of in-person exam time), and if a dentist were to work continuously, they could "see" 14 patients per hour through in-person exams or 21 patients per hour through virtual exams.

Interdentist Findings

Findings were evaluated to examine the extent to which the three study dentists' conclusions agreed with one another. Based on the in-person examinations, all three study dentists agreed that the patient could be seen in the community in 16 out of the 29 cases (55.2 percent), and all three dentists

TABLE 1

Virtual Examination Agreement With In-Person Examination (Virtual Case Count)

	Dentist A	Dentist B	Dentist C
Both virtual examinations agree with in-person examination	22	19	19
One virtual examination agrees with in-person examination	2	6	4
Neither virtual examination agrees with in-person examination	1	0	2

TABLE 2

Intra-Observer Agreement

	Dentist A	Dentist B	Dentist C	Combined
Cohen's Kappa ¹⁹	0.80	0.50	0.61	
Agreement (based on Landis and Koch guidelines) ²⁰	Substantial	Moderate	Substantial	Substantial

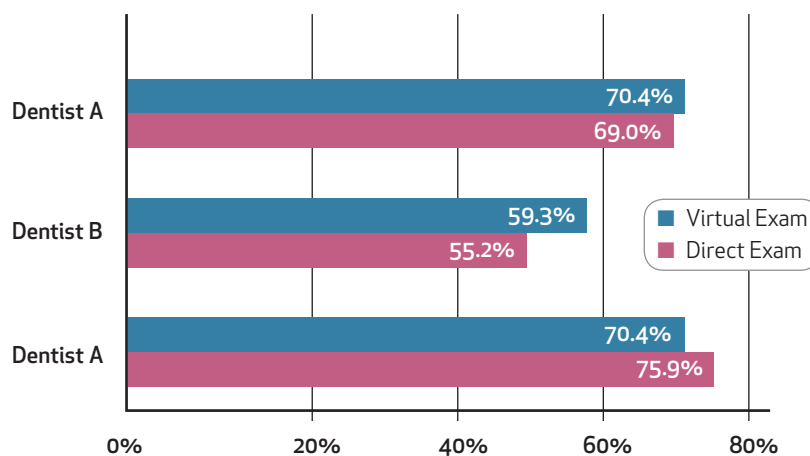


FIGURE 2. Proportion of cases in which dentist judged patient could be seen in the community.

TABLE 3

Decisions About Whether This Patient Can Be Seen in the Community (Based On In-Person Examination)

Finding	Count	Proportion
All three dentists say "yes"	16	55.2%
Two dentists say "yes"	3	10.3%
Only one dentist says "yes"	4	13.8%
All three dentists say "no"	6	20.7%

TABLE 4

In-Person and Virtual Agreement That the Patient Can or Cannot Be Seen in the Community

Finding	Count	Proportion
All three dentists agree on in-person exam	22 cases/ 66 exams	100%
All three dentists agree on virtual exam	22 cases/ 132 virtual exams	92.9%

TABLE 5

Intra-Observer Agreement

	Dentist A	Dentist B	Dentist C	Combined
Cohen's Kappa	0.82	0.73	0.56	0.71
Agreement	Substantial	Moderate	Substantial	Substantial

TABLE 6

Validity Measures for All Cases

Statistical Measure	Dentist A	Dentist B	Dentist C	Combined
Specificity ^a	94.7% [88.8-100.7%]	90.6% [82.9-98.4%]	81.6% [71.2%-91.9%]	88.9% [84.0-93.7%]
Sensitivity ^b	87.5% [78.7-96.3%]	81.8% [71.5-92.1%]	81.3% 70.8-91.7	83.3% 77.6-89.1
Positive Predictive Value ^c	94.7% [88.8-100.7%]	87.9% [79.2-96.6%]	91.4% [83.6-98.7%]	91.4% [87.1-95.7%]
Negative Predictive Value ^d	87.5% [78.7-96.3%]	85.7% [76.4-95.0%]	65.0% [52.3-77.7%]	78.9% [72.7-85.2%]

a=Correct judgment that the patient can be treated in the community.

b=Correct judgment that the patient cannot be treated in the community.

c= Proportion of patients correctly identified in the virtual exam as having a dental condition that requires the patient travel to dental facilities for treatment.

d=Proportion of patients correctly identified in the virtual exam as not having a dental condition that requires the patient travel to dental facilities for treatment.

agreed that the patient could not be seen in the community in another six cases (20.7 percent.) The three dentists did not all agree in the remaining seven cases (24.1 percent) (TABLE 3).

In the 22 cases in which all three dentists reached the same conclusion in the in-person examination, 92.9 percent of the combined judgments from the virtual exams matched those conclusions. More than half of the disagreements (five of nine disagreements) occurred on a single case (TABLE 4).

Cohen's Kappa scores were calculated

to test agreement among all three dentists (TABLE 5).

Validity tests, including specificity and sensitivity, and positive and negative predictive values, were conducted for all cases whether or not the three dentists reached the same judgment in the in-person exam. In these tests, the combined specificity and sensitivity scores exceeded the standard test accuracy threshold of 160 for all study dentists, both individually and combined. Positive and negative predictive values also documented validity (TABLE 6).

Discussion

The results of this study make clear that a dentist can make a valid judgment about whether a patient can be treated in the community or should be seen in a dental office based solely on a virtual exam from complete records provided by allied dental personnel in the field. Based on patient information collected in the field that includes intra- and extraoral radiographs, photographs, and charting collected by an RDA, a dentist can, with a great degree of certainty, decide on the best next action for that patient. In this study, individual dentists were consistent in their decisions about a specific patient whether the examination was in-person or virtual. Validity tests underscored that the virtual exam is a strong substitute for an in-person exam.

Moreover, there was agreement across dentists about the next best step for each patient. In more than three-fourths of cases, the three study dentists reached the same conclusion in the in-person examination on whether the patient could be seen in the community, and the findings in the virtual examination matched that agreement in the large majority of cases. Most of the disagreement occurred in a single case, and for that case all the study dentists felt that more information was necessary. This study environment was actually more difficult for the dentists than these decisions would be in an actual field environment. In the field, a dentist conducting a virtual exam would have the option of asking for additional information or talking over the findings with the allied dental personnel who collected the records, thus reducing the likelihood of such disagreements in practice.

The most important finding to come out of this study is that the exam modality (in-person or virtual) does not appear to affect a dentist's judgment about whether a patient can be treated in the community under the circumstances described for this

study. The investigation was designed with the knowledge there would be some cases in which all three dentists would reach a clear decision about whether the patient needed treatment in dental facilities, but there would be other cases in which different dentists might reach different conclusions. This assumption was borne out by the study. Those cases in which the study dentists reached the same conclusions were also clear enough that there were good to excellent measures of agreement between the two modalities using any measure of validity. Even when the cases in which all dentists did not agree were included, there was still good to excellent agreement between the modalities of in-person and virtual examination for individual dentists. The high levels of validity for each dentist's judgments on each case show that the conclusions a dentist reaches on a virtual exam are unlikely to differ from that dentist's conclusions on an in-person exam.

Although the dentists generally expressed lower certainty about the conclusions they reached from virtual examinations than from the in-person exams, that lower certainty might be attributed either to less information available for the decision or to the dentists being out of their "comfort zones" using an approach that was new to them. High levels of certainty did not correlate with an expectation that other dentists would reach the same conclusion, as some of the cases in which the dentists did not reach the same conclusion nonetheless had high confidence scores.

Where dentists' conclusions do not agree with each other from in-person exams, as happened with fewer than one-fourth of the cases in this study, one should expect, in fact, a lack of agreement between the virtual and in-person examination for those patients, particularly if the source of the ambiguity is the existence of multiple legitimate interpretations of the case.

Implications for Practice

Considering the application of these findings in the field, there will undoubtedly be dentists who tend to be more conservative in their interpretation of virtual examinations. Additional training may mitigate this tendency and/or refined protocols for the virtual exam that may, among other things, strengthen the information gathering for the virtual examinations.

One of the major benefits of being able to rely confidently on virtual examinations to answer the question of whether a patient

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can be treated in the community is that virtual examinations offer potential time savings to dentists and patients. The time savings for dentists can be important in helping to address a shortage of dentists willing to serve underserved and vulnerable patients. However, the greatest time savings will accrue to those patients and their caregivers who are spared a visit to dental facilities through these examinations. Given that two-thirds of the examinations, both virtual and in-person, conducted on patients in this study found that the patient had conditions that could be adequately treated in the community, enormous time savings can be anticipated as virtual examinations become integrated into patient care.

Another major benefit of the virtual examination is the ability for dentists to evaluate and make decisions about

individuals who do not traditionally visit dental offices and clinics. The ability to reach these individuals, make decisions about the best course of treatment, and increase the likelihood that that treatment will be carried out has the potential for tremendous improvements in oral health of these individuals.

The results of this study set the stage for new kinds of delivery systems, where dentists do not need to be physically present in order to make diagnostic and treatment decisions, decide the best course of action for a particular patient, and provide general supervision for activities carried out in community settings. The use of this application of telehealth to dental care has the potential to increase access to dental care while reducing the amount of time a dentist needs to make a judgment about the need for a patient to be seen in dental facilities.

Recent legislation in California, AB 415 recognizes that technology has evolved to be a useful tool in several fields for expanding access to health care.^{20,21} However, regulatory barriers and reimbursement issues still need to be addressed in dentistry as in other fields as the movement toward telehealth advances. These new tools and increasingly proven modalities are not just substitutes for the existing paradigm, they provide significant advantages in terms of distribution of professional labor, costs of care, and increased access for underserved populations. ■■■■

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Community-Based Prevention and Early Intervention Strategies

ALAN W. BUDENZ, MS, DDS, MBA, AND PAUL SUBAR, DDS, EDD

ABSTRACT Many people in California face significant barriers to obtaining dental care. Creation of a community-based oral health delivery system that could deliver preventive and simple therapeutic oral health services in community settings where these populations live or receive social and/or general health services has been one of the proposed strategies for improving access to oral health care. Two of the newer techniques are caries management by risk assessment and interim therapeutic restoration.

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There is ample evidence that many people in California, and all across our nation, face significant barriers to obtaining dental care, and, as a result, these people have significantly worse oral health than other segments of the population.¹ The barriers to dental care are greatest for children in general, minority children in particular, for children and adults with low incomes, and for children and adults with complex medical, physical, and social conditions.^{2,3} Many of these underserved individuals have difficulty getting to dental offices on a regular basis due to physical, medical, behavioral, cultural, or financial circumstances.⁴ For this reason, a number of organizations have expressed interest in addressing these health disparities by extending the reach of oral health professionals into community locations, creating a community-based oral health delivery system that could deliver preventive and simple therapeutic oral health services in community settings such as places where these populations live or

receive social and/or general health services.^{5,6}

Preventive oral health services that can be readily delivered in a community-based setting include basic oral hygiene instruction (regular use of a soft-bristle toothbrush, proper brushing technique, flossing technique, use of fluoride-containing toothpastes and rinses), basic diet and nutrition counseling, smoking prevention and cessation counseling, risk assessment for periodontal, caries, and occlusion diseases, and oral cancer screening. The increased rate of caries disease is especially evident amongst populations with limited access to dental care, which emphasizes the tremendous need for caries prevention and therapeutic management services for these people.⁷ Community-based settings have been proposed as the first-line in caries prevention and treatment, and as a screening base for referral of patients to dental offices for definitive care. Two of the newer strategies for assessment and

management of caries disease are caries management by risk assessment (CAMBRA) and interim therapeutic restorations (ITR). This article will focus on the evidence for these new strategies and their potential application into community-based oral health care settings.

Caries Disease

As an infectious and transmissible disease, dental caries has had a tremendous negative impact on the oral and overall health of the population of the United States. According to the Surgeon General's Report of 2000, dental decay in children is three times more common than hay fever and five times more common than asthma. The report goes on to state that at least 50 million school hours have been lost due to dental related illnesses within one year.¹ While the traditional surgical approach to dentistry has excelled at being able to duplicate the form and function of diseased hard-tissue structures, it has done a poor job of making an impact in the continued downward spiral of oral health in many segments of our population. The successful management of dental caries goes beyond the form and function approach and must take into account a patient's risk factors and disease indicators. This is where caries management by risk assessment can begin to make an impact on future caries experience.

Many segments of society encounter barriers when they attempt to attain oral health. Barriers to basic oral health care include financial, social, psychosocial, medical, developmental, and cultural. These barriers have created a stratification of disease where 80 percent of oral disease is concentrated in about 20 percent of the population. Our most vulnerable patients are children, the elderly, those with severe medical/developmental conditions, and under-represented minor-

ity populations. It has been found that dental disease is extremely prevalent in 25 percent of those with cerebral palsy and 30 percent of patients with head injuries. Additional studies have indicated that upward of 70 percent of America's nursing home population have poor oral hygiene and severe dental disease.⁸

There have been some startling trends in the demographic profile of children in California over the last 30 years. Data from the National Center for Children in Poverty indicates that low-income

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children in California have increased by 1.6 million during this time period. Seventeen percent of poor children in the United States live in California. While the national childhood poverty rate has remained somewhat stable during a 10-year period from 2001 to 2011, there was a 10 percent increase in childhood poverty in California during this same period.⁹ The pediatric population is especially vulnerable to the effects of dental caries. Besides the fact that children rely on others for care during critical years of their development, the vertical transmission of oral bacteria can seriously hamper the effects of protective factors during childhood development and significantly worsen caries risk in later years.

As a result of the economic challenges and migration patterns of low-income

families, there have been dramatic shifts in caries rates reflected in the pediatric population. According to the California Oral Health Needs Assessment of Children, greater than 50 percent of all California school-age children have untreated dental decay; more than twice the national average. Children of Asian, African-American, and Hispanic descent were found to have significantly higher rates of untreated dental decay than other populations.⁹

Our current method of surgically treating the destructive caries process has done little to address the extreme needs in these populations. Not only is the surgical approach to dentistry more costly, it fails to take into account the effect that oral bacteria have on newly placed restorations. Even in the presence of newly placed restorations using state-of-the-art techniques, if existing biofilm, oral flora, dietary and oral hygiene habits are not addressed, these restorations will eventually breakdown leading to further dental and oral health consequences.

Caries Management by Risk Assessment

In order to make an impact on oral health for underserved populations, studies have been undertaken to examine more cost-effective and efficient methods of managing dental caries. One promising approach is to manage caries via patient risk assessment, the so-called CAMBRA approach.

CAMBRA was intensely evaluated by a university-based, multiyear randomized blinded clinical trial funded by the National Institutes of Health.¹⁰ This assessment tool utilizes a medical-model approach to identifying and treating the underlying bacterial cause of dental caries. There are several assessment forms available for use and modification. The form most commonly used is based on the one

accepted by the group that published the Consensus Statement for CAMBRA in April of 2003.¹¹ The patient's overall risk assessment is based on a combination of disease indicators, risk factors, and protective factors. Once the overall risk is determined, appropriate intervention can be recommended using one or a combination of several chemotherapeutic approaches and behavior modifications.¹²⁻¹⁵

Although currently published studies were not undertaken utilizing an allied dental workforce delivering CAMBRA interventions in community settings, it makes sense to assume that this workforce configuration does have the ability to reach populations that office-based dentists do not, and to apply effective CAMBRA interventions. A recent article in the *Journal of Dental Education* highlights the challenges that the growing group of vulnerable patients will have in maintaining good oral health as they age and while maintaining their natural dentition.¹⁶ It will be important that skilled allied dental health professionals be considered as part of a future workforce model for addressing the needs of vulnerable populations. This workforce has the potential to reach high-risk patients on a regular basis, which is likely to be an important and very effective method of reducing the high incidence of oral disease in this population — certainly more effective than anything that can be done in a dental office where these patients do not go on any regular basis.

CAMBRA measures the relative balance between three elements: disease indicators, disease risk factors, and protective factors. While there are several types of assessment forms currently in use, the elements in each assessment instrument have some general commonalities. Disease indicators include visible cavitations, dentinal lesions, smooth

surface white spots, and whether restorations have been placed within the last three years due to caries lesions. Disease risk factors assess the presence of visible heavy plaque, frequency and type of snacking, presence of deep pits and fissures, salivary pH, bacterial load, and whether or not the patient presents with xerostomia. The elements measured for protective factors include whether or not the patient uses fluoride toothpaste daily, if a fluoride rinse is used daily, a history of antibacterial rinse use, and if the

PATIENTS WHO HAVE a higher risk of developing caries are out of balance in the risk factors, disease indicators, and protective factors equation.

patient had an office fluoride treatment in the last six months. The protective factors are weighed against the disease indicators and the disease risk factors.

Within the risk assessment regimen there are two objective measurements that are of particular value. The first is a measurement of the patient's salivary pH. Previous research has substantiated the value of pH in predicting future carious development.¹⁷⁻¹⁹ pH measurement is done by obtaining saliva from the sublingual or sublabial areas with a cotton swab and applying the sample to standard pH paper. pH is recorded as either acidic or alkaline on the CAMBRA assessment form.

Another parameter of interest is the measurement of bacterial load. One method of quantifying bacterial load is

to measure ATP bioluminescence via the luciferin-luciferase assay method.^{20,21} This test specifically assays the activity of *S. mutans* and lactobacillus species. There are several products on the market for this assay that use a swabbed saliva sample and only take a few minutes to complete.

Based on an assessment of the CAMBRA form, the patient can be put into risk categories that range from low risk to extreme risk. Using the risk assignment as a guide, the clinician can then recommend appropriate interventions that address the specific risk. For the low-risk patient, the clinician may only recommend continuing the current regimen such as a review of their daily oral hygiene activities and diet assessment. The extreme-risk patient would warrant more aggressive intervention to eliminate harmful biofilm. There are many approaches to modifying a patient's biofilm, but they generally are aimed at two specific areas: lowering bacterial activity and remineralizing teeth.

Patients who have a higher risk of developing caries are out of balance in the risk factors, disease indicators, and protective factors equation. In order to regain balance, attempts are made to first lower bacterial activity. This can be done in several ways and with a variety of products on the market. The use of 0.12 percent chlorhexidine has been shown to be very effective at lowering the levels of *S. mutans* in a patient's biofilm.¹² Various recommendations range from rinsing with chlorhexidine 1-2 times per day for several weeks on an ongoing basis to 1-2 times per day for one week per month. Other proprietary medicaments include formulations containing buffering agents, sodium hypochlorite, and iodine. Xylitol is a useful sugar substitute that can have dramatic effects on bacterial activity. It is equal to table sugar in terms of sweetness level and is formulated into gums, mints,

and other food products. Xylitol has the unique ability to inhibit the growth of *S. mutans* by decreasing the bacteria's ability to adhere to tooth surfaces. Research has shown that using maximal doses of xylitol products can dramatically reduce active caries activity in patients. The use of xylitol in the mothers of pediatric patients also demonstrates lowering of vertical transmission of *S. mutans*.^{22,23}

In addition to modifying bacterial activity, and neutralizing acids, CAMBRA interventions also are aimed at remineralizing tooth structure. Teeth are in a continual balance between demineralization and remineralization. When this balance is interrupted, decalcification via acids leads to white spot lesions and the subsequent development of cavitated lesions. Successful attempts can be made even in early carious lesions to tip the balance back to remineralization and re-harden damaged enamel. Casein phosphopeptide-amorphous calcium phosphate (CPP-ACP) is the newest member of the family of remineralization agents and comes in a paste form. CPP-ACP releases calcium and phosphate ions when saliva is acid-challenged and when salivary flow is suboptimal. In this situation, CPP-ACP provides a reservoir of soluble calcium ions that diffuse into subsurface enamel with resultant remineralization.²⁴ This product is generally recommended for use at bedtime after regular brushing and flossing, and not rinsed away.

Addressing the patient's salivary pH is important to guard against acidic demineralization of tooth structure. Use of sodium bicarbonate, (simple baking soda) after meals can also mitigate the effects of bacteria-generated acids.²⁵

Perhaps the longest studied remineralization aid is fluoride, which has both a remineralization effect and inhibitory effect against caries-forming bacteria.

Fluoride works primarily by promoting the formation of fluorapatite in the presence of calcium and phosphate ions. The limiting factor of fluoride activity is the availability of calcium and phosphate. Although there are years of research that substantiate the safe and effective use of fluoride, many cities have not added fluoride to drinking water, leaving large patient populations without this important decay-fighting element. In these cases, fluoride should be added to the patient's CAMBRA regimen. Fluoride is available in

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a variety of forms including high fluoride toothpastes (.05 percent sodium fluoride), tray foams (1.23 percent acidulated phosphate fluoride), rinses (.05 percent sodium fluoride), and varnishes (5 percent sodium fluoride). Varnish, which has the longest surface contact time of any of the preparations, is usually applied every three to six months in a clinical setting. They are typically useful in younger children where cooperation can be an issue.^{26,27}

Once a CAMBRA assessment has been done, the clinician can follow the patient through continued monitoring and assessment. The patient's risk is not static. Rather, it can change based on habits, disease status, and ongoing oral health. The use of CAMBRA is a simple, safe, and effective way for not only dentists, but allied members of the health

care team, including medical colleagues, to assess and treat the most vulnerable members of society. Patients who have severe medical problems, those who have developmental disabilities, the elderly, and the young have particular challenges to attaining and maintaining good oral health. Through the use of simple assessment and intervention strategies, along with education, coaching, and motivation, clinicians have a very cost-effective and safe method of improving the lives of the most vulnerable patients in our society.

Interim Therapeutic Restorations

Interim therapeutic restorations (ITRs), sometimes also referred to as atraumatic or alternative restorative treatments (ARTs), are defined by the American Academy of Pediatric Dentistry for use "to restore and prevent further decalcification and caries in young patients, uncooperative patients, or patients with special health care needs or when traditional cavity preparation and/or placement of traditional dental restorations are not feasible and need to be postponed."²⁸ ITRs are a "holding-pattern" temporary, hence "interim," minimally invasive treatment modality that, identical to ART, uses only hand instrumentation to remove markedly demineralized (softened), carious enamel and dentin, and then restores the cavitation with an adhesive restorative material.²⁹

This technique was originally developed for use in the less-industrialized parts of the world where access to traditional dental care is difficult, and IRT/ART has been endorsed by the World Health Organization as a means of restoring and preventing caries in populations with little access to traditional dental care.^{30,31} However, IRT/ART has now become an accepted part of the minimum intervention philosophy in developed countries

as well, and is increasingly becoming part of contemporary dental practice in the United States.^{28,32-38} ITRs have been shown to reduce the levels of cariogenic bacteria, such as mutans streptococci and lactobacilli, in the oral cavity, and are a recommended part of comprehensive care in the community-based dental home setting, as well as a beneficial technique in contemporary pediatric, special needs, and general restorative dentistry practices.^{5,6,28,39-43}

There is substantial evidence that the removal of all caries infected dentin in deep lesions is not necessary for successful termination of the caries lesion destructive process, particularly if the removal of deep infected dentin would place the pulp at risk of exposure.^{30,44-54} Several studies have demonstrated that cariogenic bacteria, once isolated from their source of nutrition by a well-sealed restoration, either die or remain dormant and thus pose no risk to the health of the dentition.⁵⁵⁻⁵⁹ However, it is essential that restorations that leave infected dentin in the tooth must be well-sealed to isolate the lesion from the oral environment. The risk of leakage of ITR restorations can be minimized by thorough removal of all demineralized tooth structure from the periphery of the lesion, which maximizes the bond of adhesive restorative materials at the margins, and by the use of glass ionomer restorative materials.³¹

High-viscosity glass ionomer cement (GIC) materials have been the preferred restorative material for ITR, especially when applied to single-surface or small 2 surface restorations.^{31,32} The glass ionomer adheres to enamel and dentin primarily via calcium bonds to the mineral content of the tooth structure.^{60,61} This adherence provides an adaptive seal, and, as the material slowly leaches fluoride ions into the adjacent tooth structure, GICs are capable of halting or slowing the progression of

carious lesions.⁶² More recently, newer resin-modified glass ionomer (RMGI) filling materials are showing considerable improvement of physical and adhesive properties, expanding the applications for ITRs and making it possible for them to be used in higher occlusal stress areas where failures previously occurred.⁶³ The RMGI materials also permit broader application for more esthetic anterior temporary fillings and more wear-resistant posterior temporaries. It is significant that numerous studies show that ITR

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restorations with glass ionomer materials consistently demonstrate success rates equal to amalgam filling material, and, in some studies, their survival rate has exceeded that of amalgam fillings in single-surface and small 2 surface restorations.^{34,64-73} This is an important factor when employing ITRs in community dental home settings where the timeframe from placement of the ITR temporary to definitive restoration in a dental clinic may be quite lengthy.

ITR restorations with glass ionomer-containing materials also demonstrate superior resistance to recurrent decay. In a meta-analysis of studies comparing the incidence of recurrent decay occurring at the margins of glass ionomer and amalgam restorations, significantly fewer carious lesions were found at the

margins of single-surface GIC restorations in permanent teeth after six years as compared to restorations with amalgam (from six articles reporting on eight separate studies).⁷⁴ Because stopping, or at the very least slowing, the progression of caries disease is one of the primary objectives of ITR in the community dental home application, the caries-preventing fluoride storage, release, and recharging characteristics of the GI materials in the ITR technique is highly advantageous.

One other concern that is sometimes expressed about the minimally invasive nature of ITR is that, because no local anesthetic injections are used, this technique may cause pain and discomfort to patients, resulting in fear and reticence for these patients to seek further dental care. This concern has been well-addressed in a number of quality studies reporting that ITR/ART causes less pain than traditional procedures and has been associated with less dental anxiety amongst patients, precisely because it does not involve drilling and injections.⁷⁵⁻⁷⁹ A meta-analysis of 17 articles evaluating patient responses to the ART technique stated, "All authors agreed that the ART promotes less discomfort for patients [versus conventional techniques], contributing to a reduction in anxiety and fear during ... dental treatment. Results also indicated that ART minimizes pain reported by patients."⁸⁰ In an effort to investigate potential discomfort caused by infiltrative local anesthesia injection versus the ITR/ART treatment approach, van Bochove and van Amerongen investigated discomfort in 6- to 7-year-olds with no prior dental treatment experience.⁸¹ The children were treated either by ART or by conventional technique, with both types of treatment rendered with or without local anesthesia injections. The study showed that during the first dental treatment

session, ART with no local anesthetic caused less discomfort than conventional treatment with no local anesthesia.

More interesting, though, was that during the second dental treatment session, ART without use of local anesthesia also caused less discomfort than the conventional treatment with local anesthesia injections. Thus, the authors concluded that the use of local anesthesia injections may in themselves contribute to the discomfort experienced by children during dental treatment. In comparison to the conventional treatment, the ITR/ART approach appears to cause a reduction in pain sensation, which may be related to the greater preservation of the dental tissues, and, consequently, the patient may become more receptive to the treatment. Ultimately, the ITR approach may be less traumatic to patients, and it may positively influence the patient's behavior toward seeking future dental treatment. Simply stated, ITR/ART is a patient-friendly technique that has been shown to be readily acceptable in patients who have not received previous restorative dental care.⁸⁰ "The application of RMGIC, in conjunction with the ART, presents a promising alternative for bringing dentistry to young patients, uncooperative patients, persons with special health needs, and in situations where traditional cavity preparation and placement of a traditional dental restoration is not possible."⁸⁰

Conclusion

Community-based settings have been proposed as the first-line in caries prevention and treatment, and as a screening base for referral of patients to dental offices for definitive care, and CAMBRA and ITR are two strategies that fit this front-line approach to caries disease management very well. CAMBRA presents a disease prevention-

based comprehensive assessment of the patient for the oral health team, and returns valuable oral health education, behavior modification counseling, and chemotherapeutic interventions to the patient. ITRs follow-up the preventive thrust of CAMBRA to stop, or at least to slow down, the progression of already cavitated caries disease lesions and to provide a temporary means of maintaining patient oral function and comfort. Due to the noninvasive techniques of CAMBRA and ITR, these disease prevention and management strategies also provide a very user-friendly introduction to oral health care to populations who have had very little to no prior contact with dental care. Combined with delivery in a familiar, community-based dental home setting, CAMBRA and ITR are likely to improve oral health for underserved populations, make them more receptive to dental treatment in general and more likely to seek more definitive dental care when they have the opportunity. ■■■■

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The Virtual Dental Home: Implications for Policy and Strategy

PAUL GLASSMAN, DDS, MA, MBA; MAUREEN HARRINGTON, MPH;
ELIZABETH MERTZ, PHD, MA; AND MAYSAM NAMAKIAN, MPH

ABSTRACT Widely recognized problems with the U.S. health care system, including rapidly increasing costs and disparities in access and outcomes also exist in oral health. If oral health systems are to meet the “Triple Aim” of improving the experience of care, improving the health of populations, and reducing per capita costs of health care, new and innovative strategies will be needed including new regulatory, delivery, and financing systems. The virtual dental home is one such system.

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Widespread oral health disparities exist in the United States.¹ The American Dental Association has estimated that around 30 percent of the population has difficulty accessing dental services through the current private dental care delivery system.² A national analysis in 2010 by the Government Accountability Office (GAO) indicated that only about one-third of children enrolled in Medicaid received any dental service during the 2008 fiscal year.³ These and many other reports clearly identify significant disparities in oral health among population groups.

The situation is worse in California, where only 26 percent of enrolled beneficiaries of the Denti-Cal system received any services in 2007.⁴ Also in California, in 2008, 24 percent of all children, ages newborn to 11, had never seen a dentist.⁵ In 2011, only 22 percent of the total number of people eligible for Medi-Cal dental services received any service, a decrease of 8 percent from 2009. A decrease was expected for adults since most adults benefits were

eliminated in 2009. However, there was also a decrease for children. In 2011, only 27 percent of eligible children received any dental service compared to 34 percent in 2009.⁶

In 2011, the Institute of Medicine (IOM) and the National Research Council of the National Academies of Science issued two reports on oral health, “Advancing Oral Health in America” and “Improving Access to Oral Health Care for Vulnerable and Underserved Populations.”^{7,8} Both of these reports document the significant proportion of the U.S. population that does not have access to oral health services and the disparities in oral health among population groups.

The U.S. health care system is under increasing pressure to improve performance. These changes are being driven by the widespread realization that the costs of the current fragmented system are increasing at alarming rates, and that in spite of spending close to twice the percent of our national gross domestic product (GDP) on health care compared to other developed countries we have significantly worse health outcomes

in general and huge health disparities among subpopulations.⁹⁻¹¹ These factors are driving reform of the health care system and creating pressure to form a more accountable system by moving from a system based on volume of services provided to one based on the value of those services.¹¹⁻¹⁷ Donald Berwick, former administrator of the Centers for Medicare and Medicaid Services (CMS) and former president and chief executive officer of the Institute for Health Care Improvement has referred to the goals of this movement as the Triple Aim.¹⁸ The three aims are improving the experience of care, improving the health of populations, and reducing per capita costs of health care.

As described in a 2012 report, "Oral Health Quality Improvement in the Era of Accountability," the factors that are driving reform in the general health care system all apply to the delivery of oral health care.¹⁹ Achieving the Triple Aim in oral health care will require important changes in the systems used to deliver oral health services to populations that are not adequately served by the traditional office and clinic-based oral health delivery system.

The IOM report, "Improving Access to Oral Health Care for Vulnerable and Underserved Populations," calls for research and demonstrations of new systems to improve oral health for vulnerable and underserved populations that emphasize prevention and early intervention and use new methods and technologies such as: bringing care to where people are by delivering oral health services in nontraditional settings; engaging nondental professionals; developing expanded duties for existing oral health professionals or creating new types of dental professionals; and using technologies such as telehealth.⁸ The IOM report also calls for research and demonstrations of delivery

systems that are based on measures of access, quality, and outcomes, and for incorporating these measures in payment and regulatory systems.

The Pacific Center for Special Care at the University of the Pacific, Arthur A. Dugoni School of Dentistry has created and is demonstrating a new oral health delivery system, the virtual dental home, which is designed to move oral health services for underserved and vulnerable populations toward the Triple Aim.

THE THREE AIMS ARE improving the experience of care, improving the health of populations, and reducing per capita costs of health care.

The Virtual Dental Home

The virtual dental home is an innovative new model for delivering dental care. It is applicable for a wide variety of population groups, especially those who are currently inadequately served in traditional dental settings. The model incorporates many of the recommendations from the IOM report, "Improving Access to Oral Health Care for Vulnerable and Underserved Populations" by:

- Bringing oral health services to locations where underserved vulnerable populations receive educational, social, and general health services and integrating oral health with services provided in those settings;
- Expanding duties for existing oral health professionals;
- Emphasizing prevention and early intervention oral health procedures; and

■ Creating a geographically distributed but coordinated dental team through the use of telehealth technologies.

The model initiates an individual's care needs in a community setting. By aligning the skills and capacity of a dental care provider in the community with a dentist in an office, high-quality coordinated care is provided using telehealth technology and electronic health records (EHRs).

The settings for care in the virtual dental home system include Head Start Centers, schools, residential facilities for people with disabilities, and long-term care facilities for dependent adults. The services provided include diagnostic, preventive, and early intervention restorative care. Where more advanced care that can only be provided by a dentist is required, case management techniques are employed to refer patients to dental offices and clinics. The dental team includes dentists who review electronic records and make diagnostic and treatment decisions and allied dental professionals who collect records and provide preventive and early intervention services in community settings under the general supervision of dentists.

In the virtual dental home model, early intervention restorative care is provided through a Health Workforce Pilot Project (HWPP) authorized by the California Office of Statewide Health Planning and Development.²⁰ HWPP No. 172 authorizes registered dental hygienists in alternative practice (RDHAP), registered dental hygienists working in public health programs (RDH), and registered dental assistants (RDA) to place interim therapeutic restorations (ITR) after being instructed to do so by a dentist.²¹ Further detail about the other aspects of the design and structure of the virtual dental home model is contained in other articles in this issue.

The virtual dental home demonstration project is now operating in nine sites in California. The project has success-

fully demonstrated the ability to deploy geographically distributed, collaborative, telehealth facilitated teams who are seeing patients, performing prevention and early intervention services, and making and supporting referrals for treatment that needs to be performed by dentists. Preliminary data indicates that approximately half of the individuals served by this system can achieve and maintain good oral health by services provided exclusively in the community by allied personnel under general supervision of dentists.

The virtual dental home demonstration project has an expert advisory committee that has provided feedback on the design and deployment of the model, contributed to identifying the potential for spread of this model, and contributed to the development of recommendations to facilitate sustainability and spread of this system of care.

The virtual dental home advisory committee concluded that the current system for delivering dental care is not optimized to improve or maintain oral health for many underserved people. In order for innovations in the delivery of oral health care, such as the virtual dental home to be sustained and spread, alterations are needed in the educational environment that trains providers, state systems that regulate scopes of practice and the delivery of services, and financing mechanisms. The following issues have been identified as focus areas for spread of this model.

Additional Populations

Underserved populations currently being served, and those likely to be further served by this model have high dental needs, or are good candidates for early population-based and community-based prevention and early intervention measures. These groups face significant physical, geographic, cultural, or financial barriers that make it difficult to access the

current care delivery system. The virtual dental home system provides triage and entry to the oral health delivery system for individuals who are institutionalized or vulnerable. The virtual dental home model provides an access point for education, screening, and case management for individuals known to have barriers to accessing dental services in traditional locations. Perhaps most importantly, the mobility of the virtual dental home model brings these services to communities that may not currently have delivery system capacity.

THE VIRTUAL DENTAL HOME system provides triage and entry to the oral health delivery system for individuals who are institutionalized or vulnerable.

The populations currently being served are Head Start and elementary school children, adults with developmental disabilities living in group homes, and residents of skilled nursing and acute care facilities. Populations not currently being served but who might benefit from this model include: children in school-based health centers, families participating in Women, Infants and Children (WIC) programs, migrant children and adults, patients of community health centers, incarcerated populations, veterans, institutionalized mentally ill persons, children in the foster care system, adults in drug-treatment programs, homeless populations, homebound adults and children, low-income community-dwelling adults, older dependent adults who attend day programs, and those living in rural communities.

Workforce Integration, Education and Deployment

Provider participation will be critical in order for this model to spread. The patients being cared for via this model are challenged by significant health, behavioral, financial, and/or transportation barriers and most do not access care in traditional dental practice settings. Many dentists are realizing that there is significant potential for this model to expand their practice and bring patients to their practices who might not have otherwise accessed their services. In the virtual dental home model, dentist's roles are also expanded as they learn to work with a geographically distributed team of allied dental personnel and use telehealth technology to evaluate patients, make treatment decisions, and communicate with the dental team. Patients referred to the practice come with dental records collected and preventive procedures completed, making the time in the dental office more efficient.

An additional provider participation issue is their willingness to make treatment decisions based on a virtual examination. Another article in this issue provides data demonstrating that dentists can make the same decision based on virtual records that they would with an in-person examination. This method of making treatment decisions is new to most dentists and represents an opportunity for dentists and allied dental personnel to expand their ability to work in a telehealth facilitated model of care. The model also expands the roles of oral health professionals into interdisciplinary team-based models emphasizing overall patient-centered care in health systems and whole child well-being in educational systems. It will take training and experience for providers to be comfortable using new technology and working in more integrated systems.

Another unique aspect of the virtual dental home model is that it brings dental care to individuals who do not receive

care in dental offices or clinics. Doing this requires new roles for all members of the dental team in new practice environments. The virtual dental home model expands the scope of practice of current allied personnel to make the decision about which, if any, radiographs to take to facilitate an initial oral evaluation by a dentist, and to place ITRs. The safety and efficacy of these scope changes are being demonstrated through HWPP No. 172. Sustainability and spread of the virtual dental home model will require these duties be incorporated into the scope of practice for these license categories.

Spreading the virtual dental home model involves creating an adequately trained and deployed oral health workforce. Formal education of dentists, dental hygienists, and dental assistants in telehealth technology and the techniques needed to work in geographically distributed teams may be a new thread in oral health education programs. Curriculum on community-based practice may also need to be increased including topics on health promotion, working with community partners, public health approaches, and working in integrated health teams.

Implementing the virtual dental home model requires culture change among caregivers and administrators of agencies providing education, general health, and social services. These individuals and agencies do not traditionally see themselves as having a role in the delivery of health care in general or oral health care in particular. This model presents an opportunity for changing these traditional views through education for nondental professionals about their role and the role of their institutions in maintaining oral health. In addition, many of the virtual dental home model's intended populations have low dental literacy as do many caregivers.⁷ There is an opportunity to integrate messages about the importance of oral health and

how to prevent oral disease into the activities of community agencies and facilities and increase the impact of these messages on individuals and their caregivers.

Integrating oral health professionals into the structure of nontraditional settings helps normalize these messages, provides a reputable source of evidence-based information and encourages ongoing communication about improved oral health as a lifelong commitment. Fundamentally, the integration of oral health into educational, general health, and social settings

SPREADING THE virtual dental home model involves creating an adequately trained and deployed oral health workforce.

must begin at the top of the organization as these changes are not quick or easy.

Spread of the virtual dental home model will require concerted outreach and education efforts targeted to oral health professionals, administrators and staff of educational, general health, and social services agencies and policy-makers. The messages need to help these diverse groups understand the benefits of the virtual dental home model in their own work as well as for the people they work with on a daily basis.

Electronic Health Records and Telehealth Technology

The virtual dental home model of care uses a cloud-based electronic health record (EHR) system called Denticon.²² This system allows records to be collected in one location and reviewed in a geographically separate

location. There are a number of opportunities to spread this system. One of these is to address the lack of interoperability between electronic health record systems. For more than a decade, the federal government had set a goal to create a national health information infrastructure (NHII) with broad adoption and use of EHRs and interoperability between EHRs collected by various systems and providers.²³ While billions of dollars have been allocated for this purpose, EHRs are still not universally used in medical or dental practice, and interoperability does not yet exist, even in practices that use EHRs. This makes for the need, in some circumstances, for double data entry or the need to refer to two record systems for complete information about a patient in the virtual dental home model.

Another opportunity to spread the use of telehealth technologies is to address the fact that the current regulatory environment in most states and in California allows payers to withhold payment for services if they are provided using telehealth technologies. As described in more detail in another article in this issue, in 2011, California Assemblymember Dan Logue (R-Lake Wildwood) introduced Assembly Bill 415, the Telehealth Advancement Act of 2011.^{24,25} Effective Jan. 1, 2012, this new law modernizes California's landmark Telemedicine Development Act of 1996 to reflect advances in the field since the original law's passage. It also updates the definition of telehealth to reflect the broader range of services in use today, and allows all licensed health professionals in California to engage in telehealth.

One intent of the legislation was to propose a way to create parity between health services delivered using in-person methods with health services delivered using telehealth methods. The important determinant should be whether the service was delivered effectively and not the

technologies chosen by the provider to deliver the service. However, the law does not mandate that the Medicaid system or any other payers reimburse providers for services delivered using telehealth technologies. There is an opportunity for stakeholder groups to introduce follow-up legislation to address this issue.

Currently the California Medicaid system reimburses for store-and-forward applications related to teledermatology, teleophthamology and specific types of teleoptometry services.²⁶⁻²⁸ Given that telehealth services used in the virtual dental home model use the same store-and-forward system for collecting records and reviewing them at remote locations, a strong argument can be made that these services should be covered as well.

The virtual dental home will be facilitated as the use of EHRs becomes more ubiquitous and challenges with interoperability among dental software systems decrease. As electronic health records evolve, there may be greater standardization and ability of systems to interoperate that would increase the willingness of providers to engage in this model of care. Additional requirements for the model to be successful are access to reliable broadband, financing of start-up capital costs, ongoing technical training and access to technical assistance, and clear understanding of the financial and other practice benefits of adoption.

Practice Management Considerations

In order for the virtual dental home model to be incorporated into practice on a larger scale, management of dental practices must be addressed. This includes incorporating telehealth practice into traditional practices through the use of bridging tools to increase compatibility with existing dental record technology and billing systems.

As the virtual dental home model has evolved it has become apparent that teams of providers must be optimized and deployed for the population being served. Customization of the team requires that liability coverage be expanded to provide coverage for allied dental personnel working in community settings, as well as for dentists in offices and clinics. An aspect of the telehealth model that may be particularly attractive to providers is the inherent flexibility of a store and forward process, opening up a host of new potential practice arrangements.

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Financial Issues

The current virtual dental home demonstration project is being financed by grant funding and existing traditional payment sources, primarily fee-for-service Denti-Cal (California's dental Medicaid system). Dentists and allied dental personnel get partial payment from grant funds for health promotion and other activities not reimbursable through current funding streams, and payment from existing funding streams for some traditionally covered services. Virtual dental home model sustainability requires financial support for activities such as case management, health promotion and education, intensive community-based prevention efforts based on individualized risk assessment, and community-based early intervention procedures.

Reform efforts in the broader health

care environment such as the patient-centered medical home and accountable care organizations, emphasize outcomes or value-based systems rather than system based on volume of services such as fee-for-service arrangements.^{9,18-32} Preliminary evidence from the National Demonstration Project on the Patient Centered Medical Home shows that these new models are feasible, but, like the virtual dental home project, the process for change is challenging with operational, cultural, and policy issues that need to be addressed.³³

Another opportunity to spread the virtual dental home model is to address the lack of recognition of the importance of oral health in federal and state policies and regulations. Dental services are an optional benefit under the federal Medicaid program and, in 2009, California reduced coverage for adults to only federally required adult dental services (FRADS). Even "covered" populations do not have dental coverage designed for the virtual dental home model of care. Denti-Cal, the California Medicaid system, does not provide reimbursement for the costs of case management, telehealth consultation, and community-based prevention and treatment activities. By tying payment mechanisms to population health outcomes, delivery systems could have financial support for and place greater emphasis on community-based case management, telehealth consultation, and community-based prevention and treatment activities. These activities can result in more "health per dollar" of spending if the focus shifts to the health outcomes of services provided.

Critical to allocating adequate funding to support new models of care is the need to educate policy-makers about the financial benefits of community-based prevention and early intervention services. There is increasing evidence that these services save on multiple consequences of the neglect of dental disease. The costs of neglect include the need for more complex dental treatment

later on if prevention and early intervention services are not in place. In addition, neglect leads to expensive hospital emergency department visits that do little to treat the actual source of the problem, very expensive treatment in hospital operating rooms for advanced dental disease or severe dental infections, and lost days of school and work due to dental problems.³⁴⁻³⁶ There is also increasing evidence that prevention and early intervention oral health services can reduce the staggering costs associated with general health conditions such as diabetes and pneumonia.³⁷⁻⁴³ By focusing on prevention and early intervention, the virtual dental home model can help to drive down the total cost of oral and general health care.

Another opportunity related to funding mechanisms involves expanding the virtual dental home model in federally qualified health centers (FQHCs). The FQHC system could be an important system in which to demonstrate the value of the virtual dental home model because FQHCs primarily receive payment based on encounters that provide latitude about what is done at each visit.⁴⁴ They are also typically very oversubscribed and have much higher demand for their services than they can provide.⁴⁵ In addition, services are provided primarily in dental chairs in the FQHC dental clinic so the number of people served could be greatly expanded if they served a portion of their target population in community sites. However, FQHCs in general, and particularly in California, face several regulatory barriers to adopting this approach. Telehealth delivered services are not recognized and billable visits as services must be delivered in a face-to-face encounter. It is also difficult to be reimbursed for encounters that take place outside the “four walls” of the dental clinic. Finally, although dental hygienists are now recognized in California as “billable providers,” the procedures for billing for their services are complex and few FQHCs

have adopted them.^{46,47} If these issues were addressed, FQHCs could potentially increase the number of patients they are able to serve and keep healthy by severalfold.

In order for the virtual dental home model to spread, there will need to be new financing models developed that remove regulatory barriers to the use of telehealth-enabled services delivered outside of the “four walls” of offices and clinics and that provide incentives for improving the health of the target population, not just those who walk through the doors of the dental office or clinic.

BY FOCUSING ON prevention and early intervention, the virtual dental home model can help to drive down the total cost of oral and general health care.

Moving to the Future

There is increasing demand for the virtual dental home model as the success of the current demonstration is being recognized and communicated among those interested in access to dental care and oral health for the vulnerable and underserved populations. Administrators of long-term care facilities, school district health program administrators and administrators of group homes are communicating with Pacific directly and requesting support and guidance for implementation of a virtual dental home telehealth program in their communities and for their students and clients.

In summary, the following recommendations will facilitate realization of the full benefits of the virtual dental home model:

- Expand demonstrations of the effectiveness of the virtual dental home

model to additional populations and sites including migrant child care programs, community health centers, incarcerated populations, veterans, institutionalized mentally ill persons, children in the foster care system, drug treatment programs, homeless populations, homebound adults and children, low-income community-dwelling adults, older dependent adults who attend day programs, and those living in rural communities.

- Incorporate the duties being tested under California HWPP No. 172 into the scope of practice of allied dental personnel.

- Develop and incorporate curriculum on working in geographically distributed, telehealth-enabled, community-based teams into oral health professional education programs.

- Educate caregivers and administrators of agencies providing education, general health, and social services about the importance of oral health and the benefits of the virtual dental home model and help them develop a vision for how the model can help them in their own work as well as benefit the people they work with on a daily basis.

- Require the Medicaid system and other payers to reimburse providers for oral health services delivered using telehealth technologies. The important determinant should be whether a covered service was delivered effectively and not the technologies chosen by the provider to deliver the service.

- Support the adoption and spread of interoperable EHRs in dental practice.

- Educate policy-makers about the huge cost of neglect of dental disease and the potential savings from supporting community-based prevention and early intervention services.

- Allow and support federally qualified health center's ability to bill for services provided outside the “four walls” of the clinic and to bill for services provided using telehealth-enabled encounters

and by allied dental personnel in order to facilitate the delivery of telehealth-enabled community-based services.

- Develop payment mechanisms that move payment for oral health services from “volume to value” by basing payment on health outcomes in the target population.

- Encourage dental benefit plans and other public and private payers to adjust coverage options for systems based on individual risk assessment with an emphasis on community-based case management, health promotion and prevention activities for those who are not able to access care in the traditional dental office or clinic setting.

- Advocate for state Medicaid agencies to fund pilots of systems of care like the virtual dental home and support studies of the health outcomes of these systems. ■■■■

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TORRANCE - Leasehold & Equip Only! Modern designed office established ~10.5 yrs ago w/ 3 eq ops in 1,215 sq. ft. ste. ID #4125
W. HOLLYWOOD - Located in Prestigious bldg w/ mountain views. 3 ops. 48 yrs of gdwll. Grossed approx. \$1,031,093 in 2011. ID#4153.
WESTLAKE VILLAGE - Equip & Charts! Beautiful office set up for Paperless / Digital. Located on 2nd floor of Med bldg. ID #3211.
WESTWOOD (GP) - With over 30 years of goodwill this modern designed office is in a 12 story med/dent bldg. 2 eq ops. ID # 4181.

ORANGE COUNTY

ANAHEIM (GP) - Turn-key practice located in busy shopping center. Established in 1999. State-of-the-art facility w/ 4 eq. ops. ID #4171.
HUNTINGTON BEACH (GP) - Long established practice in 1 story shopping center w/ 4 eq. ops. Grossed \$430K in 2011. ID #4145.
IRVINE - Located in busy shopping cntr w/ lots of foot traffic. Modern designed w/ 4 eq. ops. Over 10 years of goodwill. ID #4053.
IRVINE - Great opportunity for GP or Specialist!! Leasehold & Equip Only! 5 eq. ops. located in busy large shopping center. ID #3401.
LAGUNA HILLS - General practice located in 2 story busy shopping center. 19 yrs gdwll. 4 eq. ops. NET OF \$269K. ID # 4155.
LAGUNA NIGUEL - Turn key office located in busy shopping center w/ 3 eq ops in 1,119 sq. ft. suite. Digital office. ID#4163
LAKE FOREST - Turn key practice w/ 3 spacious eq ops, 1 plmbd not eq in a 1,200 sq ft ste. Busy shopping center. ID #4123.
ORANGE - Fee for service practice open 4 days/wk located in a single story med center w/ 4 eq. ops., on a 1,040 sq. ft. suite. ID #3531.
SANTA ANA (GP) - Turn-Key Location. Absentee owner. Long established practice w/ 4 eq ops. Seller owns Bldg. ID #4071.

RIVERSIDE / SAN BERNARDINO COUNTIES

CATHEDRAL CITY - Leasehold & Equip Only! Bank owned location. Consists of 7 spacious eq. ops. Corner location. ID # 4173.
LA QUINTA - Price Reduced. Leasehold & Equip Only! Located in strip shopping center W/ 3 eq. ops, 1,000 sq. ft. ste. ID#4063
LOMA LINDA - Office is 1,100 sq. ft. w/ 4 eq. ops. Has Easy Dental, Pano & Ceph. 12 yrs gdwll. Grossed ~\$900K in 2011. ID#4131.
MORENO VALLEY (GP) - Turn-Key practice in busy shopping center w/ 3 eq. ops., & 2 plmbd. Established in 2005. ID #3311.
RANCHO CUCAMONGA - Leasehold & Equip Only! Consists of 4 eq. ops in a 1,275 sq. ft. suite in busy shopping center. ID # 4161.
TEMECULA (GP) - Fee for service practice w/ over 20 yrs of gdwll. Consists of 1,999 sq. ft. suite w/ 6 fully eq. ops. ID #4143.
TEMECULA - Leasehold & Equip Only! Bank owned office with 2 eq. ops, 2 plumbed not eq. in a 3 story prestigious building. ID #4159.

SAN DIEGO COUNTY

SAN DIEGO - Family GP w/ multiple specialties. Off of Freeway 8 and 15. 40 years of goodwill. Proj ~\$827K for 2012. ID#4107.

VENTURA & KERN COUNTY

BAKERSFIELD (GP) - Located in free standing bldg owned by Seller. 3 eq ops. Ins/Cash/Medi-cal/Some Cap. NET OF \$354K. ID #4165
PORT HUENEME (GP) - Absentee Owner Practice. Established in 1980. Consists of 3 eq. ops, in a 920 sq. ft. suite. ID #4167
VENTURA COUNTY (GP) - Modern designed state-of-the-art practice in single story building. Grossed ~\$761,436 in 2011. ID #4151

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How to Place a Classified Ad

The *Journal* has changed its classified advertising policy for CDA members to place free classified ads online and publish in the *Journal*. Only CDA members can place classified ads. Non-CDA members can place display ads.

All classified ads must be submitted through cda.org/classifieds. Fill out the blank fields provided, including whether the ad is to appear online only or online and in the *Journal*. Click "post" to submit your ad in its final form. The ad will be posted immediately on cda.org and will remain for 60 days.

Classified ads for publication in the *Journal* must be submitted by the fifth of every month, prior to the month of publication. Example: Jan. 5 at 5 p.m. is the deadline for the February issue of the *Journal*. If the fifth falls on a weekend or holiday, then the deadline will be 5 p.m. the following workday. After the deadline closes, classified ads for the *Journal* will not be accepted, altered or canceled. Deadlines are firm.

Classified advertisements available are: Equipment for Sale, Offices for Sale, Offices for Rent or Lease, Opportunities Available, Opportunities Wanted, and Practices for Sale.

For information on display advertising, please contact Corey Gerhard at 916-554-5304 or corey.gerhard@cda.org.

CDA reserves the right to edit copy and does not assume liability for contents of classified advertising.

OFFICES FOR RENT OR LEASE

OFFICE SUB-LEASE OPPORTUNITY — GP office with 1,400 sq. ft. in one of the best locations in Fresno. 3 operatories, all equipped, ready to use. Sub-lease for 2 days per week. Very ideal for Endodontist, Periodontist or Oral Surgeon. Contact 559-930-1354.

OFFICE FOR RENT OR LEASE — Space available for a general dentist to rent our beautiful, newly renovated 2,300 square foot pediatric and orthodontic practice in San Juan Capistrano. Office has 6 chairs with wall-mounted LCD entertainment systems, a consultation room, 2 brand new X-ray units, a kitchen and a sizeable

reception area. Great opportunity for a general dentist to grow his or her practice while saving on overhead. Office available 2-3 days a week. Please email achandsa@gmail.com or call 949-661-3380 if interested or for more information.

OFFICE FOR RENT OR LEASE — Beautiful dental office space for rent in prime Beverly Hills location! 5 Computerized operatories Digital/Dexis X-rays, large sterilization area. General/cosmetic dentist looking to share office. Will consider specialists or general dentist. Space available full/part-time. Perfect for recent grad or established dentist. Days/terms flexible. Email smgdds@aol.com or call 310-550-1511.

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CLASSIFIEDS, CONTINUED FROM 613

OFFICES FOR SALE

ORTHODONTIC OFFICE FOR SALE —

Orthodontic office available in Encino. Orthodontist retiring after 32 years in same location. Recently remodeled. Four chairs in open bay and one private operatory. All leaseholds included in sale. Great opportunity for recent graduate to build a practice or for established orthodontist to relocate. Please email your response to drewstaxi@aol.com.

DENTAL OFFICE FOR SALE — Beautiful dental office in South San Jose. Modern, high technology, 1,292 sq. ft. office with 4 fully equipped operatories. Digital X-ray system (both intra-oral and Pano), computer in every operatory with two monitors (Dentrix Computer Charting), soft tissue laser, electric handpiece system, digital photography system (intra oral cameras and extra oral SLR camera). Ready to move in. Please note that the sale of this practice does not include patient records. Call 408-234-5203 or email to drbaik@ddsbaik.com.

MERCED DENTAL OFFICE FOR SALE —

This immaculate office is an absolute jewel. Averages 10 patients per day and generates approximately 18-20 new patients per month. Low monthly rent. This highly visible, easily accessible office is conveniently located in a professional building complex in a busy, popular retail/commercial neighborhood. The office occupies approximately 1,280 sq. ft. and consists of 4 fully equipped operatories with digital X-ray, reception area, doctor's office, business office, sterilization, lab, dark room, storage and restroom. Full price: \$250,000. Contact 209-777-4006.

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OPPORTUNITY AVAILABLE — Oral Surgery, Plastic Surgery, Implant Center, is seeking a positive, enthusiastic, team member to join our practice. Contact for more info and interview at johnwillardsen@mac.com or 909.798.9950.

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OPPORTUNITY AVAILABLE — Our family friendly practice located in Brentwood, CA is currently looking for an enthusiastic DA or RDA. Responsibilities include but are not limited to chair side assisting with 4 handed dentistry, fabricating temporaries, coronal polishing, and occasionally helping with front office duties,

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- ❖ **MARIN COUNTY** - Coll. \$332K, 3 ops, between Sausalito and San Rafael. **SOLD**
- ❖ **PERIODONTAL - S.F. EAST BAY** - Established 30 plus years. Well known and respected in dental community. Seller will stay on contractually for introduction to established referral base.
- ❖ **CENTRAL CONTRA COSTA - DANVILLE** - Established family practice priv/ins UCR, \$1.2M collections, 4 operatories. **SOLD**
- ❖ **SOUTH LAKE TAHOE** - For Lease. 5 ops. Not equipped. No upgrades or additions needed. Call for details.
- ❖ **DUNSMUIR - SHASTA** - Dental office bldg for sale. Call for referral.
- ❖ **CENTRAL VALLEY** - 3 ops., collections \$725K. **PENDING**

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BAY AREA

A-8941 SAN FRANCISCO— Two Fully Equipped ops/plumbed for 1 add'l **Only \$65k**

AG-053 SAN FRANCISCO - Prime location beckons sophisticated buyer! No better visibility, signage & unique city views! 9 ops + 1 add'l **\$750K**

B-9851 SAN RAMON Facility—This opportunity will not wait! Office ~ 1,700sf w/ 3+ ops **\$219k**

BN-068 ORINDA - Attractive 2-story Professional building. Office is ~800sf w/3 ops. **\$850k**

BN-051 HAYWARD— This well-established, family-oriented practice has ~1,000sf w/3 ops **\$150k**

BN-052 PLEASANTON Facility Only— Spectacular 8-op office in medi/prof building, 1950sf. **\$195k**

C-8901 SANTA ROSA— Residential area. 40+ new pats/mo. Highly Visible! 1291sf & 3 + 1 op. **\$468k**

C-1016 MARIN CO—Well-established w/wonderful patient base! 800 sf w/3 ops **\$280k**

CG-021 SUISUN CITY—Quality, FFS Practice. 1,200 sf & 3 ops **\$300k**

D-9091 ATHERTON —Turnkey operation 969 sf & 3 ops **Call for Details!**

D-845 San JOSE Facility Only - Great Location! ~2080sf, 5 ops + 1 add'l. **Now Only \$79k!**

D-960 Facility only SAN JOSE —Opportunity to purchase condo suite also! 1,158sf w/3 ops **\$65k**

DN-040 SAN JOSE— Major retail shopping center. BELOW MARKET RENT! 2,000 sf w/5 ops **\$495k**

DN-046 SANTA CRUZ AREA - Excellent location and visibility! Spacious 1,405sf w/3 ops **\$675k**

D-997 SAN JOSE -Well established, FFS practice. ~ 1,008 sf w/ 3 ops + 1 add. **\$230k**

DN-055 Facility MILPITAS - Located in bustling heart of town. Spacious, fully networked 4-op office (2 fully equipped ops). 1450 sf! **\$125k**

DN-062 LOS ALTOS— ~1222 sf w/3 ops. **\$250k**

DN-063 SAN JOSE - Long-established, Popular Retail Shopping Center. 780 sf w/ 2 ops **\$95k**

DG-060 WATSONVILLE- Practice & Real Estate Available! Spectacular 2,245 sf w/ 4 ops. Call for Details!! **Practice: \$298k / Real Estate: TBD**

NORTHERN CALIFORNIA

E-8641 SACRAMENTO-FACILITY - 2,100+ sf w/ 3 ops & plumbed for 1 add'l **\$50k**

E-1018 Facility Only FOLSOM—Sparkling! Medical/Dental building. ~2305sf w/ 5ops. **\$150k**

EN-026 ROSEVILLE—Warm Caring Environment, ~1000sf, w/ 3 ops. **\$380k**

EC-045 SACRAMENTO - FFS, Established 20+ years. 1500 sf w/4 ops. Plumbed for 1 add'l op! **\$320k**

EG-065 SACRAMENTO-Practice AND Property only **\$145k**. Collections \$350k+ '07. Huge growth potential!! 1,200 sf w/4 ops.

F-1013 FORTUNA—Well respected FFS GP. Loyal stable patient base. 1,000 sf w/ 3 ops **\$195k**

G-875 YUBA CITY—Estab. 30+yrs, GP, FFS, 3,575sf /9 ops, **\$1.63m w/Cerrec ~ Buy-In Op!**

G-883 CHICO VICINITY— Quality FFS GP. Attractive Prof Plaza. 1,990 sf w/ 5 ops **\$495k**

G-998 CHICO/PARADISE—Surrounded by breathtaking natural beauty! ~898sf, 3 ops. **Now \$240k**

H-856 SOUTH LAKE TAHOE Over 50 new patients/mo Respected & Growing! 1568 sf & 4 ops **\$325k**

HC-054 SIERRA FOOTHILLS— Seller Retiring. 1,800 sf w/ 5 ops **\$600k**

G-1019 WILLOWS AREA—Small Community practice! ~1,600sf w/ 2 ops. **\$185k**

GN-034 PARADISE—Central Local and great views! ~1168sf w/ 3ops. **\$210k**

GN-039 CHICO - Family-oriented, FFS, tucked in vibrant community! 1,040 sf w/3 ops **\$95k**

GN-048 CHICO—Long established, well respected, spacious 1,39sf w/5ops. **\$437.5k**

GN-058 YUBA CITY— Emphasis on quality dental care and patient comfort, 1,704sf w/ 4 ops **\$450K**

GN-075 YUBA CITY—Well established practice w/ loyal patient base! ~3000 sf w/ 8 ops. **\$350K**

SOUTHERN CALIFORNIA

KF-070 BREA—Affluent, loyal, stable, well-educated patient base. Highly-esteemed practice. 2,400 sf w/2 ops. Plumbed for 3 add'l **\$350k**

CENTRAL VALLEY

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

I-1005 SAN JOAQUIN VLY— Long-established High-End Restoratives. 2,500+ sf w/ 6 ops **\$650k**

IN-024 MERCED - This immaculate practice is an absolute jewel! ~1250sf, 3 ops + 1 add'l **\$240k**

IN-032 GREATER MERCED AREA - Prime Location! Modern equip ~1,100 sf w/ 4 ops **\$335k**

IC-066 TRACY - 1,600 sf w/4 ops. Plumbed for 2 more. **\$525k**

IG-067 STOCKTON— Fully computerized, paperless, digitalized practice. 5,000 sf w/10 fully equipped ops **\$475k**

IN-071 MODESTO— FFS/Large/stable patient base. Real Estate available! Recently remodeled/fully digitalized. 2,600 sf w/7 ops **PR:\$1.2m RE: \$580k**

J-1000 TULARE— Highly visible location! ~1650sf w/ 4ops **Practice: \$465k /Real Estate: \$249k**

J-1001 LINDSEY— All American City! Conveniently located ~3,380sf w/5ops. **Now Only \$264k**

J-1009 VISALIA— Buy 50% or 100%! Prof Bldg. Desirable area. 4 ops. **\$250k /\$500k**

IN-072 STOCKTON— Fully computerized/ digitalized/ paperless. 3,290 sf w/10 ops. **\$1m**

IN-074 CENTRAL VALLEY - This Seller is Extremely motivated! ~2,600 sf w/ + 1 add'l **\$85k**

SPECIALTY PRACTICES

I-7861 CTRL VLY ORTHO— 2,000sf, open bay w/8 chairs. FFS. 60-70 patients/day. Prof Plaza. **\$370k**

I-9461 CENTRAL VALLEY/ORTHO - ~ 1,650 sf w/5 chairs/bays + (2) add'l plumbed. **\$140k**

J-983 CENTRAL VALLEY ORTHO - Attractive, single-story ~1,773sf w/ 6 chairs/bays. **\$325k**

G-975 CHICO ORTHO—Providing quality care 2 Denti-Cal patient base. ~ 900 sf w/ 2 + ops. **\$90k**

DN-022 ENDO TRI-VALLEY—~ 30 new pats/mo. 975 sf w/ 2 fully equipped ops **\$275k**

BC-033 ALAMEDA CO ORTHO - ~ 50 pats/day. Highly visible. 1,250 sf w/4 Chairs/Bays **\$450k**

GN-050 NORTHERN CA PERIO - An opportunity like this comes only once in a lifetime! Remodeled office is ~3,500 sf w/ 5 ops. **\$1m**



Timothy G. Giroux, DDS



Jon B. Noble, MBA



Mona Chang, DDS



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- **ANAHEIM:** For Sale-General Dentistry Practice. This 3 op had \$253,000 in collections in 2011. There are 3 ops in this 864 sq. ft. office with 1.5 days of hygiene. Owner works 3 days per week. No welfare or HMO's. Laser, Dextrix Software and Intra-Oral Camera.
- **BISHOP:** For Sale-General Dentistry Practice and Building. After 29 years in the same location this retiring dentist is selling both his practice and building. Collections were \$1,000,243 in 2011 with \$387,000 Adjusted net income. There are 6 days of hygiene in this 5 op 1,800 sq. ft. building. 100% financing is available for both building and practice.
- **CHICO:** For Sale-General Dental Practice. The collections in 2011 were \$1,209,207. There are 7 days of hygiene in this 5 operator, 2,400 sq. ft. office. Equipment includes Laser, Intra-Oral camera, new Cone Beam X-ray and Dextrix software. This excellent practice has 1,824 active patients with 12 new patients a month.
- **CHULA VISTA:** For Sale-General Dentistry Practice and Building. **DECEASED DENTIST** as of March 25th, 2012. This beautiful 11 op. office located in a highly visible prime area in Chula Vista, had collections of \$1,684,000 in 2011 and \$1,730,000 in 2010. There are 5 days of hygiene with approx. 30 new patients per month. Lasers, Intra-Oral Camera, Pan-Ceph, etc. Practice has been in this location since 1998. 100% financing available for practice and building. Staff will stay. #14394
- **EAST BAY:** For Sale-ENDODONTIC PRACTICE. The adjusted net income was \$186,000 in 2011 in this 3 operator, 1000 sq. ft. office. Includes Microscope, X-ray Scanner and PBS software. Transfer of referral base should be excellent. Ideal office for new endodontist or as a satellite practice for established practitioner. Dr. is retiring.
- **FREMONT:** For Sale-(General Dentistry Practice Facility and Equipment Sale) Beautiful Central Fremont office in upscale professional building. This is a facility sale with 4 fully equipped treatment rooms, panoramic x-ray, intra-oral camera and nitrous oxide plumbed throughout. Very modern design and efficient layout in approximately 1,400 sq. ft. Seller is relocation to a larger facility. Patients and goodwill are not included.
- **FRESNO:** For Sale-General Dentistry Facility. One of the best opportunities this year. This 3 op dental office comes equipped. It is in a great location and has about 200 active patients. Owner is in the process of completing his Orthodontic training and only works in the office 5 days a month. Complete pictures of the office and an inventory list of included furniture and fixtures are available. Everything included for only \$85,000 You can't afford to pass this up. #14383
- **FRESNO:** For Sale-General Dentistry IV Sedation Practice. (MERGER OPPORTUNITY) Owner would like to merge his practice into another high quality general dentistry or IV sedation practice. The merger would be into Buyers office. Seller would like to continue to work as either a partner or associate after the merger. 2010 collections were \$993K with a \$422K adjusted net income. There are 7 days of hygiene. #14250.
- **GLENDALE:** FACILITY SALE-General Dentistry Office Space & Leasehold Improvements Sale- Office located in a medical plaza, 1760 sq. ft. 7 operatories, computerized equipment approximately 5 years old. Two 5-year options available. #14373
- **GRASS VALLEY:** For Sale-General Dentistry Practice. GR of \$307,590 (3 days/wk) with adjusted net income of \$105K. 3 Ops. refers out most/all Ortho. Perio, Endo, Surgery. Intra-Oral Camera, Diagnodent, EZ Dental Software. Good Location. Owner retiring. #14337.
- **GRASS VALLEY:** For Sale-General Dentistry Practice. GR 545K 3 days/wk (4 avail). 3 hygiene days/week. 5 Ops (6 Avail) 1,950 sq ft. Refers out most/all Ortho, Perio, Endo, Surgery. Office has Laser, Intraoral Camera, Pano, & Dextrix Software. Owner retiring. #14372.
- **GRASS VALLEY:** For Sale-General Dentistry Practice. Gross Receipts \$491K with an adjusted net income of \$130K. Overhead 73%. Office leased 1,555 sq ft. 4 equipped operatories 5 available. Laser, Intra-Oral Camera, Cerac, & Eaglesoft software. Owner would like to retire. #37108.
- **GREATER CHICO:** For Sale-General Dentistry Practice. Gross receipts in 2010 were \$584K, with an adjusted net income of \$152K. Approx 1,100 active patients. 4 operatories, Pano, Intra-Oral Camera. Easy dental software. Leased office 1,200 sq. ft. Owner is retiring. #14359.
- **HAWAII (MAUI):** For Sale-General dentistry practice. Gross Receipts of \$636K. Office has four equipped operatories in 1198 sq.ft. Pano, Laser, I.O. Camera, Fiber Optics, 2 ½ days of hygiene. Owner retiring: Don't miss this opportunity to live and work in paradise. #20101
- **HAYWARD:** For Sale-General Dentistry Practice. This practice consists of 1,600 sq ft with 4 treatment rooms in an excellent location. 2010 Gross was \$501,000 with a \$228K adjusted net income. Dental Vision software, Average age of equipment is 8 yrs. Approximately 1,200 active patients.
- **IRVINE & COSTA MESA:** For Sale-General Dentistry practice combined. Gross receipts combined \$781K with adjusted net of \$396K. Both office spaces are leased with 4-5 ops in each. Both are 1,600 sq. ft. Irvine is equipped with Intra-Oral Camera, Pano & Dextrix. Costa Mesa is equipped with Laser, Intra-Oral Camera, Pano and Dextrix. #14355.
- **LANCASTER:** For Sale-General Dentistry Practice. This 4 operator office is located in 2,360 Sq Ft on the second floor of an attractive Medical Dental office building. Gross receipts were \$676,000 with a \$174K adjusted net income. Dentist is retiring after 39 years. 4 days of hygiene. Additional operatories could be added to existing space. Great location. #14376.
- **LEMOORE/HANFORD AREA:** For Sale-General Dentistry Practice & Building. Owner has worked in this location since 1971. Gross Receipts were \$378K with \$139K adj. net income. There are 3 equipped operatories and 3 days of hygiene. Purchase of the building is optional to the Buyer. 100% financing is available for both building and practice. Excellent opportunity for new grad or satellite practice. #14375.
- **LINDSAY:** For Sale-General Dentistry Practice & building. Gross Receipts \$330K with adjusted net income of \$219K. Office space 1,489 sq. ft., 4 equipped operatories, Intra-Oral Camera, Soft-Dent software, 3-hygiene days a week. Owner retiring. #14363
- **MILLBRAE:** For Sale-General Dentistry Practice. This beautiful, well-established office is located on the main thoroughfare of the North Peninsula, offering great exposure that generates 25-30 new patients per month. 5 treatment rooms (6th plumbed) in approx. 1,500 sq. ft. equipped with Digital Pan, Digital Imaging and Intra-Oral Camera. 2011 gross receipts of \$651,000 with \$230,000 adjusted net income. Owner is retiring. Don't delay, this won't last long! #14395
- **MODESTO-TRACY-STOCKTON AREA:** For Sale-Pediatric Practice. \$677,000 in collections in 2010 with a \$357,000 net income. This 3-chair office is located in approximately 1,250 sq. ft & has recently been remodeled. Patient Base software. Office equipped for NO2 & IV sedation. Practice has operated in its present location for 20 years.
- **MOUNTAIN VIEW:** For Sale-General Dentistry Practice: This 2 day per week satellite office is located the heart of Silicon Valley, surrounded by most of Mountain View's largest employers. 2 fully equipped treatment rooms (expandable to 4), Pano, Digital Processor and Dextrix Software in approx. 1500 sq. ft. With household names as your neighbors, few opportunities are this good! #14398
- **MORGAN HILL:** For Sale-General Dentistry Practice & Building. **DECEASED DENTIST AS OF JUNE 6TH, 2012.** The office and equipment are only 5 years old. The office is beautifully decorated and efficiently laid out with 5 operatories. The condominium space is located in highly visible, upscale, professional office building. 2011 gross receipts were

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\$846,000. Intra-oral Camera, Panoramic X-Ray and Digital X-Ray. Staff and hygiene are working daily with out-of-the-area doctor covering. Approximately 1,700 active patients. #14399

• **NEWPORT BEACH:** For Sale-General Dentistry Practice. This 4 operator practice is located in beautiful Newport Beach and is part of a larger office complex. Gross receipts were \$490K in 2011, with an average of 20 new patients per month. The office is 920 sq. ft. with Dentrux software, Dental laser, and up-to-date equipment. #14397

• **NEWPORT BEACH:** For Sale-General Dentistry Practice. Practice has operated at its present location since 1986. Located in a highly affluent Newport Beach community. Three (3) hygiene days per week. Leased office space with 4 ops. in 1,450 sq. ft. Pano & Practice Works software. #14354.

• **NORTHERN CALIFORNIA:** For Sale-Endodontic Practice. This Endodontic practice is located in an upscale professional office complex. The owners condominium occupies 1,770 sq ft. There are 4 equipped treatment rooms with an additional 5th room available. Gross Receipts were \$638K with \$239K adjusted net income. Owner will stay for transition to introduce buyer. Owner is retiring. #14251

• **NORTHERN CALIFORNIA:** For Sale-Pediatric practice. Owner has operated in same location for 32 years. Approx 1,760 active pts, 1,160 sq ft. Panoramic X-Ray, Dexis Digital and Dentrux software in this 5-chair office. 2009 Gross Receipts \$713K with 48% overhead. Owner retiring. Call for Details.

• **NORTHERN FRESNO:** For Sale-General Dentistry Practice. This is a perfect starter or satellite practice. Excellent location in North Fresno. Gross Receipts in 2010 were \$173K. Approximately 450 active patients. 3 operatories. Dentrux software. Leased office 1,200 sq. ft. Owner has been accepted to an Endodontic Residency after starting practice 1 1/2 years ago.

• **NORTH OF SAN FRANCISCO:** For Sale-PERIODONTAL PRACTICE. Owner retiring: Great opportunity for a Periodontist with experience in dental implant placement. This well-appointed practice is located in a 1,300 sq. ft. office with 4 operatories along the busy 101 corridor north of San Francisco. 2011 gross receipts of \$558,000. DSN software. Buyer will be the only full-time periodontist in an area with the population of approximately 60,000. #14396

• **OCEANSIDE:** For Sale-Modern looking office. 4 op, office space and equipment only. Belmont chairs. Gendex x-ray system, intraoral camera approx 1200 sq ft. Low overhead-Rent is \$1,900/mo, and it's a 5 year lease. Staff is available for rehire-front desk \$15/hr, assistant 13/hr. Update

all the computer systems after purchasing the office in 07. Computers and monitors in every room. #14346

• **PLUMAS COUNTY:** For Sale-3 equipped ops. Space available for 4th op. 1,245 sf office in good location. Gross Receipts \$475K. Practice in present location over 50 years. Owner is retiring. #14318

• **ROSEVILLE:** For Sale-General Dentistry Practice. Great Location. 2009 GR \$900K with adjusted net income of \$300K. 1,975 sq. ft. with 8 ops, 8 days hygiene/wk. Digital, Intra-Oral Camera, Dentrux, Trojan, fiber optics, P & C chairs - all less than 5 years old. Owner is retiring. #14327

• **SACRAMENTO:** Must be sold immediately. Well-established General Dentistry practice is desirable N. Sacramento location. Office is 1950 sq. ft. with 4 ops. plus fully functional dental lab. (porcelain oven, casting, splints) which can be converted into 2 additional ops., Digital x-rays and digital Pan, Practice Works software, 2010 Net receipts \$1,967,047. Don't assume anything about the purchase price. Inquire immediately. Purchase price is totally negotiable.

• **SACRAMENTO:** For Sale-General Dentistry Practice. Gross Receipts \$546K with adjusted net income of \$159K. Office is 2,400 sq ft with 7 operatories. Practice has been operating in the same location for the past 50 years. Pano, Softdent software. Owner to retire. #14374

• **SACRAMENTO/ROSEVILLE:** For Sale-One of many partners is retiring in this highly successful General Dentistry Group Practice. Intra-Oral Camera, Digital Pano-Dexis, electronic charts, owner Financing. Call for further information. #14334

• **SAN BERNARDINO:** For Sale-General Dentistry Practice. GR \$972K. Practice has been in its present location for the past 35 years. Leased 4,500 sq ft of office space- 12 equipped operatories. Dentrux software, Pano and Cerac. Accepts HMO. Multi-specialty practice. Owner to relocate. #14377

• **SAN DIEGO:** For Sale-General Dentistry Practice. 6 ops, Intra-Oral camera, Eagle Soft Software. Office square feet 2,300 with 3 years remaining on lease. 2009 Gross Receipts \$1,448,520, with an adjusted net income of \$545K. Doctor would like to phase out then retire. #14331

• **SAN FRANCISCO:** For Sale-General Dentistry Practice. This 1000 sq. ft. office is located in the heart of the financial district. It is a corner office with each of the 4 operatories looking out at the incredible views on Golden Gate side of the bay. The 2011 collections were \$1,200,000 with a low overhead. The practice averages approximately 15 new

patients a month.

• **SAN LUIS OBISPO:** For Sale - Two Doctor General Dentistry Practice. Gross receipts \$1,537,142 for 2010 with an adjusted net income of \$691K. The office has 2,331 sq. ft. with 8 equipped operatories. Pano, E4D, and Dentrux software. Practice started in 1990 and has been in its present location since 1998. Approx. 3000 active patients. Great location with nice views. #14353.

• **SANTA BARBARA:** For Sale-General Dentistry Practice. Wonderful opportunity to live and work in one of California's most desirable areas. 2010 Gross receipts were \$974,000 with a \$370,00 adjusted net income. Six days of hygiene. Dentrux software, Intra-Oral Camera and Panoramic X-Ray. Owner is retiring. #14382

• **SANTA CLARA:** For Sale - BUILDING ONLY: This building is located just west of Westfield Mall and Santana Row. The building has two units. One side is designed and plumbed for dentistry and the other was a law office. There is 3,776 sq. ft. of office space. The dental office is approximately 1,800 sq. ft. with 6 operatories. The building has been recently re-roofed. Excellent opportunity for a startup practice or for the dentist that needs more space. Financing available through various dental lenders. #14368

• **SANTA CRUZ:** For Sale-General Dentistry practice. This excellent practice is centrally located in a professional complex. Office is approx. 1,885 sq. ft., 4 operatories with room for one additional. There are approx. 2000 active patients with 6 days of hygiene per week. Practice Pano, Intra-Oral Camera and Easy Dental software. Owner is retiring. Reasonable lease available. #14361

• **TORRANCE:** For Sale-General Dentistry practice. This excellent practice is centrally located in a professional complex. Office is approx. 1,885 sq. ft., 4 operatories with room for one additional. There are approx. 2000 active patients with 6 days of hygiene per week. Practice Pano, Intra-Oral Camera and Easy Dental software. Owner is retiring. Reasonable lease available. #14320

• **TORRANCE:** For Sale - General Dentistry Practice. Gross Receipts \$413K with an adjusted net income of \$203K. 50% overhead. Practice has been in its present location for the past 25 years. The office has been tastefully remodeled. Office is 800+ sq. ft. with 3 equipped operatories. 4 -hygiene days per week. Doctor is to retire. #14369

• **VICTORVILLE:** For Sale - General Dentistry Practice. This practice is worked just on a three day a week schedule. There are 3 operatories with 10 off-street parking spaces. Practice has high visibility. The practice was acquired from previous owner in 2002. #14393

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maintenance of the office and stocking/ordering supplies. Experience is preferred, but the most important things we are looking for is someone who is friendly, has positive attitude with good patient rapport, and willingness to learn and grow with our office. Compensation will be based on level of experience. Please respond with resume, references and a cover letter including information about your self and desired salary to the email listed. Contact dr.mankad@brentwoodprogressivedental.com or 925-240-7024. We look forward to hearing from you.

OPPORTUNITY AVAILABLE — Full-time position, 4 days per week, \$75 per hour in dental clinic on hospital campus in beautiful Sierra Nevada Mountains. Four-season beauty with year round recreation. Located 45 minutes from Reno and Truckee. Duties include: Provide a full range of dental services to adult and child patients; services including diagnostic and preventative services, periodontal services (including root planing), amalgam and composite restorations, crown and bridge, root canals, pulpotomies, stainless steel crowns, simple extractions, extractions of soft tissue impactions, removable prosthetics to include full dentures, partial dentures and stayplates; treatment planning and referral to specialists when required; supervision of chairside registered dental assistants and registered dental hygienist; policy and procedures; assure regulatory compliance; and coordinate laboratory services; record keeping, supply management and budgeting. Contact at cconant@ephc.org or 530-832-6567.

OPPORTUNITY AVAILABLE — We are looking for Registered Dental Hygienist Alternative Practice (RDHAP) in the Bay Area. This is a unique opportunity for a motivated individual. Great compensation and flexible working

days and hours. RDHAP is a special position to provide patients with the most important oral health care service possible. Ideal candidate must enjoy being a hygienist with a positive personality and good people skills are essential. Please email your resume to parrdds@gmail.com.

OPPORTUNITY AVAILABLE — Full or part-time general dentist needed for Inland Empire area. Bilingual preferred. Please fax resume to 951-697-1116.

OPPORTUNITY AVAILABLE — Excellent associate opportunity; ownership possibilities; highly qualified, experienced dentist wanted for Friday and possibly 1 other day of the week. We are a successful, established, C&B private GP in Huntington Beach. Must have excellent communication skills. All molar RCT's are referred out. Highly trained and caring support staff. Send resume to garyschmidtdds@yahoo.com.

OPPORTUNITY AVAILABLE — Private dental practice (no HMO/Denti-Cal) looking for a friendly, energetic, fast-learner, front/back dental assistant. Must be good with computers. Experience in implants, ortho, CEREC and digital X-rays is a plus. Please only email resume, do not call office. Email dds@chinospectrumdental.com.

OPPORTUNITY AVAILABLE — We are a well-established, quality-oriented busy endodontic practice in San Jose looking for a Board Eligible/Certified, part-time associate endodontist with 1-2 years of experience. This position is 2 days a week. We are looking for a candidate who is highly motivated, enthusiastic and flexible. Candidate must possess great clinical and patient communication skills and be surgically and microscope trained. If you are looking for a long-term opportunity with unlimited professional growth, please

fax your letter of intent and CV to 408-224-5701 or email to terry@endosj.com and leave a message at 408-821-3801 stating why you believe you are a good candidate for this position.

OPPORTUNITY AVAILABLE — Our fee for service, family practice is currently looking for an enthusiastic DA or RDA. Responsibilities include chairside assisting, fabricating temporaries, coronal polishing, and helping with maintaining/ordering supplies. Experience is preferred, but the most important thing we are looking for is a friendly, positive attitude, good patient rapport, and willingness to learn and grow with our office. Competitive compensation/benefits offered for the right candidate. Please respond with resume, references and desired salary to the email listed. We look forward to hearing from you. Email bayareadentisto8@gmail.com.

OPPORTUNITY AVAILABLE — A Brand new office in Fremont is looking for a Periodontist. If you want to join a brand new office and grow with us, please send your resume to jobs1556@yahoo.com.

OPPORTUNITY AVAILABLE — We are Looking for a general dentist to manage a dental office in Fremont. This is a brand new office with state-of-the-art equipment. If you want to join a new office and grow with us, this is a great opportunity. Please send us your resume. Contact 408-361-8133.

OPPORTUNITY AVAILABLE — The Ostrow School of Dentistry at the University of Southern California invites applicants for a full time clinical-track faculty position at the rank of Assistant Professor. The selected candidate will have an appointment in the Division of Periodontology, Diagnostic Sciences and Dental Hygiene. Candidates must have a DDS or DMD degree, California license

CONTINUES ON 620



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3071 MID-PENINSULA GP

Well-established GP in desirable neighborhood. 2,400 sq. ft. facility. Ownership in building available. **PENDING**

3073 LOS GATOS FACILITY

Great location with Beautiful State-of-the-Art Dental Office with 6 fully-equipped ops in approximately 2,000 sq. ft. of a magnificent designed setting. There is one additional private op plumed and ready to go. Equipment includes the 4 chairs, 4 stools, new Vacuum & Compressor, Ultra Sonic, Trash Compactor, large TV in reception area, Spectacular Water Fall in Hall Way and 2 swing through X-Rays. Owner willing to provide long term lease and or options to renew. Asking \$195K.

3072 SOUTH BAY GP

Owner retiring from well est. 4 op GP in desirable commercial/residential mix neighborhood. Highly visible location near well travelled intersection. ~1,300 sq. ft. facility with dedicated parking lot, across from shopping plaza. Experienced & well trained, long term staff. 1,400 active patients (all fee-for-service) and 7 full days of hygiene. Ave. GR \$840K+. Owner willing to help Buyer for a smooth transition. Asking only \$503K. **SOLD**

3062 SAN JOSE OMFS

Established and well-respected OMFS available. Located in desirable professional & residential mix neighborhood 2 blocks from large mall. 1,080 sq. ft. office w/3 fully-equipped ops. Seller preparing to retire. 2010 GR \$377K+. Asking \$240K.

3049 SAN JOSE GP

Well-located, across from O'Connor Hospital, general practice in 2,118 sq. ft. state-of-the-art facility w/ 3 fully-equipped ops. 2 pvt. offices (1 can be plumbed for 4th op). Asking \$195K.

3075 DOWNTOWN SF GP

Owner retiring from well established, exceptionally successful GP in downtown, SF near Union Square. Gorgeous state-of-the-art office w/5 fully-equipped ops., 3 intra oral cameras and Zoom light. Each op has stunning views of San Francisco and the Bay. 4 year avg. GR \$831,819. Approx. 1,200 active pts. Dedicated long term staff. Owner willing to help for a smooth transition. Asking \$660K.

3059 SANTA CRUZ COUNTY GP & BDG

Charming practice tucked among soaring redwoods in Santa Cruz County. 2011 GR \$626K+ w/3 doctor days. All fee-for-service. Owner retiring and willing to help for a smooth transition. This is a great turn key practice and opportunity to own a hidden gem. Practice asking price \$373K, building is also available.

3064 SAN JOSE GP

Now available. Great turnkey opportunity. Beautiful 1,500 sq. ft. facility with 4 fully equipped ops. State-of-the-art fully networked office, Dentrux software, digital x-ray & recently purchased dental & office equipment. Avg. GR \$328K+ with 4 doctor-days. Owner willing to help in transition. Asking \$220K.

3074 SOUTH-PENINSULA GP

Successful neighborhood practice in single level medical and dental building on a highly visible corner of a well travelled intersection. ~1,500 sq. ft. office w/4 fully-equipped ops and space for 5. 2011 GR \$720K+. Asking \$523K. **PENDING**

3061 SAN JOSE DENTAL FACILITY

Dental facility ideal for Pediatric or easily converted to GP. Gross lease with utilities included expires July 2013 with 5 year option to renew. Modern, tastefully designed, approximately 1,321 square feet. Asking \$95K. **SOLD**

3067 MID-PENINSULA GP

Gorgeous modern, highly visible GP in 3,000 sq. ft. office w/7 fully equipped ops. Approx. 1,600 active pts. & avg. 16 new pts./month. 4 doctor-days/week. 5 years avg. GR \$991K+. Asking \$808K. **SOLD**



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CLASSIFIEDS, CONTINUED FROM 618

or eligibility for California licensure, and board-certified or eligible in periodontology. Preference will be given to candidates with academic experience in didactic and clinical teaching in periodontology. The candidate is expected to lead an effort to develop and teach curriculum related to periodontology in collaboration with the disciplines of oral medicine, oral pathology, oral radiology, orthodontics, prosthodontics, endodontics and restorative dentistry. The primary responsibility will be clinical and didactic instruction at the pre-doctoral and post-doctoral level. Please see <https://jobs.usc.edu> for further information.

OPPORTUNITY AVAILABLE — Endodontist needed 1 day per week for our group practice in a rewarding work environment. Please email resume to crl7165@yahoo.com.

OPPORTUNITY AVAILABLE — United Indian Health Services (UIHS) located in Arcata, a non-profit community clinic providing health care to American Indian people and their families, is seeking a full-time dentist to provide outpatient care. Located in beautiful Northern California, UIHS offers an opportunity for personal and professional growth. This position will work closely with a team of other dentists and hygienists in

providing culturally sensitive, high quality and comprehensive health care services to the Indian Community. Computer skills and ability to work in fast paced environment required. Qualifications: Graduated from a United States accredited dental school, CA dental license, CA dental X-ray certificate, Controlled Substances Registration Certificate, be able to be enrolled as a Medi-Cal or other insurance provider, CPR certified or obtain certification within six months, valid driver license, and be covered by agency vehicle insurance plan. Submit a cover letter, CV and application (found at www.uihs.org). Email trudy.adams@crihb.net or phone 707-825-4036.

OPPORTUNITY AVAILABLE — Part-time associate general dentist needed in a busy private practice in Stockton, CA. Must be experienced in all phases of dentistry. Please email your CV to neilria@yahoo.com.

OPPORTUNITY AVAILABLE — Pediatric dental practice in San Diego, looking for graduating class/residents for an employment opportunity. Associate opportunities for pediatric dentists in the San Diego County area. Join our team and be a part of something as extraordinary as the children you treat. With three locations, we are looking for someone compatible who is personable, enthusiastic, caring and someone who loves what he/she does. Currently, we're seeking both part-time and full-time positions. For more information on our practice, please feel free to check out our website at thesuperdentists.com and send your resumes to pedsclinicalmanager@thesuperdentists.com or fax to 619-216-3677 for more information on the opportunity.

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- 6008 MENDOCINO COAST'S FORT BRAGG** 2011 collected \$725,000. 4-days of Hygiene. 4-ops (each with own computer), digital radiography. Great family community.
- 6018 SAN JOSE'S CAMPBELL** Successful practice in esteemed Group. Seller averages net production of \$440,000 (excludes Hygiene), collections of \$430,000 and Profits of \$200,000. Group performs at \$3.8 Million/year level.
- 6020 PEDO PRACTICE - ATTRACTIVE NORCAL FAMILY COMMUNITY** 2011 Collected \$455,000 on 26 hour work week with Profits of \$208,000. 2012 is trending \$600,000. \$230,000 invested here. Beautiful office. Full price \$240,000.
- 6022 SAN FRANCISCO'S NORTH BAY - SEBASTOPOL DENTAL OFFICE** 8 miles west of Santa Rosa. Beautiful office in great family community. Total investment of \$230,000. Asking \$65,000.
- 6023 LOS GATOS - "SOLD"** 2011 collected \$240,000 on 3-days. 6-year office has \$215,000 invested. Adec delivery systems, Adec cabinets, digital radiography, digital Pano and paperless charting.
- 6024 PERIO PRACTICE - SAN FRANCISCO'S SOUTH BAY** Collected \$600,000 in 2011 on 19-hour week with 7 weeks off. Great second office or excellent base to build upon.
- 6025 CENTRAL MARIN COUNTY** Well established, collected \$490,000 in 2011 on 3-day week. 3-Ops. 2+ days of hygiene.
- 6026 SACRAMENTO** Collected \$825,000 on 3-day week with no marketing. Great foundation which could be developed into a busier practice.
- 6027 PLEASANTON** Well cared for practice with conservative Owner. Collected \$500,000 with Profits of \$260,000 in 2011. Office remodeled 3-years ago at cost of \$60,000. Beautiful!
- 6028 BERKELEY'S ALTA BATES MEDICAL VILLAGE** 2011 collected \$525,000. Collections first 4-months of 2012 totaled \$210,000. 3-chair office. Busy Hygiene schedule.

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- 3193 PALM DESERT** Grossing \$400,000+. Great Location.
- 3237 ANAHEIM HILLS** Solo group member wanted-Hi-identity-HiTech share beautiful space.
- 3250 ANAHEIM** NW Disneyland. Part time Seller. 2 days wk. Hi identity corner. Grossing \$370K in '09. 1,800 sq. ft. 5 Ops equipped. Low rent.
- 3283 PALMDALE/LANCASTER** Hi growth area. GP Gross \$1.5 mil. 40% Net. Small town! 5 min from Bakersfield. RE available.
- SMALL TOWN** Minutes from Bakersfield. Modern RE. Practice Grosses \$20-to-\$40K per month. Bargain.
- APPLE VALLEY/HESPERIA** Gr \$700 to \$800 Free Std Bldg Avail Absentee.
- 3287 SOUTHERN CALIFORNIA - "SOLD"** \$6 Million per year. Prestigious Hi identity location. 12,000 sq.ft. \$1.00/sq.ft. \$30K Cap/mo. Requires substantial net worth. Nets \$1+ Million.
- 3290 SANTA PAULA, NEAR FILLMORE** Hi identity location. Gross \$400,000+. Established 2006. 5-ops, 3 equipped. Beautiful office. Steady growth.
- 3297 SOUTH BAY** Location Only. Free standing Dental bldg on main street.
- TEMECULA/HEMET** HMO. Gr. \$700,000 part time. 8 ops fantastic location Million Dollar corner. Full Price \$565K.
- ORANGE** Grosses \$30K+/mth. 5 ops. Beautiful. Rent \$2,000. FP \$250K.
- HEMET/TEMECULA** HMO. Absentee owner. Grosses \$700K. PPS says Buyer will do \$1.5 Million within 18 months. Special Situation.
- TORRANCE** Special Diamond Location. Hi Identity. Will Gr \$500K first year. \$125K FP.
- VICTORVILLE-APPLE VALLEY-HESPERIA AREA** Estb 20 yrs. Gr \$700K+. Net approx \$300K. More vol avail. 8 op. Hi identity shop ctr. FP \$650K. Serious Seller. Can do \$1 Million.
- SANTA ANA** Super Hi identity intersection. 50,000 to 75,000 auto/day. 5 ops. Grossing \$40-to-\$60K/mth. Net \$200,000 to \$300,000. Great opportunity to build Million Dollar office here.
- LANCASTER** Estb 50 years - Hi identity central location, low overhead. Gross \$480,000 by part time owner. Seller can work back per new owner. Five operatories.
- ORANGE COUNTY** Beautiful office. Right buyer will gross \$2 million first year. Financing in place. Need Entrepreneur who has team of specialists in place or Dentist with multiple talents. HMO/PPO/Ins/Cash. Includes 9 days hygiene. 10,000 charts. As stated, right team will do \$2 million first year.
- BEVERLY HILLS** Implant Center \$1,450,000; 3 ops - 1,450 sq.ft. Beautiful facility access to neighbors CT Imaging Center. Full price \$995,000 a bargain - BH most prestigious Dental building. Pride of ownership - Pros would work back for transition. Moving to Desert.
- HAWAIIAN GARDENS** Hispanic practice. Grossing near \$500,000. Beautiful 5 ops in shopping center.
- TEMECULA - HEMET** Grosses \$700,000 part time. 8-ops. Million dollar location.
- CORONA HMO** Gross \$70-to-\$80K month absentee. Low overhead.
- MARINO VALLEY** Gross \$600K. Beautiful office. Low Overhead. Absentee Owner.
- SAN FERNANDO VALLEY** \$1,000,000 opportunity to do \$2,000,000. Very valuable R.E. Hi identity. Rent or purchase R.E.
- APPLE VALLEY CLASSIC** \$600,000+. Low overhead.



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ANTELOPE VALLEY – (7) op comput. G.P. in a free stand bldg. Bldg. also available. Newer eqt., digital x-rays, Annual Gross Collect \$1.5M. Cash/Ins/PPO pts. 20-30 new pts/mos. **NEW BAKERSFIELD #21** – (10) op G.P. & Bldg. on a main St. (3) ops fully eqt'd. (3) ops part eqt'd & (4) add. plumbed. Store front. Collects ~\$500K/yr. Cash/Ins/PPO/<1% Denti-Cal. **REDUCED CENTRAL VALLEY/So. FRESNO COUNTY** – (3) op comput. G.P. in smaller town w/ ltd. competition. Newer eqt. Networked & digital. Dentrux & Dexis. Gross Collect \$40K+/mos **NEW COVINA #3** – (3) op comput. G.P. Cash/Ins/PPO. Gross Collect \$242K+ on an easy (3) day wk. Located in a small prof/medical/dental bldg. w/ off street parking. Seller retiring. **SOLD GLENDORA** – (3) op comput. G.P. Cash/Ins/PPO very small % Denti-Cal pt. base. Very low overhead office with a very high % net. 2011 Gross Collect \$296K+. Seller moving. **REDUCED HACIENDA HTS.** – (2) op G.P. in a Shop Ctr. Cash/Ins/PPO. 2011 Collect \$164K p.t. **NEW IRVINE** – (3) op Turnkey office located in a shop. ctr. Newer equipment. Reasonable rent. **NEW L.A. (SILVERLAKE - ATWATER)** – (3) op G.P. located in a centrally located retail store front w/ exposure. (28) years of Goodwill. Cash/Ins/PPO. Gross Collect \$140K p.t. **SOLD NORTHRIDGE** – (6) op comput. G.P., (5) ops eqt'd. (6th) partially eqt'd. In a remodeled prof. bldg. Cash/Ins/PPO/HMO pts. Approx. \$3K/mos in cap cks. Annual Gross Collect \$400K+. **NEW OXNARD #6** – Turnkey w/ charts. (4) ops/3 eqt'd Comput/networked/digital. Gorgeous! **PORT HUENEME #1** – (3) op comput G.P. in a Strip Ctr w/ exposure. Cash/Ins/PPO & small % HMO. Collect \$220K/yr p.t. No advert. Associate run. Owner/Operator can do better. **SOLD PORT HUENEME #2** – Turnkey w/ charts. (4) op/3 eqt'd. G.P. Digital. Strip Ctr. **REDUCED RESEDA #6** – (3) op comput G.P. located in a prof. bldg. Gross Collect. ~\$150K/yr p.t. Cash/Ins/PPO pts. Digital X-rays & Dentrux. Great starter or 2nd office. **BRING ALL OFFERS RIVERSIDE** – Clean & well maintained (3) op G.P. in a Shop. Ctr. Retiring DDS works (2-3) relaxed day/wk. Cash/Ins/PPO small % Denti-Cal. Annual Gross Collect \$180K. **Back on market SAN JOAQUIN VALLEY** – G.P. & Bldg. in small town w/ ltd. competition. (4) op comput. office. Cash/Ins/PPO. Annual Gross Collect \$325K+. Very low overhead. Seller retiring. **NEW SANTA BARBARA #3** – (3) op comput. G.P. in a prof/med/dental bldg. Cash/Ins/PPO. 8-10 new pts/mos. Gross Collect. \$250K+ on a (4) day wk. Digital x-ray. Seller retiring. **REDUCED So. TULARE COUNTY - PORTERVILLE AREA** – (6) op comput. G.P. in a major Shop. Ctr. Exposure/visibility/signage. Cash/Ins/PPO/Kids Denti-Cal pts. Gross Collect. \$500K+/yr. **SUNLAND** – (3) op Turnkey office located in a shop. ctr. Modern eqt. Digital x-rays. **NEW UPCOMING PRACTICES:** Anaheim, Beverly Hills, Camarillo, Corona, Montebello, Northridge, Panorama City, Pasadena, SFV, San Diego, Thousand Oaks, Torrance, & Vista.

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DENTAL EQUIPMENT FOR SALE — Zoom 2 Light for sale along with accessories/Zoom kits. Lightly used but in excellent condition. All reasonable offers will be considered. Contact 925-240-7024.

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DR. BOB, CONTINUED FROM 626

attending dinners honoring them for “outwitting, outplaying, outlasting” their peer group. They would be pleased to be called “survivor,” but the name has already been copyrighted. “Geezer” is considered too undignified to the majority of this group that is almost entirely comprised of petite little women accoutered as if the Queen were dropping by for tea.

The single factor encompassing the entire spectrum of senior citizens is the phenomenon known as the “senior moment.” Every senior of any stripe not only recognizes the condition, but embraces it as an entitlement cheerfully dismissing any number of querulous episodes involving temporary memory loss.

Probably the most-commonly encountered senior moment is that of doggedly marching into, say, the kitchen to get or do or find something, only to find oneself suddenly frozen into a sudden cataleptic inability to recall what the mission was. The fridge? The cupboard? A drink of water? Should another senior present recognize the contretemps, the advice given is, “Go back where you came from and start all over. Maybe you’ll remember.” This solution actually works about 50 percent of the time. The other 50 percent results in embarking on an entirely unrelated project. Then everybody present cackles in good-natured empathy. This is good. Seniors laugh ruefully at a number of things even less humorous.

So this has been occurring even back to Adam and Eve forgetting to forego the apple — and they weren’t even seniors at the time. “Seniors to *what*?” Adam asked uncertainly. “To *whom*,” Eve corrected. No explanation needed, just part of the human condition was the accepted explanation until one day recently back at the University of Notre Dame when psychology Professor Gabriel Radvansky had a nonsenior idea.

The single factor encompassing the entire spectrum of senior citizens is the phenomenon known as the “senior moment.”

Maybe just passing through doorways is the cause of these memory lapses, he mused. An interesting hypothesis we agree publically but privately conclude this is the dumbest idea we ever heard. We were directed to the *Quarterly Journal of Experimental Psychology* where Dr. Radvansky suggested that doorways serve as “event boundaries” that separate “episodes of activity and files them away.” Sensing his audience may be searching furtively for the exit despite his having said something epochal, the treatise goes on to explain how he chose a group of college students in an experiment to discover if merely passing through an event boundary (doorway) blew chances of retrieving thoughts or decisions made in a different room.

We would submit that college students might not make the most reliable subjects inasmuch as they tend to forget a lot of things just sitting around doing nothing, or even more things while indulging youthful mania with no doorways adding to the frustration. The study doesn’t say whether the students were seniors or freshman, so a senior moment that resulted during the experiment might mean that legitimate seniors would not have exclusive rights to the phenomenon. The elders don’t appreciate poaching on any of their perks, arguing that college kids have plenty of other avenues to mental lapses.

Although the whole procedure was too complicated to recapitulate here, the

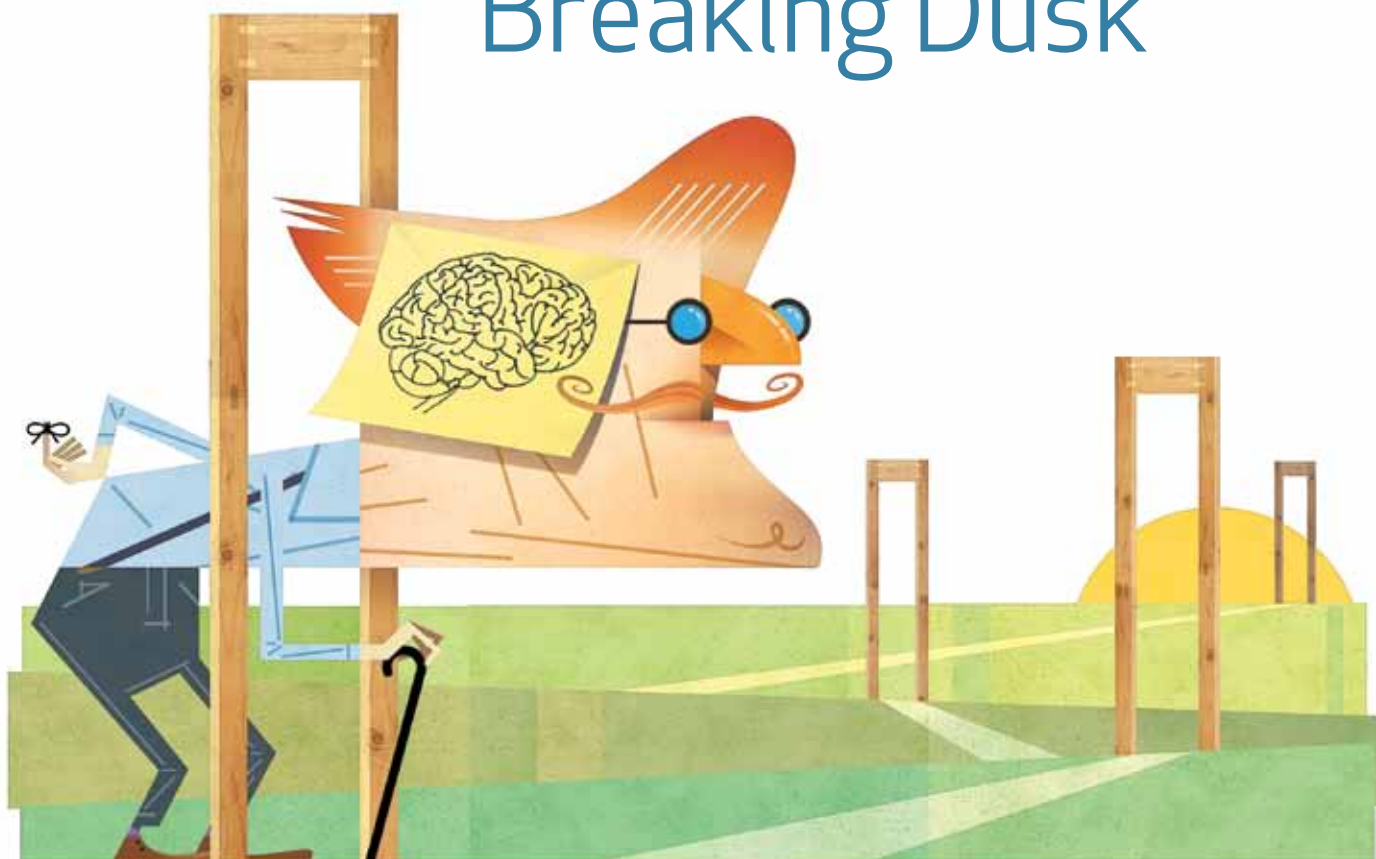
conclusion seemed to be that, yes, walking through doorways diminished the ability to retrieve thoughts more than walking across a room passing through no doorways at all. Participants found their original ideas became “compartmentalized” on the wrong side of the doorway. Old age had nothing to do with it or substance abuse, apparently.

Much as I admire Notre Dame, the Fighting Irish and Charles Laughton’s portrayal of the hunchback who used to lurk about the premises in another country far, far away, I determined to launch an experiment of my own. I would imbed in my cerebral cortex a mental note of seven things I wished to obtain, then walk a block away to a Ralph’s supermarket and see what I got home with. No sooner had I passed through the market’s doorway and laid hands on the grocery cart, than four of the items vanished from my memory. At the checkout register, I was billed for 15 items, only two of which were in my initial memory.

My conclusion revealed one major flaw in Professor Radvansky’s study and served to reinforce the obvious — if you want to have a serious discussion of memory loss, lose the college kids and ask the seniors. That esteemed group knows that to retain aplomb under stress, one must navigate one’s way through life’s doorways with *lists*. Never leave home — no, never even leave a room without a list of things to be done.

Granted that a man with a terrible memory forgets everything and a woman with a terrible memory *remembers* everything, the “List” is the answer. A Post-it note in the color of your choice, stuck on the handle of your grocery cart, pasted, if necessary, on the inside of your glasses is the way to go, because memory — a capricious minx — is only reliable for making you wonder what you’ve forgotten to do. Write that down. ■■■■

The Golden Years: Breaking Dusk



According to those who have found themselves surprisingly in their 80s already, they are the *real* senior citizens.

➔ Robert E.
Horseman,
DDS

ILLUSTRATION
BY VAL B. MINA

At some obscure time in the past — near as I can remember — anyone arriving at the age of 55 automatically became a senior citizen by default. These individuals began to enjoy certain retail discounts like early-bird specials at restaurants that served two entrees for the price of one starting at 4:30 p.m. if it could be verified by hair coloring or weathered facial features they were qualified. It was an arbitrary number that was advanced to age 62 when too many diners arrived who knew a bargain when they saw one but were obviously in condition to climb Everest with a walker or stroll the Boston Marathon in less than 24 hours.

The senior citizen title is still an unstable one with an added category of 55+

meant to include everybody up to age 115. This 60-year span is too broad and satisfies nobody. According to those who have found themselves surprisingly in their 80s already, they are the real senior citizens and indisposed to fraternize with those whippersnappers in their 60s and 70s. “They ain’t seen nuthin’ yet,” chortle the duffers, seamed cheeks glowing like pip-pins. A lesser number who are into their ninth decade just shake their heads like rear window wobbly dolls, busy fingering the search engines in their iPhones for the word that means more senior than senior.

At the very top is a growing group of 100+ individuals incontestably above all this wrangling because they are too busy

CONTINUES ON 625

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