INSTITUTE FOR
Oral Health
IOHWA.ORG

2011

whitepaper

2011 conference

Prevention

Rebranding the Profession

October 27 & 28, 2011
Chicago, Illinois

:: whitepaper excerpt ::

David Wong, DMD, DMSc

Writer | Designer: Gavin James | gjamesdesign.com

"Building a future based on prevention would give us the win-win situation we are all looking for. It would decrease costs and increase quality of care. I believe that's the only hope we have of moving forward."

--Dr. John Luther

As caries rates reach epidemic proportions in children across America, and millions of people have unmet dental needs, the dental profession faces a greater challenge than ever before. To improve oral health nationwide, the goals are changing from finding better ways to manage disease to imperatives of preventing disease. Toward that end, the Institute for Oral Health (IOH) dedicated 2011 to the theme of prevention, exploring evidence-based best practices and innovative models of care that are advancing disease prevention and early intervention.

In October 2011, the IOH hosted our fifth national conference in Chicago, Illinois on "**Prevention: Rebranding the Profession**." The event spotlighted impressive steps forward in risk assessment, reducing early childhood caries, integration with primary care, new dental roles and effective collaborations to advance prevention, as well as guiding principles for longevity from the world's healthiest cultures. The conference welcomed guest speakers from across dentistry, medicine, dental benefits, health policy, and the American Dental Association (ADA).

Key prevention strategies discussed at the conference included:

- Risk assessment and early disease detection – Many experts agree that prevention in oral health needs to include a framework centered on caries risk assessment. One progressive approach is an assessment form that reduces the dental office burden by engaging patients to self-assess, and providing choices for treatment strategies that best fit patient needs and willingness to adopt healthier behaviors. Additionally, innovations in salivary diagnostics may soon make it possible for dental teams to conduct quick, scientifically accurate chairside tests to detect the presence of an array of diseases within minutes.
- Preventive dental visits by age one – Studies confirm that children who receive their first preventive dental services by age one have lower incidence of caries over time and require fewer hospital visits for restorative care. As a result, these early visits dramatically reduce the cost of care. Reaching parents early also helps them understand oral health milestones and increases continued usage of dental services to prevent early childhood caries.
- Socially-relevant behavior modification – An innovative model has been introduced that provides an interactive, visually appealing mobile application that community health workers can use to engage parents in childhood caries risk assessment and oral health education. Using simple, culturally relevant language and nutrition references, the system helps guide low-income, low-literacy minority families toward adopting healthier behaviors that help reduce and prevent caries.
- New dental roles to increase access to preventive services – New training programs are underway that establish a new dental team member, the Dental Therapist. Skilled in basic dental services, oral health counseling, and practice management, the Dental Therapist helps increase practice capacity for basic oral exams, risk assessments, and preventive

services, and works closely with families to help them understand ways to maintain good oral health and reduce tooth decay. Another program underway is the ADA-sponsored training for Community Dental Health Coordinators (CDHCs). Supporting the low-income communities in which they live, CDHCs serve as a trusted resource to provide culturally-sensitive oral health education, coordinate access to dental care, and perform basic dental services and risk assessments for families in public health settings.

- Engaging primary care providers in oral health – As family physicians and pediatricians have more frequent access to young children, these primary care providers are increasingly taking advantage of oral health training programs to help reduce early childhood caries. Providing basic oral screenings, fluoride varnish, and oral health education, they help families understand the connections between oral health and overall health, and the importance of starting dental prevention early to reduce caries risk over time.

Stay up to date on 2012 Institute for Oral Health events

Our 2012 theme is "The Evolution of Oral Health Care Delivery." Throughout the year, the Institute for Oral Health will host focus groups with industry experts, participate in national oral health events, and convene our **6th annual national conference on October 4 & 5, 2012 in Boston, Massachusetts**. Keep up with the latest news and findings through our website (IOHWA.ORG), whitepapers, quarterly newsletter, and Facebook fan page. Additionally, check out the latest advances in oral health care on our site's special section "Innovation Central."

About the Institute for Oral Health

The Institute for Oral Health is dedicated to improving oral health in America by bridging the gap between research and everyday dental practice. Serving as a central resource for education and collaboration, IOH brings together nationally recognized experts to focus on important themes of concern in oral health care today, and works to promote innovation and adoption of progressive treatment guidelines, dental plans, and delivery methods.

learn more

Web: **IOHWA.ORG**

Become a Fan on Facebook

David Wong, DMD, DMSc

Associate Dean of Research, Filex & Mildred Yip Endowed Professor of Oral Biology, Oral Biology & Medicine, and Director of Dental Research Institute at UCLA School of Dentistry

Saliva: The New Diagnostic Frontier

A powerful opportunity for disease prevention is emerging in new technologies being developed in the arena of salivary diagnostics. As a primary indicator of oral health, saliva provides a world of insight and is now being used to detect and even predict disease. At the 2011 Institute for Oral Health conference, Dr. David Wong, a leading researcher in salivary diagnostics at the UCLA School of Dentistry, discussed how their progressive work aims to accelerate diagnosis and treatment, reduce health disparities, and enhance dentistry and medicine as a whole. He focused on the development of salivary diagnostics, the role it plays in oral and systemic diseases, and how these diagnostics can help integrate dentistry and primary health care.

The Rising Need for Salivary Diagnostics

On a practical level, a key goal driving the development of salivary diagnostics is to provide a more expedient and cost-effective tool for detecting disease. To illustrate this idea, Dr. Wong highlighted a scenario around Sjőgren's Syndrome, a disease brought into public awareness when it interrupted the high powered career of tennis star, Venus Williams. If a patient complained of dry mouth, dry eyes, joint pain, and chronic fatigue, a dentist would likely refer them to specialists, where a triage cycle might include a half dozen tests over several weeks. For the patient it means thousands of dollars of expense and weeks of mounting anxiety waiting for results about their condition. As this disease often goes undetected for years, and is known to develop into B-cell lymphoma in about 10% of patients, it is a good example in which early detection through simple screening –such as salivary diagnostics– could make a world of difference in overall patient health, as well as substantially reducing the cost of care.

With Sjőgren's Syndrome, which primarily affects moisture-producing glands, scientists have now identified 26 biomarkers in saliva that can help detect the disease. In the scenario above, this means that instead of embarking on a lengthy and costly triage cycle, the dentist could conduct a simple, chairside saliva test that would detect within minutes whether the patient had the disease. The positive impacts on both the patient and provider are clear; and more significant when we scale up this concept to more high profile diseases, such as oral cancer, breast cancer, and diabetes.

So where are we now in terms of the science and capability to affect such results? Closer than you might think. Point of care technology for salivary diagnostics is being refined that would enable quick, chairside results for detecting a wide range of diseases. With important data delivered in real-time, dentists could contribute to early detection, make appropriate referrals to medical colleagues,

and design dental treatment plans that help ensure the most successful health outcomes.

How Salivary Diagnostics Helps Detect Disease

Saliva is essentially a diagnostic tool. It provides valuable insights for early detection of caries, periodontal disease, and oral cancer, as well as indicators for systemic diseases. Additionally, saliva offers a quick, easy, and cost-effective way to monitor the health of the mouth and the body.

"Across cultures, saliva often carries a negative connotation, which has translated into the clinical world. But soon, the scientific credibility of this oral fluid –in terms of diagnostic evaluation and biological content– will dissipate the social, psychological, and behavioral negativity."

–Dr. David Wong

On a daily basis, the salivary glands produce a liter and a half of fluid, which carries with it "disease discriminatory information." Scientists have learned that the complex structure of the glands enables saliva to capture information "communicated" by diseases. That data is being harnessed in tools for salivary diagnostics. With this information we can more rapidly detect the presence and severity of oral (and systemic) diseases to help ensure patients receive the most appropriate care.

To ensure the scientific findings translate into practical clinical use, Dr. Wong's research team at UCLA has developed a publically available online database called the Salivaomics Knowledge Base (www.skb.ucla.edu). This web-based resource provides information on the biology, diagnostic potential, and pharmacological implications of saliva. The site offers data breakdowns by five diagnostic alphabets in saliva: proteome, transcriptome, microRNA, metabolome, and genome. Why? Because not every disease identifies itself through proteomes; however, saliva is sophisticated enough to deliver data on numerous levels, making the possibilities of disease detection more sophisticated.

How Salivary Diagnostics Helps Detect Disease

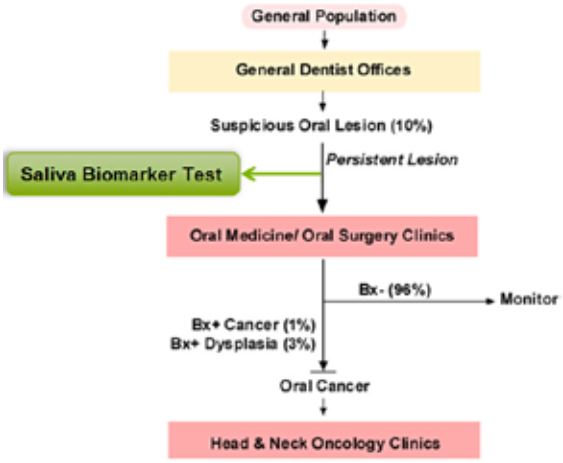
While dental professionals welcome the advance of oral health research, what they need most are practical tools they can apply in every practice. Dr. Wong highlighted a few real-time examples of what salivary diagnostics can mean for early detection and prevention of oral diseases. While the technology is not fully ready for daily dental practice, rapid progress is bringing it closer to clinical reality.

Detecting oral cancer

As the sixth most common cancer, 350,000 new cases of oral cancer appear every year. For the past three to four decades, the survival rate has remained at about five years, which reflects a dire need for effective early screening technology. Dr. Wong's UCLA Lab identified four critical oral cancer biomarkers in saliva, and prioritized their impact on survival rates. When mapped across the four stages of cancer, early detection of oral cancer equates to a 60-80% chance of survival, compared with only 20-40% survival rates for late stage detection of the disease. This represents a substantial improvement in health outcomes, as well as improved quality of life for the patient, and significant reduction of cost burden on the health care system.

Another benefit of saliva testing as a diagnostic tool is the simplicity. As it requires no complex training or supervision, it can easily be incorporated into the daily flow of a dental practice.

As an example, during a typical exam, a dentist might find a suspicious oral lesion and apply treatment to relieve it. If the patient returns and the lesion persists, the dentist usually refers the patient to an oral surgeon for a biopsy to detect or rule out oral cancer. Because about 96% of these biopsies are found to be cancer-free, it could be more beneficial for both patients and providers to get an immediate, less costly answer during the initial visit. With an FDA-approved, scientifically credible saliva biomarker test done quickly at chairside, the patient could avoid invasive surgery, avoid the higher costs of treatment and time away from work or school, and avoid the anxiety of a lengthy wait for test results. For dentists, the saliva test could deliver valuable data in real-time, enabling appropriate treatment strategies to be put into action at the earliest opportunity. Furthermore, patients could easily be retested every few months to monitor the condition.



Engaging dentists in medical disease detection

An added consideration in salivary diagnostics is how dentists can play a role in the detection of systemic diseases. Despite the overwhelming numbers of unmet dental need across the country, statistics show that more Americans visit a dentist regularly (72%) than see a physician (43%) in a typical year. Dentists are in a unique position to offer saliva screening for high-risk patients who may be candidates for common cancers and chronic diseases such as diabetes and osteoporosis. As a measure of receptiveness across the dental industry, a recent survey cited that nearly 88% percent of dentists would be willing to collect oral fluids to help screen for medical conditions. This approach represents an important step in advancing oral health as part of overall health, a "compelling, empowering vision of where the dental profession can be, moving forward."

> *"The clinical impact of salivary diagnostics is immense. Every year we have 210,000 new cases of breast cancer. Factor that into a screening scenario, and it's enormous. Add in the emotional impact, because that really needs to be addressed as well."*
>
> *–Dr. David Wong*

To highlight a success story, Dr. Wong cited a study in which his team identified eight salivary mRNA and one protein biomarkers that can detect breast cancer with 92% clinical accuracy. Today, when symptoms are detected, the patient is directed to get a surgical biopsy. Even if it turns out to be cancer-free, which is often the case, the patient has been subjected to a costly, invasive procedure, and several weeks of incredible anxiety. If an easy, scientifically credible, chairside evaluation was available, caregivers on many fronts –primary care physicians, dentists, breast cancer centers, etc.– could inform patients immediately as to their disease risk and appropriate next steps.

> "*We need to take these outcomes and march them forward as definitive, pivotal clinical evaluations that meet FDA standards. We're energized and focused on that, because if we don't do that, the level of interest from industry, diagnostic, pharmaceutical, would be at best a curiosity. They would not commit to the business path needed to carry this forward to clinical maturation. That's what we would like to do, because 50 years from now this early disease detection could become clinical reality. I think that's what we all want to see.*"