

# JADE

Journal of the Academy of Distinguished Educators

SPRING 2014

VOLUME 2 NUMBER 1

## Interprofessional Education and Practice:

A Concept Whose  
Time Has Come



**JADE**, the Journal of the Academy of Distinguished Educators, is published twice annually by New York University College of Dentistry.

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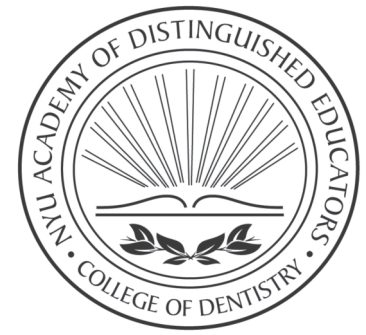
**Contributors**

Kathleen Klink, MD, FAAFP  
Health Resources and Services  
Administration  
Washington, DC

Renée Joskow, DDS, MPH, FAGD, FACD  
Health Resources and Services  
Administration  
Washington, DC

Judith Haber, PhD, APRN, BC, FAAN  
New York University  
New York, New York

Marko Vujicic, PhD  
American Dental Association  
Chicago, Illinois



"The focus at a number of academic institutions is to move the educational process out of the siloed way in which it currently occurs—medicine taught independently from nursing from pharmacy and so on—to a movement to enhance the interactions of all health professions students."

Richard Valachovic  
Executive Director  
American Dental Education Association  
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## Interprofessional Education and Practice: A Concept Whose Time Has Come

At a recent faculty retreat sponsored by the NYU Department of Epidemiology and Health Promotion, we were asked to think of an instance in our professional lives which represented a “peak” experience—one in which we felt both fulfilled and valued, and one which embodied the way in which we would want to work every day. I thought of several “peak” experiences: There was the time I sent a clinic patient to a hematologist to make certain he was checked for a rare but potentially life-threatening disease that would surely affect his dental treatment. Indeed, as a result of my efforts, he was tested and ultimately diagnosed with a condition that had somehow been overlooked by his physician.

I also recalled the time I insisted that my own faculty practice patient see the nurses at the NYU College of Nursing Faculty Practice, located at the NYU College of Dentistry, to have her blood pressure checked. She was ultimately diagnosed with hypertension and is still, years later, being treated and monitored for the condition in our nursing faculty practice. There were also the weekends last spring that I spent with dental faculty and students at Sikh Gurdwara, the Sikh Center of New York, supervising oral health screenings for a medical school project. We worked alongside physicians and nurses who were screening for hypertension and diabetes in an effort to accurately assess the needs of the community regarding general and oral health. To me, these all represented “peak” experiences in that I felt challenged by my situation; was rewarded for my hard work, persistence, curiosity and vigilance; and was pleased by a positive outcome. And, in all cases, the work was interprofessional, a way of teaching, of scientific cooperation, of clinical or public health practice where various and sometimes seemingly disparate groups of educators, researchers, practitioners, and policymakers come together and work toward a common goal.

Why were these instances of “interprofessional collaboration” so central in my mind when asked about positive experiences? We neither live nor work in a vacuum, surrounded only by others like us, but in a busy, sometimes disorganized, sometimes crazy world where input from others, with different training, experiences, and values, is not only important, but often essential to achieving our objectives: educating and training our students and residents, achieving health for our patients or for the population, understanding how a system or a problem can be solved. I have found that, for me, seeing a problem through the lens of another, from that person’s point of view, helps me consider factors involved in solving the problem that I had not considered. I have also found that input from those from other disciplines, with different education, knowledge, and skills, improves the final product, whether a lecture or course, a research protocol, a manuscript, or a patient’s health. Although I don’t actively think about it every day, much of what I now do in my professional life is founded on “interprofessional collaboration.”



**By Stefanie L. Russell, DDS, MPH, PhD**  
Associate Professor of Periodontology and Implant Dentistry and of Epidemiology and Health Promotion  
New York University College of Dentistry

**“We neither live nor work in a vacuum, surrounded only by others like us, but in a busy, sometimes disorganized, sometimes crazy world where input from others, with different training, experiences, and values, is not only important, but often essential to achieving our objectives.”**

## Working in Interprofessional Research Teams

In much of my research, I work with physicians, nurses, and dental hygienists to integrate oral and general health care. For example, Mary Northridge and I, with funding from the Clinical Translational Science Institute at the NYU Langone Medical Center, have worked with a team that includes dentists and dental students, dental hygienists, information technology specialists, nursing and medical school faculty, to develop a clinical decision support system for dental hygienists to use chairside in private practice. This web-based system, developed with input from private practice hygienists and dentists, and utilizing professional guidelines and best practices, assists hygienists in screening their patients for diabetes, hypertension, and tobacco cessation, and for nutritional counseling. All members of the team had input on this project; indeed, the project would not have been successful *without* the input of all involved.

In other research, I have been working closely with a team comprising obstetricians, nurses, dentists, dental hygienists, and clinic office staff to investigate the efficacy of a dental care referral system for pregnant women. Based on the *New York Oral Health Care During Pregnancy and Early Childhood Practice Guidelines*, a hospital-based prenatal clinic on Long Island has been referring pregnant women who report no recent dental examination to community dentists for evaluation, prevention, and treatment. The prenatal care providers integrated oral health risk assessment and referral into their routine prenatal care and thereby hoped to improve oral health care utilization by their patients. In a survey of the prenatal clinic patients, we found that, among those women who reported they had been referred for dental

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care by their prenatal provider, 63.4 percent reported having seen a dentist during their pregnancy. In contrast, of those who reported no referral, only 29.0 percent stated they had seen a dentist. We believe that this dental referral program may serve as a model for improving access to, and utilization of, dental care for these low-income pregnant women—a group with traditionally low rates of dental care utilization but with high unmet needs.

## Practicing and Teaching in Interprofessional Contexts

I have come to believe that in order to adapt and move forward as educators, researchers, and clinicians, we need to embrace interprofessional collaboration, although for many of us, working in teams and with “outside input” is foreign to the way we were trained and are used to working (and therefore is likely to be a bit intimidating). The dental profession, both educationally and clinically, has traditionally been somewhat isolated from other disciplines, such as medicine, nursing, and social work, although most would recognize the obvious benefits of having close ties with physicians, nurses, social workers, and other professionals for our students and patients. But as healthcare policy, reimbursement, and research funding has changed in recent years, a trend has emerged away from teaching, scientific inquiry, and practice performed in isolation, toward more

interprofessional, collaborative work. For example, in practice, the solo private practice model, so prevalent until only recently, has begun to die out in favor of a team approach, which often includes hygienists and dentists with varying specialties in one practice, sometimes with close ties to medical practices where they are able to refer patients for needed medical care.

Empirically, there is evidence that interprofessional collaboration improves educational outcomes, quality of research, and patient and population health outcomes over any one discipline working alone. By bringing together various skills and individual experiences into a team, communication and coordination of care are enhanced, scientific inquiry deepens and expands, and health and safety improve. In addition, meeting the needs of underserved, diverse populations is more achievable when various parties and stakeholders come together to work on a problem together.

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## Interprofessional Collaboration Engenders Peak Experiences

Because reaching beyond the borders of our profession is fast becoming a central issue of our time, in this, the second issue of the *Journal of the Academy of Distinguished Educators (JADE)*, we are fortunate to have three outstanding contributions that define and expand upon interprofessional collaboration and what it means for dentistry to embrace this model of thinking, teaching, and working.

Our centerpiece article, by Kathleen Klink and Renée Joskow, embraces the vision of integration of oral and general health which originated with the surgeon general's report *Oral Health in America* in 2000 and describes in detail important conferences, reports, and policies which have arisen since then to promote the concept of interprofessional collaboration for oral health professionals. The authors emphasize the need to integrate education across disciplines, using new models of teaching; highlight the importance of engaging the public using outreach and education; and cogently argue for policy and financial changes supporting interdisciplinary partnerships.

In her commentary, Judith Haber effectively argues for a greater integration of oral health and general health in the teaching of dental, medical, and nursing students, and emphasizes that it is our obligation as teachers and educators to “reach across academic silos” to improve oral and overall health. She clearly outlines various challenges to this goal, but is able to envision great opportunities in overcoming these challenges.

In a second commentary, Marko Vujicic discusses how dental care financing in the United States has impacted oral

healthcare delivery, access, and utilization. He makes the case that the separation of oral health from overall health in the United States, regarding financing of care, has influenced the oral health of the U.S. population, and highlights how it may be difficult—if not impossible—to reconnect the mouth to the body without rethinking how dental care might be integrated into health payer systems.

As I think further about engendering peak experiences in dental education, research, and clinical practice going forward, I recall the words of Ryunosuke Satoro, a Japanese poet, which I believe embody the essence of interprofessional collaboration: “Individually, we are one drop. Together, we are an ocean.” Would you rather be a drop or an ocean?

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Funding support for the interprofessional research described herein was provided by grant UL1 TR000038 from the National Center for the Advancement of Translational Science (NCATS), National Institutes of Health, for the project titled “Primary Care Coordination by Dental Hygienists at Chairside: Developing and Evaluating an Electronic Tool” (Co-PIs: Northridge and Russell), and an NYU College of Dentistry Dean's Award for the project titled “Oral Health of Pregnant Women” (PI: Russell).

# Interprofessional Education and Practice: An Opportunity to Reunite the Mouth with the Body and Make the Patient Whole



**By Kathleen Klink, MD, FFAFP**  
Immediate Past Director,  
Division of Medicine  
and Dentistry, Bureau of Health  
Professions, Health Resources and  
Services Administration (HRSA)  
U.S. Department of Health and Human  
Services

We embrace a vision of all people enjoying oral health as part of overall health. Our vision begins with the people most affected by poor oral health: vulnerable populations at risk for the crippling illnesses of decaying teeth, gingival damage, and cancer—individuals, people—before they are “patients.”

In keeping with the admonition attributed to Albert Einstein that the definition of insanity is doing the same thing over and over again and expecting different results, our thesis is that in order to realize a vision of oral health for all, change is mandatory. We cannot continue to act in the same old ways and expect different outcomes.

After providing an overview of national oral health issues and current Federal activities, this article will highlight some innovative concepts to improve oral health outcomes. Hopefully these ideas and suggestions will not fit Einstein’s description of insanity, but will stimulate real change to improve oral health, which is to say, to improve health.

Oral health, as a critical component of health, is embedded in the World Health Organization’s 1948 broadened definition: “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.” (1)

*Oral Health in America: A Report of the Surgeon General*, published in 2000, spotlighted the devastating reality of poor oral health in America. (2) The lack of effective oral health education, hygiene,

and preventive services across the nation has led to an immense need for dental and craniofacial repair, restoration, and treatment, to the point that the need for complex repair has now become the national norm. The array of disorders,



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many of which can be attributed to socioeconomic and behavioral etiologies, is particularly prevalent and severe in vulnerable populations, disproportionately affecting the poor and underrepresented minorities—those least in a position to afford necessary treatment.

Oral disease, complex in nature, directly affects one’s quality and standard of living, including sustenance (chewing and eating), self-image and esteem, communication, productivity, and employability. The afflicted and affected are often found among lower socioeconomic strata as a direct impact and burden of poor oral health, unattractive dentition, and loss of facial structure.

The American health system has historically separated oral health care from overall health in both professional education and practice. As a direct result of the educational and practice environment, the majority of medical professionals are not knowledgeable about and are not practicing oral health prevention, diagnosis, treatment, and referral to the extent necessary to change population-level health outcomes.

In 2003, under the leadership of Surgeon General Richard Carmona, a publication titled *A National Call to Action to Promote Oral Health* described the national burden of poor oral health and called for “adequate public and private health personnel and resources” to meet national needs and to integrate oral health with general health. (3) A variety of systemic issues, including lack of payment or reimbursement for prevention and education, poor dental insurance coverage, and policy makers’ incomplete perceptions of the oral disease burden in the population have contributed to an untenable situation. Actions recommended in the *Call to Action* include improving access to care for overburdened populations, addressing disparities, and enhancing the workforce, including through increased representation of underrepresented minorities.

The Department of Health and Human Services (DHHS) Strategic Plan, FY 2010–2015, in reference to oral health calls on the Department to “expand the primary oral health care team and promote models that incorporate new providers, expanded scope of existing providers, and utilization of medical providers to provide evidence-based oral health preventive services, where appropriate.” (4)

At the 2013 National Oral Health Conference (5), DHHS Assistant Secretary Howard K. Koh announced the DHHS Oral Health Strategic Framework to facilitate improved coordination of efforts to integrate oral health activities across the Department. The purpose of the Framework is to move closer to a greater collective impact within DHHS, and to set the stage for effective public-private



**By Renée Joskow, DDS, MPH, FAGD, FACD**  
 HRSA Senior Dental Advisor and Chief, Oral Health Branch; Bureau of Health Professions, HRSA; U.S. Department of Health and Human Services

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**“The unified health home that integrates oral health into general primary care incorporates overall clinical outcomes aligned with quality and financial measures. Oral health competencies and curriculum can no longer be considered an ‘add-on’ but must be seamlessly incorporated into existing practice processes and patterns with emphasis on interrelated care.”**

collaborations addressing the multiple issues at play that affect outcomes, including prevention, health literacy, access to care, dental workforce, financing models, data and research, and health disparities.

Multiple demonstrations and a variety of partnerships have evolved to respond to geographic variations, available resources, and population-specific traditions and perspectives—all designed to train and deploy workers in a variety of scenarios. As pilots are completed and studies are published, models are emerging that demonstrate improved outcomes. Some examples were reported in *The U.S. Oral Health Workforce in the Coming Decade: Workshop Summary* in 2009. (6) These examples highlight a trend toward reinforcing the current clinical workforce with new types of professionals trained to assess and respond to specific community and population needs.

The Community Dental Health Coordinator (CDHC), for example, engages the community under the supervision of a dentist and focuses on patient education, prevention, health promotion, and behavioral change. In Alaska, the Dental Health Aide Therapist (DHAT) model, adapted from the New Zealand prototype, emphasizes prevention and definitive care in remote areas and is likened to a physician assistant who practices concurrently with physicians. These providers are recruited from and return to practice in high-need communities. The Dental Therapist (DT) model developed in Minnesota is designed to deliver screening, triage, preventive education, sealant application, restorative dental procedures, and basic extractions in community settings. (7) Rural and underrepresented minority talent is recruited through pipeline programs.

Two Institute of Medicine (IOM) reports in 2011 updated and further highlighted oral health issues and offered recommendations to begin to ameliorate problems faced by Americans across generations, including the 4.6 million children left

out of dental care due to poverty (9), and 33.3 million persons living in Dental Health Professional Shortage Areas. (10)

Prominent among the recommendations in the IOM reports are specific references to workforce development, including who is trained, how they are trained, and where they should be deployed to effectively improve population and individual outcomes. Increasing the diversity and refining the cultural competency of these workers in providing care is a key consideration. According to the IOM reports, “Interprofessional, team-based care has the potential to improve care-coordination, patient outcomes, and produce cost savings, yet most health care professionals are not trained to work in either intra- or interdisciplinary teams.” (11)

Previously, in a 2010 report, the Health Resources and Services Administration (HRSA) Advisory Committee on Training in Primary Care Medicine and Dentistry recommended that “training grants should provide funds to develop, implement, and evaluate training programs that promote interprofessional practice in the Patient-Centered Medical-Dental Home model of care.” (12)

The unified health home that integrates oral health into general primary care incorporates overall clinical outcomes aligned with quality and financial measures. Oral health competencies and curriculum can no longer be considered an “add-on” but must be seamlessly incorporated into existing practice processes and patterns with emphasis on interrelated care. The health system infrastructure that facilitates referrals, knowledge exchange, and follow-up among the care team in a patient-centered model must be pursued and achieved.

A new operational paradigm needs to be established that will build on a knowledge base reflecting shared values and goals that commit to actions necessary to advance population oral health. These efforts must include primary care clinicians, public health practitioners, pharmacists, philanthropic representatives, and government (particularly HRSA), where a number of

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activities, including development of the oral health core clinical competencies for primary care professionals, are ongoing. A set of domains and associated competencies represents an essential minimum that each practice and profession may build upon as needed and appropriate. In order to transform the current paradigm, where medicine and dentistry are practiced separately and care of the patient is partitioned at the oral cavity, it will take true champions, visionaries, and those willing to pledge to reunite the mouth with the body to make the person/patient whole. Meaningful evolution toward shared goals requires a commitment to change, including leading those who are comfortable with the status quo.”

Interprofessional practice must be aligned and rooted in integrated, collaborative training and education that encompasses both fundamental didactic knowledge and critical experiential learning necessary to support a cohesive, seamless, unified approach to meet the health needs of communities. Many efforts are underway to encourage health professions institutions to develop integrated experiential education using a multipronged approach throughout the process of pipeline recruitment, professional education, accreditation, and practice, including recruitment and

retention policies in community settings. Examples include HRSA-funded collaborative practice and education models among schools of nursing and dentistry, as well as development of oral health curricula for medical schools and practicing physicians. In addition, promising practice models of physician assistant training include integrating oral health into review of systems and physical diagnosis modules, examinations, and even credentialing. Federal funding from HRSA supports pilot programs to expand statewide already successful community models aimed at integrating oral health into perinatal care for the infant and mother. Integrating oral health education, screening, preventive interventions and treatment into perinatal care is an excellent opportunity to reconnect the mouth with the body during an important stage of the life cycle.

It is critically important to keep focused on the goal of oral health integration and primary care: better health outcomes.

Outcome improvement falls into three categories: engaging the public and affected populations through public health efforts, creating an educational paradigm shift that integrates faculty and learner preparation for new models, and embedding financial incentives in health system redesign.

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**Engaging the Public and Affected Individuals and Populations**

The perspective of the individual within an affected group determines outcomes. Without engagement, outreach, education, prevention, and “buy-in,” care is not effective. Engagement of the public includes understanding the needs and the levels of intervention that are acceptable, such as the amount of investment, time and commitment necessary to initiate and sustain change. Achieving enduring solutions and improved health outcomes necessitates assuring that the vision is shared and prioritized by all stakeholders.

For example, a community with an extremely high prevalence of heart disease was the target of a university intervention study to assess community based education to decrease cholesterol and high blood pressure. There was poor attendance and lackluster enthusiasm for each community event and it was apparent that the intervention (education) was not valued by the community. A follow up survey was administered and surprisingly, heart disease was ranked as a priority by community members but crime and personal security were overwhelmingly ranked as the number one concern of all respondents. (13) (14) When considering how to maximize impact and thus, change behavior, it behooves all partners to work towards collective impact. This example underscores the essential need to engage and retain the public on issues that impact their oral and overall health if substantial improvement is to be achieved.

In order to access evidence-based, high-quality oral health care for all, across the generations, the underserved and vulnerable must be included and be part of the solution. To overcome the barriers that contribute to oral health disparities, it is necessary to prioritize disease prevention, expand service settings, and prepare a “diverse and expanded array of providers competent, compensated, and authorized to provide evidence-based care” to an informed public. (15) It is critically important that the role of the public be recognized in determining the path forward in addressing oral health disparities.

**“Dentistry must no longer be allocated to separate walls, buildings, and missions, but it must be integrated into the larger health paradigm in order to yield a substantial and necessary impact.”**

**Creating an Educational Paradigm Shift That Integrates Faculty and Learner Preparation for New Models**

Dental education is shifting from strictly brick-and-mortar institutions to include community-based learning where students are educated by a distributed faculty. The community-based (CB) model arose with the goal and promise to provide more graduating dentists to work in underserved or higher-need geographic areas. The new CB dental education model provides increased clinical experience in a number of settings and has increased the length of time senior students and residents spend in community-based rotations from an average of 10 days in 2002-03 to 52 days in 2006-07. Participating schools have seen an increase in enrollment of underrepresented minority students. (16)

Competencies taught and acquired in CB models need to be integrated into educational, accreditation, and certification standards. These models provide a unique opportunity for interprofessional, team-based learning and patient-centered care.

Interprofessional, team-based care requires training and education within an environment where team-based learning can occur. It is imperative that health professions faculty be competent and experienced in dealing with the complexities associated with caring for the whole patient. Participating faculty may hold appointments in multiple professional schools and share a set of core clinical competencies taught and practiced in schools of nursing, public health, and medicine, as well as in dental schools. Mechanisms to achieve widening of the traditional patient-centered team necessitate faculty trained through robust interprofessional faculty development programs. Training non-dental, primary care clinicians improves their ability to recognize oral disease and appropriately manage it and strengthens the medical acumen of dental clinicians. In addition, practice changes resulting from this training can lead to increased access to preventive services and referral, as well as to decreased dental disease. Dentistry must no longer be allocated to separate walls, buildings, and missions, but it must be integrated into the larger health paradigm in order to yield a substantial and necessary impact.

**Embedding Financial Incentives in Health System Redesign**

A multifaceted approach to align interrelated but disparate systems is required. The business case must be clarified and quantified through use of standardized oral health clinical measures that are reported with resulting health and financial accountability data. The links between oral and systemic

health, risk assessment parameters, preventive measures (including hygiene and education), along with diagnosis, treatment, and referral, are all needed if the management of oral health issues is to change. In addition to utilizing the five levers of intervention — policy, funding, technical assistance, data, and partnerships—there is also a need for system-wide incentives, such as the electronic health record.

An integrated, user-friendly, electronic health record supports an improved patient experience, tracks care across settings, is accessible to patients and multiple clinicians with provisions to include communication and educational and resource access. EHR associated systems should be used to identify and define essential data elements that can facilitate measurement of health improvement and provide systems that support utilization analysis and inform decision making leading to improved planning and patient satisfaction. These systems must support data sharing of medical and dental records and of laboratory and other tests, plus allow portability.

Financial system modifications are required to encourage, incentivize, and support desired outcomes. Opportunities to align public and private resources toward common outcomes are being sought by leaders with vision and experience in policy, systems change, finance, and education. An exemplar of stakeholder collaboration is the U.S. National Oral Health Alliance, which strives for collective impact for improved oral health for vulnerable populations across the nation. (17)

Incentives and financial tools such as scholarships, student loan repayment programs, and increased Medicaid reimbursement can be leveraged to build a competent, quality workforce poised to serve in underserved areas. Integrating oral health, public health, and non-dental primary care exploits common and shared perspectives to bridge gaps among the systems of health care, education, payment, and delivery.

To improve outcomes, these initiatives require that leaders—educators and health professionals—incorporate oral health into education programs, accreditation standards, professional licensing, reimbursement mechanisms, continuing education, and practice—indeed, into the entire health enterprise.

Driving change to improve health requires integration of overall health with oral health and the recognition that the mouth is inseparable from the body. This vision is intrinsic to ensuring the well-being of individuals and the population. Incorporation of education and practice of oral and medical health professionals will launch better health outcomes for all populations, especially those most vulnerable.

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## BUILDING A CULTURE OF COLLABORATION: INTERPROFESSIONAL EDUCATION AND PRACTICE



**By Judith Haber, PhD, APRN, BC, FAAN**  
Associate Dean for Graduate Programs  
The Ursula Springer Leadership Professor in Nursing  
College of Nursing  
New York University

It is hard to imagine that for decades the importance of a major public health problem like oral health and its relation to overall health has gone virtually unnoticed in the professional education and practice of physicians, nurse practitioners, midwives, physician assistants, and pharmacists, the most likely health professionals to play a leadership role in advancing patient-centered care.

Identified in *Healthy People 2020* (USDHHS, 2011) as one of the 10 Leading Health Indicators, oral health all too often remains a domain for the professional preparation of dentists and dental hygienists, disconnecting the mouth from the rest of the body as an integral dimension of overall health. In fact, for physicians, nurse practitioners, and physician assistants, even the traditional physical examination of the head and neck acronym, HEENT, does not signify inclusion of the oral cavity in a way that HEENOT would! Using the HEENOT approach means that primary care educators and clinicians CANNOT omit oral health from the assessment, diagnosis, and management of their patients' overall health.

We are at a jumping-off point, a point ripe for ending professional content and practice silos! Publication of recent Institute of Medicine reports (2011a;

2011b), which documented the need to build interprofessional (IP) oral health workforce capacity, provided support for developing interprofessional oral health core competencies for primary care providers. The new *Interprofessional Education Competencies* (IPEC, 2011) and interprofessional accreditation standards for dentistry, nursing, medicine, and pharmacy have created momentum for educators to begin to reach across academic silos. Rapid changes in the healthcare paradigm have been propelled by anticipation of healthcare reform: integrated healthcare delivery systems, accountable care organizations, primary care medical homes, and patient-centered care have all challenged educators and clinicians alike to prepare our graduates to function effectively in this healthcare environment, competent to deliver on the Institute for Healthcare Improvement's (IHI, 2014) "Triple Aim," illustrated in the figure on the next page. As faculty, we need to commit to preparing graduates who are practice-ready to work in teams to improve the patient experience, improve the health of populations, and reduce the cost of health care. Oral-systemic health is poised to become the perfect example of interprofessional competencies in order to build an IP workforce that can actualize the "Triple Aim."

Health professions education programs that are committed to transforming their curricula to develop IP competencies confront multiple challenges at the student, faculty, and organizational levels. Foremost is the organizational challenge for the leader-

*"The new *Interprofessional Education Competencies* (IPEC, 2011) and interprofessional accreditation standards for dentistry, nursing, medicine, and pharmacy have created momentum for educators to begin to reach across academic silos."*

ship of each academic or clinical unit to examine their values about: a) the importance of oral health and the links to overall health, b) the commitment to an IP culture change, and c) the allocation of resources to support building IP infrastructure and curriculum/practice implementation. Signaling support from the leadership

team is essential to obtaining internal stakeholder “buy-in” and cultivating IP change champions who will play formal and informal leadership roles. Resource allocation communicates organizational support about faculty interprofessional competency development as a strategic priority.

Another challenge is deciding the number of professions that will participate in IP oral health experiences. Professional egos need to be checked at the door; participants need to assess their IP Teamwork IQ. Making IP experiences “fun” is key to early successes; “wins” are important in sustaining the enthusiasm of early adopters. Engaging a small group of key stakeholder schools or departments as partners is more pragmatic. Because faculty tend to teach and practice the way they were prepared, faculty development is essential. For dental education faculty who most commonly practice in a private practice environment outside of healthcare organizations, it may be a challenge to embrace IP and general health competencies themselves,

much less be role models of them for their students. Nursing and medical school faculty, whose education and

not undermine the “Explicit” IP curriculum, both IP and oral health messaging need to be consistent so that students

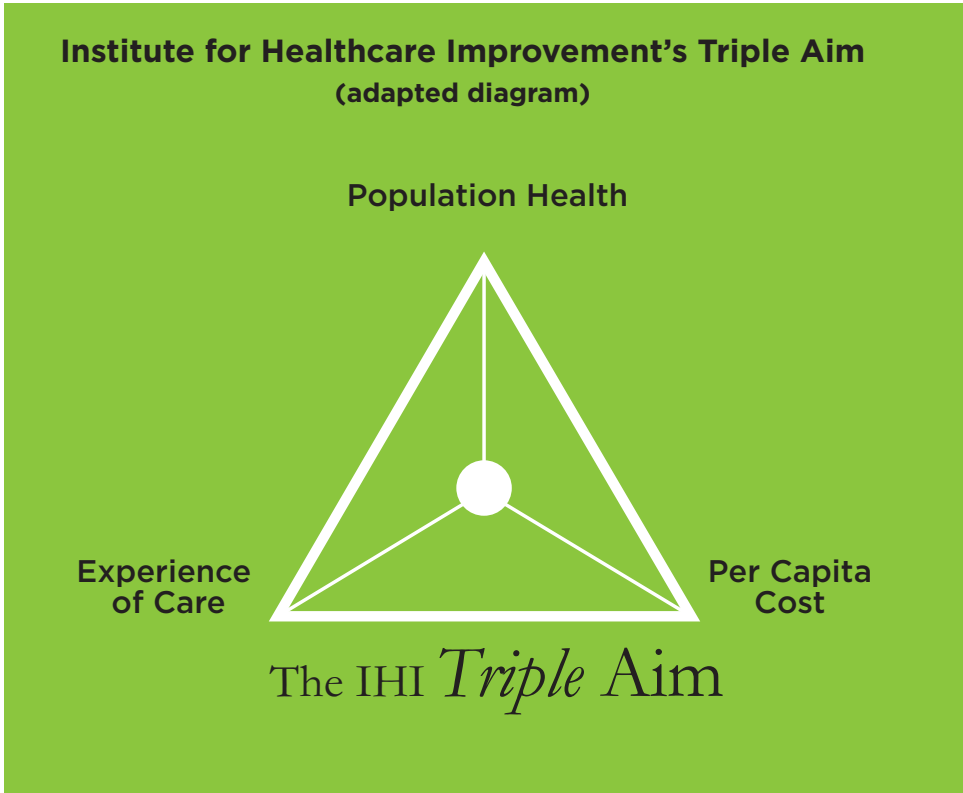
have effective IP role models in dental, nursing, and medical classroom and clinical settings. Faculty development is a critical factor in promoting culture change. It promotes relationship

building across the professions, as well as ownership and accountability for the success of the IP initiative(s), in turn creating an IP support network and a critical mass of change champions. Standardizing the curriculum so that all students are exposed to multiple practice reflect a dearth of oral health content and clinical focus, will have to meet the challenge of developing an IP oral health knowledge base and clinical competencies as well as the IP competencies. In order to maximize the likelihood that the “Implicit” IP curriculum does

building across the professions, as well as ownership and accountability for the success of the IP initiative(s), in turn creating an IP support network and a critical mass of change champions.

Standardizing the curriculum so that all students are exposed to multiple

**“Rapid changes in the healthcare paradigm have been propelled by anticipation of healthcare reform: integrated healthcare delivery systems, accountable care organizations, primary care medical homes, and patient-centered care have all challenged educators and clinicians alike to prepare our graduates to function effectively in this healthcare environment, competent to deliver on the Institute for Healthcare Improvement’s (IHI, 2014) ‘Triple Aim.’ ” (Illustrated below.)**



“doses,” delivered in an incremental, timed sequence across the curriculum, is consistent with the long-term goal of creating an IP oral health culture change, but it represents another IP challenge. Interprofessional initiatives that are intermittent and/or rely on volunteers tend to attract a skewed faculty and student sample of “true believers,” who may become change champions but don’t reflect the organization’s general enthusiasm for or commitment to oral health and/or IP curriculum integration. Faculty are challenged to be innovative facilitators rather than “talking heads” in developing and implementing IP classroom and/or clinical experiences. For decades, we have had students from across the health professions in the same basic science courses, but students typically interact only with members of their own profession. Interprofessional clinical experiences that capitalize on

existing courses, clerkships, and clinical rotations are optimal for weaving oral-systemic health and IP competencies into the curriculum without creating “extra courses or rotations.” They also make a case for clinical com-

petency development which sets the stage for a post-graduation approach to implementing the “Triple Aim.”

In making this paradigm shift, faculty are asked to embrace the role of facilitator and use educational technology to bring students together in virtual and

face-to-face experiences using simulation, standardized patients, virtual cases, telehealth, debates, and service learning experiences, to mention a few options. For example, the Smiles for Life interprofessional, web-based oral health curriculum for primary care providers ([www.smilesforlifeoralhealth.com](http://www.smilesforlifeoralhealth.com)) can be used for faculty development and curriculum integration. The use of technology is also an effective way to engage a generation of students for whom this is a preferred learning modality, as well as a vehicle to transcend the administrator and faculty trauma of conflicting academic calendars and schedules.

The final challenge is to determine how we will know that integrating IP oral health core competencies and/or IP competencies makes a difference in the patient experience, in the quality of population health outcomes, or in the afford-

ability of health care. Evaluation is essential. Health professions schools and faculty must commit to evaluating development of oral health and IP competencies. Use of educational technology, including simulation and the electronic health record, are effective tools for

documenting clinical competencies. Course evaluations with specific and sometimes customized items about the integration of oral health and IP competencies are effective, and there is an array of measurement tools that assess perception of IP competence, attitude change,

and team building. Having an evidence base that indicates we have prepared graduates from dentistry, nursing, medicine, and other health professions who are competent to meet the nation’s IP oral health population health needs is an important outcome.

Data that reveal our graduates continue to use an interprofessional practice framework to positively impact patient experiences, improve population health, and reduce the cost of health care will be the ultimate test of IP effectiveness. As Ryunosuke Satoro wrote, “Individually, we are one drop. Together, we are an ocean.” It is in building a culture of collaboration that we will have a collective impact in interprofessional oral health education and practice.

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**By Marko Vujicic, PhD**  
 Managing Vice President  
 Health Policy Resources Center  
 American Dental Association

## Reconnecting Mouth and Body Requires Rethinking Dental Care Financing

The mouth is incontestably linked to the body. Unsurprisingly, oral health plays a critical role in whole-body health. Although the relationships are not fully understood, oral health is linked to several chronic conditions. For example, periodontal health is associated with a lower risk of heart disease and diabetes. These links are increasingly important given that 1 in 12 Americans (and 1 in 4 seniors) has some form of diabetes, and almost half of U.S. adults suffer from periodontal disease. Dental caries is the most prevalent chronic disease among children and could lead to significant development problems and cause physical disabilities.

The benefits of oral health extend beyond just whole-body health. For every 100 children ages 5 through 17, it is estimated that three days of school are missed each year because of dental symptoms and treatment. For every 100 employees, two days of work are lost each year due to poor oral health. Diminished oral health, including the loss of teeth, has also recently been linked with lower cognitive function throughout adult life and even lower career earnings. There are also potential medical cost savings associated with increased dental care use and improved mouth health. For example, treatment of periodontal disease has been associated with lower overall medical costs among patients with diabetes, heart disease, and stroke.

**“When one looks at how dental care is financed in the U.S. health-care system, the status of the mouth is not that clear.”**

But when one looks at how dental care is financed in the U.S. healthcare system, the status of the mouth is not that clear. Take Medicaid, for example, which is the second largest source of health insurance coverage for Americans. Dental care coverage is mandatory for children, but optional for adults. Most states have chosen to provide only limited dental benefits to Medicaid adults. This dual approach within this critical safety net program has had important implications. (1) Among low-income children dental care use

has increased significantly in recent years, while among low-income adults, it has decreased. Low-income adults have experienced the sharpest increases in financial barriers to dental care and emergency room use for dental conditions. It is not surprising, then, that dental care is financed very differently from medical care. According to the most recent data, about 8 percent of dental care spending comes from public sources, mainly Medicaid, compared to 36 percent of general health-care spending. About 42 percent of dental spending is out of pocket, compared to 11 percent of health-care spending. (2)

Going forward, the Affordable Care Act (ACA) in many ways reinforces this disconnect of the mouth and body among adults. Dental coverage for children is part of the essential benefits package, although for a variety of reasons the pediatric dental benefit mandate will actually not be enforced. But adult dental care is not considered ‘essential’ under the ACA. Recognizing



the importance of attracting providers in Medicaid programs, the ACA mandates significant reimbursement rate increases for many primary care services. In this provision, too, dental care is excluded. However, other aspects of the ACA provide an opportunity to rethink how dental care is delivered and financed as well as to reexamine the role of dentists within the healthcare system. (3)

As care delivery slowly shifts to Accountable Care Organizations (ACOs) and provider reimbursement shifts away from fee-for-service to value- or outcome-based payment, there will be unprecedented opportunities to raise the profile of oral health within the primary care system. The immediate opportunities will be within the pediatric population, where dental benefits coverage will expand significantly, and within the Medicaid population, including adults who live in states that provide an extensive adult Medicaid benefit. This is because these groups carry with them a source of financing for dental care, which is a major factor that will drive ACOs to incorporate dental care into the basket of services they provide to their clients.

The speed at which tomorrow's ACOs proceed down this path of expanding their provision of dental care services will depend on many factors. First, if oral health or dental care measures are directly included within the outcome measures the ACOs are evaluated against, this will provide a strong incentive to expand dental care services.

Second, if financing for dental care services is included in the calculation of per-population payment the ACO receives for each client, this ensures that ACOs are de facto expected to provide dental care services. But even if dental care financing remains siloed, this does not mean that ACOs will not expand into dental care services. If the ACOs of tomorrow find themselves with a client base with extensive commercial dental coverage through stand-alone dental plans, or a Medicaid client base with dental benefits paid for through a separate Medicaid dental program, there will still be interest in expanding dental care services.

Third, if ACOs can find (or build) a robust network of dental care providers relatively easily, this makes it much easier to incorporate dental care services. If it becomes operationally challenging to find dental care providers interested in participating in an outcomes-driven, mixed fee-for-service and bundled payment contracting arrangement, then dental care services are less likely to be incorporated into the ACO's basket of services.

**“A central question for the policy community going forward is: Can we truly reconnect the mouth and the body without rethinking how we finance and deliver dental care?”**

For all three of these factors, there is a high degree of uncertainty on how things will evolve moving forward. While most ACOs today do not provide dental care, the few that do demonstrate the benefit this brings in terms of more satisfied clients and lower healthcare costs, for example, due to avoided emer-

gency room use. (4) In terms of dental care financing, a new analysis shows that over one-quarter of medical plans being offered in the newly established health insurance marketplaces include an embedded pediatric dental benefit. (5) If there is significant take-up of such plans by consumers, then this could shift the way dental care is financed in a post-ACA world, with less stand-alone dental fi-

nancing and more integrated medical-dental care financing.

In essence, at the highest level, a central question for the policy community going forward is: Can we truly reconnect the mouth and the body without rethinking how we finance and deliver dental care? The coming years will bring incredible change to the U.S. healthcare system with much more integration and interprofessional collaboration. (6) It is important for the oral health community to take advantage of these opportunities to ensure continued progress in improving America's oral health.

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