

Transforming Dental Hygiene Education

Proud Past, Unlimited Future

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Introduction

On September 18, 2013, the American Dental Hygienists' Association (ADHA) hosted a symposium, titled Transforming Dental Hygiene Education: Proud Past, Unlimited Future. The symposium was the result of the collaboration between ADHA, the Santa Fe Group, and ADHA's Institute for Oral Health. ADHA's mission is to advance the art and science of dental hygiene by working to ensure access to quality oral health care; increase awareness of the benefits of prevention; and promote the highest standards of dental hygiene education, licensure, practice, and research while representing and promoting the interests of dental hygienists. The Santa Fe Group is an organization of dental thought leaders dedicated to improving the Nation's oral and general health. The ADHA Institute for Oral Health seeks to advance the profession of dental hygiene through scholarships, research, and service in collaboration with ADHA. Denise Bowers, president of ADHA, and Linda Niessen, president of the Santa Fe Group, welcomed over 100 attendees, representing dental and other health care professionals, educators, insurers, researchers, and officials from both the public and private sectors.

The goal of the three-day meeting was to discuss how the profession would need to transform its educational process to achieve expanded roles and new opportunities for dental hygienists in the future. Panelists provided participants with historical overviews of the dental hygiene profession and discussed ways in which dental hygiene could learn from other health care professions that have transformed their curricula. A strategic planning workshop was held at the end of the meeting that provided attendees an opportunity to discuss strategies for that future.

The U.S. Department of Health and Human Services, Health Resources and Services Administration (HRSA) is the primary Federal agency responsible for improving access to health services for the underserved, uninsured, isolated and medically vulnerable. A goal of HRSA's strategic plan is to expand oral health services and integrate oral health in to primary care settings. HRSA recognizes a shortage of dental providers to care for underserved people and acknowledges the important role of dental hygienists in improving access to oral health care. Future growth of the dental hygiene profession will require examination of the profession's current curriculum and recommendations for its transformation. It is for these reasons that HRSA contracted with

ADHA to develop proceedings of the symposium and a white paper based on the proceedings.

The Transformation of the US Health Care System

Michael Sparer, JD, PhD, department chair, Health Policy and Management, Columbia University Mailman School of Public Health delivered the opening keynote address, The Transformation of the U.S. Health Care System.

Sparer said changes underway in health care and health care delivery in America could drive the transformation of dental hygiene education. These changes are the same, social and economic factors that drove the development of the Patient Protection and Affordable Care Act (ACA) in 2009: concern for the 45 million Americans who lack or have very limited health insurance coverage, the need to contain the cost of health care (more than \$3 trillion a year and 18 percent of gross domestic product), and the desire to create a better and more efficient health care delivery system.

Sparer discussed how provisions in the ACA were designed to address these concerns. He pointed out that these provisions dovetail with trends in health care that are already evident and that will inform the environment in which dental hygienists will frame a new curriculum requiring new practice competencies. To make that happen, he concluded, will require the ability to lead and manage change.

Questions and comments from the audience addressed urbanization, demographics, and the prevalence of chronic over acute disease as well as the role of social determinants of disease. Sparer acknowledged the importance of these considerations to the future of dental hygiene and pointed out that the Columbia University's School of Medicine had revised its core curriculum with such trends in mind. In particular, Sparer said, social determinants of disease contribute more to health or disease than health care does.

Other comments addressed increasing the scope of dental hygiene practice and a history of resistance on the part of dentistry, the management of health professional accreditation in an increasingly integrated environment, and the challenge of maintaining a pipeline of diverse applicants.

From Whence We Came: The Evolution of Dental Hygienists' Practice and Curriculum Development

Day two of the symposium opened with a panel that reviewed the beginnings of the dental hygiene profession and its educational preparation. The panel, titled “From Whence We Came: The Evolution of Dental Hygienists' Practice and Curriculum Development,” was moderated by Linda Niessen, DMD, MPH, MPP, president, Santa Fe group, and Denise Bowers, RDH, PhD, president, American Dental Hygienists' Association.

Alyssa Picard, PhD, field representative of the American Federation of Teachers, University of Michigan presented an overview of American oral health and oral health care beginning in 1900. She discussed the state of American oral health and of the dental profession prior to the creation of dental hygiene. She explained how the dental hygiene profession was created as a result of efforts of dentists who worked to help children, especially poor children, and were committed to advanced education and training. These dentists developed programs such as that started by Alfred C. Fones in Bridgeport, Conn., to teach women to clean children's teeth, and established dental clinics in schools where the women could work. She discussed the gender-specific characteristics associated with women — primarily patience with children and meticulous tasks — that would lead to the evolution of dental hygiene as a predominantly female profession.

Picard described the early research project wherein schoolchildren whose teeth had been cleaned professionally and who learned to use a toothbrush began to exhibit decreases in dental caries. Dental hygiene programs began to expand in size and length, providing more practitioners better prepared to serve children's oral health needs.

Picard concluded her presentation noting that dental hygiene arose out of the acknowledged need to prevent disease and save teeth, and dental hygienists' ability to reach all segments of the population will play a significant role in increasing access.

JoAnn Gurenlian, RDH, PhD, past president, ADHA and president of Gurenlian and Associates continued a review of the history, noting that dental hygiene began with an emphasis on prevention and preventive oral health education and only later evolved into clinical care. Early in the 20th century, the profession was already focused on health

outcomes and measuring the effect of programs on oral health, and Gurenlian urged her audience to be mindful of this original emphasis when contemplating the future.

Currently there are 332 entry-level programs with prerequisites that approximate one year of college-level course work. The majority of programs offer an associate degree after two years; approximately 50 offer a baccalaureate degree, and a small number provide a certificate. Gurenlian noted that the curriculum of these programs has remained the same for decades: calculus removal, clinical policies and procedures, and preparation so that the graduate can pass a clinical board examination for licensure to practice under high levels of direct supervision, depending on the State practice act. Discussion over the last several decades has called for both greater roles for dental hygienists to work under less direct supervision and for a higher entry level into practice. Although baccalaureate degrees were proposed as the minimum entry level for practice in the 1980s, widespread implementation of four-year college programs did not occur.

Gurenlian said that the new curricula should reflect the increasingly complex oral health needs of the public and be grounded in evidence-based research. Rather than working in a dental office supervised by a dentist, the new dental hygienist should be trained in underserved areas to work independently in a community clinic. The dental hygienist should be able to assess risk and manage disease, be mindful of the needs of special groups, and show cultural competence, as well as knowledge of health services research and public policy development. The community clinic should be the setting for a coordinated interprofessional team approach to patient care: the health home. Gurenlian said that these goals will only be accomplished with a baccalaureate program as an entry level; however, she envisions a 10-year plan for a master's degree, and eventually a doctorate, as the entry level. Doctoral programs in dental hygiene are already in place or under development in South Korea, Canada and the United States.

Comments from the audience included questions about the implementation of a four-year transition and the concern that the costs associated with additional years of education could negatively impact the cultural and ethnic diversity of candidates for dental hygiene programs. One attendee proposed a career ladder, as distinct from an increased scope for all dental hygienists, as a response to the ongoing need for a practitioner technically competent to provide traditional dental hygiene services such as

calculus removal. Another attendee raised the issue of changes necessary to permit the extended range of services future dental hygienists could perform. Attendees also questioned the name “dental hygienist,” suggesting that its emphasis on cleanliness is too limiting for the expanded roles contemplated. Examples, such as “oral health practitioner” or “community oral health provider” were proposed.

To Where We Are Headed: Guiding the Redefinition of Dental Hygienists’ Education and Practice

Speakers in the session were asked to answer three critical questions:

1. What are the contextual drivers that guide the examination and possible realignment of dental hygienists’ role in a transformed health care system?
2. Do dental hygienists possess current core competencies that they are unable to apply in their existing scope of practice? (The moderator appended another question: What new or enhanced competencies should be added to further promote the oral health of the public?)
3. What potential facilitators and barriers exist to enable dental hygienists to perform maximal services for greatest public impact?

The panelists addressed the questions from the perspectives of a Federal agency, academia, the research community, and the dental hygiene profession as represented by ADHA. The panel was moderated by Dushanka Kleinman, DDS, MScD, associate dean for research and professor, University of Maryland School of Public Health, and member, Santa Fe Group.

Marcia Brand, PhD, BSDH, MSDH, deputy administrator of the Health Resources and Services Administration, U.S. Department of Health and Human Services, spoke on transforming dental hygiene education from a Federal/National perspective. She commented on the critical role the Health Resources and Services Administration (HRSA) plays in improving access to health care for low-income populations. The agency’s \$7 billion budget supports health education and training grants, maternal and child health programs, and a network of community health centers, which provided dental services to approximately four million people in 2012. Many of these centers have co-located medical and dental facilities providing the “one-stop shopping” Sparer mentioned

during his presentation. Brand echoed Sparer's sentiments that the ACA is a significant driver of health system transformation offering a "once in a lifetime" opportunity to change the way Americans access health care.

More specifically, Brand explained that the ACA supports a team approach to care, with interprofessional collaboration and new roles and practice arrangements, including the use of non-physician providers. If dental hygienists aspire to be interdisciplinary team members with new skills, she said, community health centers could serve as the initial settings for their practice.

Also acting as drivers for change are relatively new oral health advocacy organizations, such as the U.S. National Oral Health Alliance (NOHA). U.S. NOHA is not a dental professional organization, but an organization of individuals and groups promoting access for all people to quality oral health care at the lowest cost, and urging the integration of oral health into primary care. The fact that the ACA's private insurance reform provision pertaining to oral health applies to children only may give rise to the demand that services for adults also attain recognition as an essential health benefit. Brand hypothesized that demand could also be driven by newly insured people questioning why their new health insurance policy covers the cost of treating a systemic infection, for example, but not an oral infection.

Another driver for change is the establishment of "innovation centers" by the Centers for Medicare and Medicaid Services. These demonstration projects explore the effectiveness of new models of care provision and new kinds of providers.

In terms of core competencies, Brand emphasized the Federal focus on payers, cost, quality, and access and cited the proposed strategy of "zero-basing the health disciplines" — identifying basic skills to provide the best care for the least cost, matched to the settings where oral health care is delivered. As for barriers, Brand identified professional isolation, lack of dental hygienists in policymaking positions in government, and the need to establish understanding of oral health access issues among all stakeholders.

Pamela Zarkowski, JD, MPH, BSDH, provost and vice president, Academic Affairs, University of Detroit Mercy School of Dentistry, spoke on guiding the redefinition of dental hygienists' education and practice from the administrator/educator

perspective. Prior to her current position, Zarkowski had been a faculty member as well as a former president of the American Dental Education Association (ADEA). She proposed that those arguing for transformative changes in dental hygiene educational institutions should consider the issue from the points of view of everyone who will be affected by the outcomes.

“You need to examine the issue of transformation through the lens of the student, the student’s supporters, the faculty, the administrators and lastly, but by no means least, the trustees,” she said. Students need to know how they will benefit and if they will find employment. Parents and partners need to understand the potential return on their investment of money and time spent on the student’s education. Faculty need to know if and how they would fit into a changed system. The academic administration will worry about costs, student enrollment, outcome measures, accreditation, and how the school’s new agenda will resonate in its environment. Finally, the trustees, with their unique perspective on the mission and vision of the school, will also be concerned about cost and the school’s standing.

Zarkowski further elaborated on the need for commitment on the part of the institution in her discussion of competencies, saying that the actual implementation of changes will require retooling the faculty and redefining roles and responsibilities. She envisioned academic staff requiring formal courses to add new competencies and to learn how to work collaboratively and in consultation with other health professionals. Furthermore, pathways for existing practitioners who want to acquire new skills could be managed through continuing education courses or by re-entry into advanced degree institutions, ensuring that new skills be geared to the oral health needs of the public. Zarkowski suggested that the terms “personalized, predictive, preventive, and participatory,” used by Leroy Hood, MD, PhD, to describe a biotechnology approach to health care, could also be used as a framework for approaching the issue of new competencies.

Zarkowski envisioned facilitators for change coming from within the dental and dental hygiene professions, or from enlightened administrative boards and other stakeholders. Communities, especially in dental shortage areas, can force change by demanding access to quality oral health care. But, according to Zarkowski, a potential

barrier to change could be the dental hygiene community, if faculty and leaders are indifferent to a new vision or fear change and risk-taking. Other potential barriers might be the difficulties associated with the licensure and certification of the professionals created by transformation.

Harold Slavkin, DDS, professor, Ostrow School of Dentistry, University of Southern California and Member, Santa Fe Group, spoke of the implications for health care made possible by advances in research. In particular, he cited biological, digital, and nano-technological advances taking place at a time when America is facing significant changes to health care. “The driver for the 21st century is societal needs,” he said, “and the needs are different at this time in history than they were 50 or 60 years ago.”

Slavkin said that today’s U.S. population of 42 million people over 65 years of age will double over the next 30 years. People want to live longer, he said, and they also want to live better, which includes having good oral health. Furthermore, the 310 million people in the United States represent a diverse population continually enriched by immigration. In addition, people move from one country to another more rapidly now than at any time in history, necessitating a global outlook.

Complex chronic diseases have surpassed acute illness in mature adults, all of which have implications for oral health: arthritis, cancer, lung diseases, diabetes, heart disease, hypertension, and mental illness. In addition, obesity, found increasingly in children, is likely to reduce life expectancy in the United States. All of these factors present immense challenges and require an enormous cadre of health care professionals.

“You can be part of that,” he told the audience, “if you position yourself to do so.” Doing business today means viewing everything from multiple environmental viewpoints in order to best support your own professional perspective, but health professionals must also find a way to align their expertise to work interprofessionally.

A team approach to health care also means looking at disease in light of advances in dental research over the past half century. Scientific curiosity across all fields of biomedicine has fueled advances of importance to oral health. Foremost was the mapping and sequencing of the human genome, which has led to determining the genetic defects associated with craniofacial anomalies. Research on stem cells and applications of that knowledge to biomimetics and regenerative medicine then made it possible to build new

tissue. Slavkin said we can look forward to creating a tooth or rebuilding the periodontal tissue/tooth root complex to anchor a dental implant.

Other new technology in oral health care expected in the next few years includes nonmechanical biofilm removal, guided tissue remineralization, and increased use of personalized health care, including salivary diagnostics, all of which have a potential role for future oral health practitioners. In addition, Slavkin said, there are conditions in the current population that call for skills beyond calculus removal; competencies should address inflammatory response, immunity, and management of the effects of microbial activity on oral and systemic health.

Slavkin saw an enormous opportunity for the future of dental hygiene, provided that the profession asks the right questions, adapts to change, and encourages critical thought. Transformation will take time, he said, and there are many moving parts, but the present symposium can be the catalyst.

Ann Battrell, MSDH, executive director, ADHA closed out the panel. Battrell spoke from the point of view of someone working within the association world, which, she said, means acknowledging that change is constant. She described ADHA's vision of the association as a collaborative and influential community whose goal is the transformation of the dental hygiene profession. Battrell asked participants to remain open to new ideas, and to ensure that any transformation proposed is relevant to today's environment.

In terms of the current environment, Battrell addressed the newly crafted definition of Advanced Practice Dental Hygiene, which had been enacted as policy by the ADHA House of Delegates at its 2013 Annual Session:

1. Provision of clinical and diagnostic services in addition to those services permitted to an entry level dental hygienist, including services that require advanced clinical decision making, judgment, and problem solving.
2. Completion of a clinical and academic educational program beyond the first professional degree required for entry level licensure, which qualifies the dental hygienist to provide advanced practice services and includes preparation to practice in direct access settings and collaborative relationships.

3. Documentation of proficiency such as professional certification.

Battrell focused on the inclusion of diagnostic services in the definition, saying the ability to make dental hygiene diagnoses is already included in the standards for clinical practice for dental hygienists; it is a core competency, but one that dental hygienists have not been able to use (an exception is the State of Colorado, where dental hygienist diagnostic services is listed as a competency written into statute).

Such limitations will change, Battrell said, facilitated by market forces including trends in the delivery of health care and provisions in the ACA. Careers for dental hygienists go beyond the clinician in the dental office, adding roles as educator, researcher, administrator/manager, and a voice for the patient in public health settings.

Battrell remarked that the need to transform dental hygiene education is underscored by the fact that while current educational programs provide excellent preparation for dental hygiene clinicians in traditional private practice, the curriculum has yet to incorporate preparation for other dental hygiene roles. The addition of courses in basic business skills, for example, would serve dental hygienists well as they approach the vision of integration into the health care system as primary care providers.

Battrell commented on the growth in the number of States that have established guidelines that allow dental hygienists with advanced training direct access to patients in community settings. California has guidelines for a Registered Dental Hygienist in Alternative Practice, Oregon established the Extended Practice Dental Hygienist, and Minnesota has the Advanced Dental Therapist (ADT). The Minnesota guidelines established a dual-role model so that a graduate can work as a dental hygienist in a dental office or operate independently as an ADT working in low-income, underserved, and dental shortage areas. In New Mexico, an arrangement allows dental hygienists direct access to patients following written agreements with one or more dentists who establish protocols for care. These new guidelines for dental hygienists with advanced training involve some form of collaborative arrangement with dentists.

In conclusion, Battrell noted that Section 748 of Title VII of the Public Health Service Act supports the development of dental training programs that include programs in the field of dental hygiene, financial assistance for students, and the training of oral health care providers who plan to teach in dental hygiene. However, in addressing

barriers to transforming dental hygiene education, Battrell pointed to a long-standing educational barrier: the isolation of dental hygiene schools. Only 23 of 332 dental hygiene education programs are located in dental schools; a fact that, Battrell said, causes a lack of interprofessional consultation and communication, which are the hallmarks of an integrated team approach to health care in the health home.

Comments from the audience included the recommendation that courses in behavioral sciences and social engineering be added to any new curricula and the information that Registered Dental Hygienists in Alternative Practice (RDHAPs) need to be skilled in outreach when working in underserved low-income neighborhoods. Another comment noted that dental hygiene curricula are not attuned to patient needs and that faculty members are not even aware of some of the latest epidemiological findings, such as an alarming increase in dental caries among vulnerable groups. Zarkowski responded that one way to educate faculty would be to engage their interest at annual meetings. A final comment encouraged more, and more diverse, oral health representation at meetings where public health issues are discussed.

Innovative Collaboration Models for Dental Hygiene Practice

The afternoon agenda began with a session on Innovative Collaboration Models for Dental Hygiene Practice. Four panelists representing pediatric, dental hygiene and dental professionals described programs that incorporated an essential role for registered dental hygienists in team-based models of health care delivery. The panel was moderated by Linda Niessen.

Patricia Braun, MD, MPH, associate professor, Pediatrics and Family Medicine, University of Colorado Anschutz School of Medicine described an experimental project that added an oral health component to well-baby visits by co-locating a dental hygienist in the pediatrician's office. Over the course of 27 months, project personnel saw 2,071 patients across the State. Braun noted that major factors facilitating adoption of the project idea were funding, recognition by pediatricians of the importance of children's oral health needs, and the desire to create the one-stop shopping of a medical home. Factors helping to sustain the program were development of a patient base, rotating dental hygienists through the clinic during well-child medical visits, and the satisfaction

of parents or caregivers. Caregivers liked the convenience of having the services all under one roof — they said that they would be more likely to take their child to a doctor’s office with a dental provider than one without.

Braun outlined some of the barriers encountered during the project, including logistical issues and, in some cases, the need to educate staff at the potential pediatric office site about the importance of the oral-systemic relationship. Some of the dental hygienists required additional education in the areas of billing and reimbursement. For that reason, Braun recommended that basic business skills be included in discussion of future dental hygiene curriculum development.

Kristen Simmons, RDH, BSDH, MHA, chief operating officer, Willamette Dental Group, began her presentation by explaining the goal of the Willamette Dental Group, an organization that seeks to combine the functions of an insurance company, a management firm and an incorporated group of dental professionals. The company has 53 dental professional offices in Oregon, Washington, and Idaho serving 370,000 patients insured via Medicaid or commercial insurers. Simmons stressed that the company’s outlook is conditioned by the need to operate effectively in today’s rapidly changing health environment, which requires monitoring shifts in reimbursement and considering the 12 million children who are expected to be newly covered by the ACA. In particular, it means integrating health care through Comprehensive Care Organizations (CCOs).

To make that integration work, Simmons said the Willamette Dental Group incorporates “four dimensions of right”: the right provider, the right location, the right time and the right services. This process necessitates interprofessional collaboration and collaboration with other entities, such as FQHCs, medical homes, and health systems. The Willamette Dental Group recently began adding access points and satellites out of their existing offices, and will initiate new pilot projects employing mid-level dental therapists.

Simmons said that they want all 184 dental hygienists they employ to be digitally literate, entering essential data points and risk assessments into electronic dental records. Such data will be used to assemble outcome measures, in particular to determine if they meet the aims of reducing costs, increasing the quality of health care, and improving the public’s health. She also described the company’s approach to quality control to ensure

evidence-based and risk-assessed care. Premiums could be withheld from providers but could be earned back by meeting quality metrics. Penalties could be imposed if, after a measured period, quality metrics are not met. She concluded that one of the values of the collaborative dental-medical model is to strengthen the message that oral health is linked to and essential to general health.

Tammi Byrd, RDH, chief operating officer and clinical director, Health Promotion Specialists, spoke to participants about her experience owning and operating her own collaborative business, Health Promotion Specialists (HPS), which employs dental hygienists to provide care to schoolchildren. Her experience with HPS convinced her that paradigm shift in the provision of dental care is needed, from a surgical model to a wellness model.

Byrd reported that during the 2012-2013 school year, HPS saw close to 18,000 children in public schools, as well as younger children enrolled in 48 Head Start programs. The dental hygienists provided 16,887 dental cleanings, 16,729 fluoride varnish applications and 8,635 dental sealants on permanent molars. Every child was referred to a dentist for treatment or yearly examination, and caregivers were given lists of dentists in the child's neighborhood, noting which ones accept Medicaid patients. Because there were still children unable to afford and obtain care, HPS started a sister company, Smile Specialists, a non-profit corporation to help fund care for children who cannot afford oral health care, with emphasis on children with urgent dental needs.

Despite some acknowledged barriers, Byrd said that having direct access to children was a major advantage to the company, along with receiving direct payments from Medicaid and being able to interact one-on-one with school personnel and parents.

Byrd said that she supports a paradigm shift in the provision of dental care from the surgical model to a wellness model and that dental hygienists with advanced training are ideal candidates for implementing such a paradigm shift. And South Carolina is fortunate to have the capacity to educate dental hygienists in sufficient numbers to offset a projected decline in dentists. Moreover, dental hygienists with advanced degrees could not only conduct comprehensive prevention programs, but can be trained in atraumatic restorative technique (ART) and interim therapeutic restorations (ITR), which spare tooth structure in the repair of caries lesions. Byrd added that such an approach goes beyond

repairing children's teeth and could make an enormous difference in the quality of life of adults, especially those in nursing homes.

David Gesko, DDS, dental director and senior vice president, HealthPartners Dental Group, spoke about the non-profit, consumer-governed organization of 21,000 people with medical and dental health plans covering 1.4 million members in Minnesota and surrounding States. The company's facilities include medical clinics with 40 primary care locations, 20 dental clinics, and five hospitals. Medical care is available through HealthPartners' own Medical Group and by arrangement with two other physician groups. The dental clinics, covering the major oral health specialties, employ over 60 dentists, over 60 dental hygienists, and two dental therapists.

Gesko described the company as an umbrella organization with six parts: the medical group and clinics, the hospitals, a pharmacy component, the medical and dental health plan, an Institute for Education and Research, and the dental group. Gesko commented that the research institute is important in underscoring HealthPartners' dedication to evidence-based practice, which is integral to their triple aim of simultaneously optimizing the health of a defined population, the experience of the individual, and the per capita cost for the population.

In terms of how those aims apply to the dental group, Gesko stated five practice principles:

1. The delivery of care based on evidence-based guidelines
2. A focus on disease management, risk assessment and risk reduction
3. The preservation of hard and soft tissue
4. The application of a medical (rather than a surgical) model of care to dentistry
5. Maintenance and improvement of overall cost of care

Gesko gave examples of how HealthPartners attempts to connect oral and general health. Patients with diabetes are encouraged to appoint for periodontal services that may be provided at no cost if the patient cannot pay for them. Primary care teams apply fluoride varnishes to at-risk children in the medical office, and pharmacists advise patients on the xerostomic effects of medications they may be taking.

In response to an audience question about the background of the dental hygienists in her program, Simmons replied that they are very diverse—some have associate degrees

while others have a bachelor's. Willamette has established standards for what they want dental hygienists to do, so they provide additional training as necessary to ensure the dental hygienists are comfortable using electronic health records and can work in different settings to the full extent of their education and training. Panelist Braun remarked on the difficulty in recruiting physicians, saying that she is seeing some positive change in the cultural climate now, and also finding more dentists who want to cooperate; however, she reiterated that dental hygienists need to work full-time for the programs to be effective.

Parallel Livelihoods: Allied Professions That Have Advanced Their Professional Education Curriculum for the Health Care System of the Future

This panel consisted of professionals from non-dental health care disciplines, with the panelists explaining why nurses, pharmacists, and physician assistants have changed their practice objectives and how they influenced the changes in education and clinical training needed to achieve competency. The panel was moderated by Alice Horowitz, PhD, associate professor, University of Maryland's Hershel S. Horowitz Center for Health Literacy.

Maria Dolce, PhD, RN, CNE, associate professor and program director, Innovations in Inter-Professional Oral Health Care, Northeastern University, Bouvé College of Health Sciences, School of Nursing, described the history of changes that nursing has undergone. The movement began when the Robert Wood Johnson Foundation (RWJF) approached the Institute of Medicine (IOM) in 2008, proposing a partnership to transform nursing education. The foundation's argument was based on the growing needs of the public in a changing health care landscape. The result was the 2011 IOM publication, *The Future of Nursing: Leading Change, Advancing Health*, which recognized that nurses with advanced training had the potential to address vast unmet health needs in America. The report was an action-oriented blueprint for change that the profession has taken to heart, Dolce said. Realizing the importance of infrastructure, leaders in the profession have established statewide and regional coalitions of stakeholders to implement the report's recommendations.

Dolce discussed three key messages of the report:

Key message #1: Nurses should practice to the full extent of their education and training. This message parallels the situation for dental hygienists insofar as scope of practice laws for nursing vary widely from State to State. For both professions, actions to reduce regulatory barriers are essential.

Key message #2: Nurses should achieve higher levels of education and training through an improved education system that promotes seamless academic progression. Dolce presented data collected from 1980 to 2008 indicating that the percentage of nurses with only a diploma has dropped from 54.7 percent in 1980 to 13.9 percent in 2008. Over the same period, nurses with associate degrees have increased from 7.9 percent to 36.1 percent, those with bachelor's degree have increased from 22.3 percent to 36.8 percent, and nurses with either a master's or doctoral degree have increased from 5.2 percent to 13.2 percent. The report recommended that bachelor's degree holders should represent 80 percent of nurses by 2020 and that their education should be enhanced through nurse residency programs in hospitals. An increasing number of articulation agreements have been written to ease the transition for students graduating from a two-year community college who want to attend a four-year college, and new year-long hospital nurse residency programs are in place. The report also recommends that PhD holders double by 2020 (from the 1 percent they currently represent). Toward that end, a newly described Doctor of Nursing Practice degree (DNP) was defined, and an increasing number of schools now offer this degree, some even eliminating their master's degree programs altogether.

Defining the core competencies for an advanced nursing degree is a work in progress. The 2003 IOM publication, *A Bridge to Quality*, which urged a breakdown of the health profession silos, identified seven core competencies for all health professions: patient-centered care, evidence-based practice, quality improvement, patient safety, informatics, teamwork, and collaboration. Dolce expects that standardized educational requirements and competencies will eventually be formulated and that the DPN degree will be awarded for the various categories of advance practice nursing, such as nurse practitioner, midwives, nurse anesthetist, and for graduate level practitioners trained in pharmacy, physical assessment, and pathophysiology.

Key message #3: Nurses should be full partners, with physicians and other health professionals, in redesigning health care in the United States. When translated to nursing curricula, Dolce said this means providing programs for nurses in leadership and professional development.

Dolce also spoke on a 2011 report of an expert panel composed of nursing, pharmacy, dental education, osteopathic medicine, medicine and public health professionals.¹ The panel was asked to establish core competencies for collaborative practice. The group defined four domains: values/ethics, roles and responsibilities, interprofessional education (IPE), and teams and teamwork, defining 38 core competencies across these domains. Dolce said that these have been major drivers in nursing and other health professional education.

Lucinda L. Maine, PhD, RPh, executive vice president and chief executive officer, American Association of Colleges of Pharmacy, began her presentation recalling the development she witnessed in the profession of pharmacy over the course of her career. Her studies began 40 years ago as a pre-pharmacy student in a class that was the first to achieve over 50 percent enrollment of women. At the time, the vast majority of pharmacists had only a bachelor's degree, which would remain the rule until 2004.

To be a pharmacist today requires a doctoral degree, an educational evolution made necessary by the sheer growth and complexity of the pharmaceutical industry, profound changes in health care and the demands of society. Maine provided an example of this growth by comparing the number of prescription medications available in 1960 to today – 600 to over 15,000.

With thousands of drugs regulated by the U.S. Food and Drug Administration (FDA), the need for greater understanding and better management of their use is clear. Maine called this need a “societal imperative,” noting that 75 percent of health care costs today are chronic disease-related, and medication use, often over a lifetime, is the

¹ Interprofessional Education Collaborative. Team-based competencies. Building a shared foundation for education and clinical practice. Conference proceedings. February 6-7, 2011. Washington, DC. Available at: http://macyfoundation.org/docs/macy_pubs/Team-Based_Competencies.pdf. Accessed Feb. 6, 2014.

primary modality of treatment. The question Maine asked is, “are we using these drugs wisely?”

Maine recounted that, about 20 years ago, “we in pharmacy” commissioned an analysis with respect to drug-related morbidity and mortality.² The analysis indicated that for every dollar spent buying drugs, another dollar is lost because of their improper use. Translated for today’s market, out of the \$300 billion spent on prescriptions each year, \$200-300 billion could be lost, and half of that unnecessarily. As a result, the need for better drug management has been driving advances in pharmacy education.

As Maine indicated, after 50 years a doctoral degree (PharmD) is now required for entry into the pharmacy profession. A revision to the American Pharmaceutical Association (APA) Code of Ethics in 1969 indicated the adoption of a new mindset, with pharmacists serving as an information resource for the patient.

From the APA Code of Ethics, 1922-1969: Pharmacists should never discuss the therapeutic effect of a physician’s prescription with a patron or disclose details of composition which the physician has withheld.

From the APA Code of Ethics, 1969-present: A pharmacist should always strive to perfect and enlarge his knowledge. He should utilize and make available this knowledge as may be required in accordance with his best judgment.

It was also in the 1960s that schools took the first steps in lengthening the years of preparation, adding a year of pre-pharmacy coursework and a fifth year to the four-year baccalaureate program in the form of a post-graduate internship supervised by the Board of Pharmacy.

The concept of making the Doctor of Pharmacy degree mandatory was initially introduced in 1974 by the American Association of Colleges of Pharmacy House of Delegates, but no action took place until 1992 when it came before the house again. Pharmacy’s accrediting body declared that dual accreditation programs (BS and PharmD) were not likely to be continued. The practitioner organizations finally prevailed, arguing that while PharmDs were most often located in hospitals, the real-world need was for

² Johnson J, Bootman JL. Drug related morbidity and mortality: A cost of illness model. Arch Int Med 1995; 155: 1949-56.

pharmacists with doctoral degrees in the community, where the public could access their advice and assistance.

Entry into the pharmacist's profession today requires a minimum of two but generally three to four years of pre-pharmacy coursework (essentially a BS or BA degree), a typically three-year didactic curriculum integrating science and therapeutic content, followed by clinical and experiential education. The new curriculum incorporates IOM core competencies for the health professions: patient-centered professionals functioning in team-based care that is evidence-based and emphasizes quality and health information technology competence.

Ruth Ballweg, PA, MPHA, director, MEDEX Northwest Physician Assistant Program, and professor, School of Medicine, University of Washington, dedicated her portion of the panel to the opportunities dental hygienists have with advanced education. She noted many similarities between PAs and dental hygienists, one of them a lack of a clear identity as perceived by the public. Ballweg said that she had been a PA since 1976 and remembers spending the first 10 or 15 years of her career explaining her profession to patients.

The environment began to change for PAs with the expansion of venues. Originally, PAs worked in emergency rooms, primary care, and surgery, but the demand for them grew so much that they diversified. Now they can be found in all fields of health care, resulting in a greater exposure to potential professional collaborators.

Ballweg then encouraged dental hygienists to explore areas where their services were especially needed, first by "minding the gaps," where people are not getting care. The gaps can be geographical (people in remote, rural areas), economic (the uninsured), or age-specific (the elderly). Ballweg also described "social justice" gaps, which would include people with mental or physical disabilities and immigrant groups left untreated by other professions.

Ballweg also saw a role for dental hygienists to take the lead in transforming patient visits. Dental hygienists could encourage patients to be more active participants in their care, or reconfigure the appointment to allow for consultation outside the operatory. Ballweg added that dental hygienists should also consider broader leadership roles as new systems of oral health care are introduced, and in case management or quality and

compliance management. Finally, she encouraged the dental hygiene profession to pursue the training of other health workers in the provision of oral health services.

Leading Transformational Change

Claude Earl Fox, MD, MPH, professor emeritus, Department of Epidemiology and Miller School of Medicine, University of Miami, was the symposium's second keynote speaker, whose address, Leading Transformational Change, ended day two of the symposium. In his introduction, moderator Michael Alfano, DMD, PhD, noted Fox's distinguished leadership as a former administrator of HRSA.

Fox mentioned that his career has spanned four decades in public health, not only at HRSA, but in Mississippi, Alabama, and currently in Florida.

"Systems are normally, from an evolutionary standpoint, changing," Fox said. "The question is can we change them in the direction we want them to go? Can we change them to stimulate a better system for oral health? I think we can." He said he believed that certain guiding principles would be useful to consider in the attempt to lead change.

Throughout his presentation, Fox used personal anecdotes to help establish his guiding principles. He stressed the importance of not underestimating the potential in establishing stakeholder relationships and staying organized, focused and consistent in messaging. Fox encouraged participants to use the data available to them, because it often goes unused, and has the potential to impact the discussion. He recommended framing issues and actions as being in the public's interest to increase support. He also stressed that support from entities that do not stand to gain directly from the success of a cause strengthens the value of that cause in the eyes of the public.

In his final remarks, Fox emphasized the need for good data and the importance of developing mechanisms by which to judge quality and be able to determine what's good or bad in practice. Fox's concluding remarks explained that there is no magic bullet for transformational change; however, much can be accomplished, and there are roles for anyone wishing to become involved.

A question from the audience asked how to ensure that, once data is collected, it is presented effectively. Among Fox's comments in response was that a public understanding of the issues at hand often precedes transformational change.

Interprofessional Education: Implications for Dental Hygiene Practitioners and Educators

Day three of the symposium began with a panel on interprofessional education (IPE), moderated by Linda Niessen and Ann Battrell.

Richard Valachovic, DMD, MPH, president and chief operating officer, American Dental Education Association, began his presentation by giving some historical context on IPE. The concept of IPE goes back 40 years, but only in the last few years has it been accepted as a concept that can lead to enhanced team-based care. The concept of IPE, as defined by the World Health Organization, occurs when students from two or more professions learn about, from and with each other, to enable effective collaboration.

Valachovic expanded on that definition, saying that IPE is not simply bringing an interdisciplinary approach to practice, or having different professionals share a classroom experience. It is, he argued, about an ongoing engagement in a learning environment in which participants learn from each other. Valachovic believes IPE will alter the way health professionals are educated and the way health care is delivered. He credits the ACA for creating "this tectonic shift." The ACA emerged from concerns about the cost of health care in America, and the private sector is also looking for ways to improve the cost effectiveness of health care. Team-based practice is recognized as a promising way to achieve this goal. But Valachovic warns that it raises the question, which comes first? Do we start with IPE to build teams? Or do we start with teams and build IPE into them?

Valachovic enumerated four additional factors to explain why the last two years have seen such foment around IPE and team-based practice.

1. Market forces. The huge health insurers like United HealthCare or Kaiser Permanente are buying into team-based care as a way to lower costs and improve outcomes.

2. Regulatory issues. The ACA calls for the establishment of Accountable Care Organizations for which team-based care models can compete and succeed.
3. Changes in care delivery. The focus is on ambulatory medical and surgical care, with hospitals reserved for intensive care. Chronic case management is also seen as community-based. In this context, dental care would be integrated into medical care.
4. A focus on prevention. Starting with water fluoridation, dentistry has had a history of prevention, yet the effect of oral disease prevention on overall health care is not widely understood even among health professionals.

In 2008, six associations of schools of health professions met to develop domains and competencies for interprofessional education and practice. They were the American Association of Colleges of Nursing (AACN), American Association of Colleges of Osteopathic Medicine (AACOM), American Association of Colleges of Pharmacy (AACP), American Dental Education Association (ADEA), Association of American Medical Colleges (AAMC), and the Association of Schools of Public Health (ASPH). Valachovic noted that the group has met regularly since 2009, and convened an expert panel to develop a report on collaborative practice in 2011.³

Valachovic mentioned two important publications that have emerged in the interim: a Lancet article on IPE as it affects medicine, nursing and public health, and the IOM report on the future of nursing. ADEA itself was a founding member of the IOM Global Forum for Innovations in IPE and has established Institutes for Faculty Development to address issues of competencies for teachers.

Issues of accreditation will need to be addressed, he said, in terms of updating standards to promote IPE. There are also concerns about obstacles that work against IPE and team-based care. One is that different professional school calendars have different semester start dates, which could be overcome by establishing common standards. More

³ Interprofessional Education Collaborative Expert Panel. Core competencies for interprofessional collaborative practice: Report of an expert panel. Washington, D.C.: Interprofessional Education Collaborative, 2011. Available at: <http://www.aacn.nche.edu/education-resources/ipcreport.pdf>. Accessed Feb. 24, 2014.

difficult concerns are cultural issues in which medical or dental practitioners adhere to an outdated solo practice model.

Valachovic commented that dentists and dental hygienists are integral to the team because of their ability to convey the importance of the oral-systemic relationship. As for IPE within the dental professions, Valachovic admitted that ADEA has not done all it could do to promote inter-dental professional communication and contact. However, over the next two years they have organized annual meetings to bring allied dental professional groups together with dental educators and work out ways to develop IPE between dental hygiene and dentistry, and between dental and other health professional schools.

After his presentation, a participant asked Valachovic about the need to inject more oral health into the curricula of schools of public health and more public health into the dental professional schools. Valachovic said he believes more will be done as the ACA increases focus on community health and community settings. Therefore, he thinks of the oral health/public health connection as evolving. Furthermore, the six-member consortium is planning a faculty development institute on public health, while the director of the Association of Schools of Public Health, a consortium member, is planning a summit on oral health.

Judith Haber, PhD, APRN, BC, FAAN, associate dean, College of Nursing, New York University, spoke about the unique partnership between nursing and the university's College of Dentistry and the effects it has had on IPE. The partnership has resulted in two professions learning from each other and practicing as a team to generate better health outcomes in a model of patient-centered care. Haber described a variety of innovative nursing-dental IPE activities the partnership has fostered, the most successful being the Oral Health Nursing Education and Practice (OHNEP) initiative, a program that aims to build a "critical mass of nursing oral health champions who nationwide are integrating oral-systemic health competencies in curriculum and practice venues."

HRSA grants have been a major support of oral health and IPE nursing activities, including funding for a Teaching Oral-Systemic Health (TOSH) grant, Haber said. This grant is for the development of medical, nursing and dental faculties and recently led to an event in which 400 students learned about the links between oral and systemic health

using standardized patients and case studies. In addition, a web site has been created to serve as an oral-systemic health knowledge hub for nursing and other health professionals. The site also links to a Smiles for Life site for downloading course material for non-dental professionals.

Most important to Haber is that, rather than create a separate course in an already-overloaded school curriculum, NYU has chosen clinical education and practice as the venue to operationalize IPE, using the oral-systemic health connection as the vehicle. Thus, they are essentially “weaving” the connection throughout the educational and training process.

Haber added that these changes begin with faculty development, warning that if faculty does not get involved, interprofessionalism is never going to be taught and it will not make its way into practice. Haber said they have used OHNEP to spread the word, and over the past two years have provided faculty development programs for 3,000 nurses nationwide.

Haber explained that NYU requires every student and faculty member who treats a patient to include oral health in taking a complete medical history, conducting a physical exam, assessing risk, and developing a management plan, which will include collaborations and referrals if warranted. Interprofessional rotations ensure that dental hygiene and dental students rotate into the primary care nursing faculty practice clinic. Dental students rotate into pediatric nurse practitioner programs, and dental, dental hygiene and nursing students are part of outreach programs at Head Start sites. These teams also staff mobile vans that travel to neighborhoods to promote oral health and improve access to care. Haber also mentioned smoking cessation programs and early morning case conferences, which call for interprofessional presentations and participation.

Other projects OHNEP has initiated are Oral-Systemic Health seed grants to health professional schools for interprofessional courses or protocols for treating selected types of patients. Special programs for diabetes screening in the dental office, inter-professional strategies to reduce the risk of early childhood caries and a program to integrate preventive dental care in a pediatric oncology center have also been developed.

Haber concluded that IPE creates the learning environment that makes working as a team together possible, fostering the knowledge, trust and respect necessary for fruitful collaboration.

After Haber's remarks, Battrell asked how dental hygiene schools, often located in community colleges and separated from dental schools, could develop inter-professional programs. Haber's advice was to think broadly and forge links to other health professions. Community colleges often have a nursing school, optometry, pharmacy, or even veterinary schools. There may also be links within the community or private practices or agencies that might be receptive to partnering. "Virtual" IPE is also possible. Haber added that she thought Lucinda Maine's idea of linking dental hygienists with pharmacists was an excellent one and that at NYU they are in conversation with Walgreens about the potential of establishing nurse-pharmacist teams.

Funding Transformational Change

The last session invited several philanthropic organizations to discuss how they "view their role in systems change and suggest opportunities for the field of dental hygiene and its partners for systems change." The panel was moderated by Ralph Fuccillo, MA, chief mission officer of DentaQuest, president, DentaQuest Foundation and member, Santa Fe Group.

Diane Oakes, MPH, MSW, deputy director, Washington Dental Service Foundation, spoke about the Washington Dental Service Foundation, which is funded by Washington State Delta Dental. Their goal is to make dramatic improvements in oral health in the State. Their method is to understand the problem, look at the data, brainstorm, execute strategies, evaluate the results, and, if successful, replicate the model.

Oakes defined the conditions for success of a strategy in terms of a number of factors necessary to address the complex social, economic, biological, and environmental determinants of health. Among them were:

- Having an adequate pool of providers. According to Oakes, the idea is to make oral care accessible and affordable, and they define providers broadly to include dental and medical personnel, but also home health aides, Head Start teachers, community health workers, and others who are

in a position to educate and/or provide oral care and referrals. The foundation identifies and trains these people.

- The general public values oral health. It is important that they also buy into the importance of oral health.
- Science-based practices. Adhering to evidence-based findings is fundamental to the foundation's strategy.

Oakes said that while the foundation is primarily concerned with these four factors, the financial system, having a culturally competent and diverse workforce, and community systems and services in place are other conditions for success.

Oakes concluded her presentation with an example of an initiative launched in senior centers in which dental hygienists, newly empowered with direct access rights, could provide oral health services. The State dental hygienists' association approached the foundation for help in funding equipment for dental hygienists wanting to establish senior center practices. The foundation agreed, but to ensure the greatest impact, they asked that the equipment be used at least two or three times a week. They also instituted a policy by which part of the funding to the dental hygienists was in the form of a no-interest loan. This allowed the foundation to grow the program by using the loan repayments to support other dental hygienists. An initial six such programs in 2009 have now grown to 24, some supported by the foundation, others on their own. The foundation has also helped connect the dental hygienists with senior center and aging agencies.

Oakes said that if the program is to expand further, it is important that its dental hygienists be trained in business planning, outreach, and marketing, and also in making connections to the medical and dental communities. Another need was for more and better data gathering, for evaluation purposes and course corrections.

Gail Christopher, DN, vice president, Program Strategy, the W.K. Kellogg Foundation, opened her presentation discussing the mission of the W.K. Kellogg Foundation. Christopher said Kellogg has always been a friend and ally of the dental/oral health professions, and that the foundation has an open application policy, by which they will review any proposal, provided it addresses a community's expressed needs.

Christopher spoke about the foundation's work with Native Americans, saying that this population's oral health status is dire, an indicator that "We have missed the

mark as a Nation.” This led Christopher to speak about diversity, stating that her first job in philanthropy was documenting the oral health of African-American men. The conditions of their oral health had a profound impact on her. Christopher remarked on how health disparities are a problem, and one of the areas that receive the least support and attention is oral health.

Christopher’s concluding remarks addressed diversity within the health professions. Nurses with associate degrees and dental therapists practice in underserved communities, she said, because they come from those communities. Economic necessity limits their educational investment and requires them to be credentialed early in their careers so they can become employable and support their families. She urged dental hygienists to learn from nursing and, as they strategize for the future, bring into the conversation a deeper understanding of the diversity of the Nation and the imperatives that that diversity creates.

David Krol, MD, MPH, FAAP, senior program officer, Robert Wood Johnson Foundation has provided primary care in community health settings, testified before local, State and Federal legislative bodies, and published on children’s oral health in professional journals. He spoke about the mission of the Robert Wood Johnson Foundation (RWJF). The aim is to improve the Nation’s health and health care, and they are presently engaged in strategic planning to “build a culture of health.” He prefers to describe the RWJF as change-making rather than grant-making, and summarized the characteristics of the strategies the foundation employs to effect transformational change in terms of six Cs:

1. Communicating: The foundation likes to tell stories, informing “key influencers” of the work of their grantees or the result of their investments.
2. Convening: Bringing people together who might not normally sit in the same room can have a positive effect.
3. Coordinating: It is extremely important in today’s economic climate to bring multiple stakeholders, including other funders, together to exchange information to identify possible partners.
4. Connecting: RWJF prefers that its grants complement one another to create a whole greater than the sum of the parts.

5. Counting: Measuring outcomes, monitoring progress, making midcourse corrections or abandoning a project are required of a good steward.
6. Cash: The most obvious of strategies for effecting change.

The next item on the symposium agenda was the Strategic Planning Workshop discussed in the following section.

Moving Forward: Strategic Planning Workshop

A breakout session took place with participants seated at round tables dedicated to one of five topics:

- State Practice Acts — How dental hygiene curricula must be modified to meet the changing needs of society and the health care system.
- Accreditation Standards — How the dental hygiene profession can better serve the health and wellness of the needs of society by transforming itself.
- Financing and Business Plans — How health care systems or funders can develop a sustainable financial business model for the future of the dental hygiene profession.
- New Practice Locations and Collaborations — What role the dental hygienist can fill in current and new health care systems.
- Interprofessional Education — Resources that can speak to the changing role of health professionals and serve as models for the future of the dental hygiene profession.

With the goal of redefining the dental hygiene curriculum and bearing their table topic in mind, attendees identified the most significant challenges/barriers in today's landscape with the potential to impact the future of dental hygiene education and practice. They identified and shared strategies for addressing the challenges as well as the resources needed to move forward.