

Finding meaning with interprofessional practice

Part 1

Sean G. Boynes, DMD

TRADITIONALLY, dentistry has been insulated from changes in the health-care market, and it has evolved within a separate system of delivery.¹⁻² This silo-type environment led dentistry into disconnection from the overall health-care system.³⁻⁵

As a means of addressing these issues, the Commission on Dental Accreditation inserted Standard 1-9, which requires educational institutions to demonstrate interaction with other components of health-care education, as well as Standard 2-19, which requires that graduates must be competent in communicating and collaborating with other members of patients' health-care teams.⁶ In 2014, the Department of Health and Human Services created a document highlighting new oral health competencies for primary care.⁷ In addition, the American Dental Association advanced the Council on Access, Prevention, and Interprofessional Relations to broaden the scope of oral health care throughout the health-care system. Ultimately, the majority of organized dentistry and medicine has addressed interprofessional practice in some way and has provided recommendations for its growth.

Unfortunately, a review of the dental system shows that true dissemination of interprofessionalism is still within the very early stages. There appears to be difficulty in the development, implementation, and financial sustainability of integrated practice.⁵ While knowledge of interprofessional outcomes has improved, there is limited material available about how to create widespread integrated practice throughout the majority of dental-care business models. Most of the work completed in this area has focused on safety-net clinics and primary pediatric medical care. This article will focus on oral health's role in integrated care and review current methodology for interprofessional implementation.

HEALTH SYSTEM IMPACT: THE IMPORTANCE OF INTERPROFESSIONALISM

The association between oral health and chronic disease most likely occurs within three concomitant pathways: A dysfunctional masticatory system affects diet and nutrition; oral infection results in transient bacteremia; and inflammatory agents and by-products result in negative systemic reactions.^{6, 8-9} Table 1 highlights an expanding body of research that continues to categorize possible links between oral health and systemic disease and demonstrates constructive systemic outcomes.^{8,10-28} In addition, integrated care has been proposed as a mechanism to increase the efficacy of disease prevention; address the hindrances to oral health-care access; and provide savings to the health-care system.²⁹⁻³²

While great work has evaluated the links between oral health and systemic risk, complete universality and consensus have not been achieved. Some professionals question the sample populations of insurance-based claims analyses and periodontal intervention studies, and continued research is needed to provide conclusive information about the integration of oral and systemic health care and its outcomes.

However, there exists persuasive data that oral disease prevention and treatment has some correlation to a reduction in the cost of treating other systemic diseases.^{5,11} A review completed by Jeffcoat et al. found a 61% reduction in hospital admissions, a 41% reduction in physician visits, and a 32% reduction in medical costs for diabetic patients who received routine periodontal treatment.³³ An analysis recently performed by United Healthcare using three years of dental claims experience and two years of evidence-based-medicine treatment group data found substantial savings with dental care.³⁴ Overall, total medical costs were considerably lower for individuals with chronic medical conditions who received dental treatment.³⁴ The net average savings of each member's annual medical costs was \$1,038.³⁴ The investigators also determined that the biggest overall benefit occurred with nonmedically compliant patients receiving dental care (\$1,849 per year, per member).³⁴ In addition, an analysis completed using Aetna's database suggests that periodontal treatment can reduce the cost for several chronic diseases; Cigna completed a white paper highlighting specific models that demonstrated health-care savings with integrated care; and many state that chronic disease plans have incorporated oral health care as a means for affecting costs.^{13, 33-36}

INTERPROFESSIONAL IMPLEMENTATION

The implementation process of oral health and medical integration requires input and participation from both medical and dental personnel. Ultimately, the depth of integration will depend on: the ability of personnel to consolidate and arrange efforts; the quality of leadership in the offices; the overall capacity of the personnel to provide care; and the staff and providers’ willingness to participate. It may prove advantageous for providers to form

or join a network of likeminded individuals and/or organizations—either with partnership, affiliation, or collaboration-capacity agreements. Integration will prove challenging for silo-based sole proprietors, isolated group practices, and rural providers, all of which traditionally do not have relationships with or proximity to their needed health-care counterparts.

Materials and resources are available to assist organizations, practices, and providers

with interprofessional practice methodology. While they do not specifically address the nuances with sole-proprietor or small-group dental practices, there are methods and materials the private practice dentist may find advantageous. The National Network for Oral Health Access developed a user’s guide that details possible mechanisms for implementation (www.nnoha.org/nnoha-content/uploads/2015/01/IPOHCCC-Users-Guide-Final_01-23-2015.pdf). Qualis Health has is-

Table 1: An abbreviated evaluation of oral health’s hypothesized connection and impact on systemic well-being*

Target population / systemic description	Oral-systemic health connections	Proposed outcome(s) / impact(s)
Cardiovascular disease	Available data indicates a trend toward periodontal-treatment-induced suppression of systemic inflammation related to cardiovascular disease and improvement in endothelial function; however, the current research is not consistent across studies, and gaps in understanding of the connection exist. More information is needed to reach a universal conclusion. ^{8,10}	Adults who visited the dentist were less likely to report cardiovascular disease compared to those who did not visit the dentist. ^{8,10} <i>Dental teams can have a positive impact as screeners for undiagnosed hypertension.</i>
Cerebrovascular disease	Proposed mechanisms related to oral health and stroke incidence include: inflammation mediated by a procoagulant state, atherosclerosis mediated by direct microbial invasion of blood vessel wall, and recognized vascular risk factors. ^{11,12}	Early research has stated that periodontal disease was found to increase the risk of stroke incidence nearly threefold. However, stroke and oral health intervention studies to provide definitive conclusions are difficult to complete. ¹²
Diabetes mellitus	Diabetes and periodontal disease share a pathogenesis that includes an elevated inflammatory response. When both disease processes are present, an increased immune response (altered inflammatory response) can occur that may potentiate effects of disease. ¹³⁻¹⁴	The impact of poor oral health and dietary intake can have a negative impact on diabetic patients. A total decrease in the actual hemoglobin A1c level is reported to fall between 0.38–0.71 for patients receiving oral health intervention, according to meta-analyses. ¹⁵⁻¹⁶ <i>Dental care teams can have a positive impact as screeners for undiagnosed diabetes.</i>
HIV/AIDS	Many conditions that affect the oral mucosa occur primary or secondary as biological responses to HIV. The oral cavity can also serve as a source of infection that can disseminate to lymphoid tissues or stimulate systemic inflammatory responses that can lead to negative outcomes for HIV/AIDS patients. ¹⁷⁻¹⁸	Poor oral health can impede food intake and nutrition, leading to poor absorption of HIV medications. Lack of dental care for HIV patients can negatively affect quality of life. In addition, oral lesions may indicate undiagnosed HIV infection or progression of disease. ¹⁷⁻¹⁸
Maternity	Infection and inflammation are factors in causing preterm birth. Controversy exists as to the connection of oral health and preterm birth, as intervention studies completed during the second trimester have had little impact in decreasing preterm birth incidence. ¹⁹	While dental intervention during the second trimester has resulted with inconsistent results, oral health care prior to and throughout pregnancy is suggested to decrease the likelihood of preterm birth. Also, women receiving oral health care throughout the gestational period had better oral health outcomes. ¹⁹⁻²⁰
Oncology	Many cancer treatment modalities can result in adverse oral health occurrences such as: mucositis, caries, xerostomia, and osteonecrosis. The cause of these occurrences can be multifactorial, but associations that have been proposed include: radiotherapy, toxicity of chemotherapy agents, multicycle chemotherapy, and molecular/cellular factors. ²¹⁻²³	Dental examinations and definitive treatment are vital prior to the start of cancer therapy for all patients. ²¹⁻²³
Renal disease	Most associations between poor oral health and renal disease (characterized by uremia) relate to immune dysfunction, including deficiencies in lymphocytes and monocytes. Additionally, altered cellular immunity, along with malnutrition, contributes to an immunodeficient state in uremia. ²⁴⁻²⁵	Preserving low risk and functional oral health in chronic renal disease patients serves a complementary function that can surpass the advantages established with non-chronic disease patients. ²⁵
Respiratory disease	Some research suggests that oral bacteria may reduce the bond of respiratory pathogens to epithelial cell connections. Moreover, oral bacterial products or cytokines in pharyngeal spaces can result in an increase of inflammatory cells. ²⁶⁻²⁸	Some studies suggest a direct relationship between poor oral conditions, high plaque indices, periodontal disease, and respiratory diseases, including pneumonia, chronic obstructive pulmonary disease (COPD), and asthma. ²⁶⁻²⁸

*There is not universal agreement among studies as to the cause-and-effect relationship between oral and systemic health links. This table should be viewed as a snapshot of proposed and possible correlation areas with oral and systemic outcomes. More research and collaboration are needed prior to full implementation of integrated care or consensus.



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Table 2: The proposed levels of integration with role identification

Medical team tasks	↔ Cooperative tasks ↔	↔ Dental team tasks ↔
<p>PLANNING PHASE:</p> <ul style="list-style-type: none"> Complete a readiness assessment. Alter practice policies and procedures to address changes in care. Develop and implement necessary documentation systems, electronic management systems, and ancillary changes to operations. <p>BASIC LEVEL:</p> <ul style="list-style-type: none"> Complete oral health screenings on target population(s). Query patients about their “dental homes” and most recent dental visits. <p>MODERATE LEVEL:</p> <ul style="list-style-type: none"> Administer primary and secondary preventive oral health procedures to target population(s). Basic understanding of oral health disease processes and how they can impact well-being. Be nearing or achieving appropriate phase of meaningful use. Provide complete pediatric oral health integration (patients receive an oral health risk assessment, anticipatory guidance, fluoride application; patients are referred to dental team). <p>HIGH LEVEL:</p> <ul style="list-style-type: none"> Implement and document oral health quality assurance/quality improvement plans and outcomes. Analyze and share oral health benchmarks in real time. 	<ul style="list-style-type: none"> Train providers and initial staff. Create and finalize business and memorandum agreements that include documentation of capacity limitations, HIPAA, target population agreement, etc. Formalize leadership or point-of-contact teams. <ul style="list-style-type: none"> Implement a bidirectional cross-referral process. Use cross-promotional propaganda. Appropriate postcare communication. <ul style="list-style-type: none"> Priority populations are receiving care, and a strategic plan is completed to determine the process for increasing the number of target populations. Establish and engage partnerships or affiliations with community entities. If possible, begin integrating areas of behavioral health into the integration plan. <ul style="list-style-type: none"> Achieve a high percentage of patients having seen both medical and dental teams each year. Involve a behaviorist to assist with high-risk, low-compliance patients in need of behavioral chronic disease management. High-level medical and dental screenings are completed that result in accuracy with finding undiagnosed disease. Regular meetings involving all partners should take place; meetings should include updates on care administration and review of performance/quality measurements. 	<ul style="list-style-type: none"> Complete a readiness assessment. Alter practice/site policies and procedures to address changes in care. Identify and implement necessary documentation, electronic management systems, and ancillary changes to operations. <ul style="list-style-type: none"> Query patients about their “medical homes” and most recent medical visits, including immunization status. Record body mass index, blood pressure, heart rate, and respiratory rate for all patients with readiness referral for systemic intervention. <ul style="list-style-type: none"> Basic understanding of primary-care disease management and applied intervention methodology (understanding treatment goals). Be nearing or achieving appropriate phase of meaningful use. Use auxiliary personnel to the highest level of their licenses and scope of practice. <ul style="list-style-type: none"> Implement and document primary-care-specific quality assurance/quality improvement plans and outcomes. Analyze and share systemic disease treatment benchmarks in real time. Use the international statistical classification of diseases and related health problems (ICD) coding system.
<p>CREATIVE LEVEL:</p> <ul style="list-style-type: none"> Encourage innovation, allow creativity, and facilitate professional and patient development. Population-based health planning designed to achieve a geographic distribution of integrated health infrastructure. The use of phase-contrast microscopy for identification of poor health, as well as the use of salivary diagnostics to assist with periodontal health, general diagnoses, and patient outcome improvement. Conduct research and analysis, and use the Plan, Do, Study, Act (PDSA) cycle to design appropriate risk-factor measures and encourage changes in insurance coverages, as well as in marketplace design and improving the standard of care. True quality assessment that leads to practice translation and meets identification parameters of the Institute for Healthcare Improvement’s Triple Aim approach to health care. 		

sued a white paper that provides case studies evaluating the steps taken to integrate medical and dental disciplines (www.qualishealth.org/sites/default/files/white-paper-oral-health-integration-pcmh.pdf). The National Interprofessional Initiative on Oral Health provides updates, learning opportunities, and resources for integrated-care administration (www.niioh.org). Additionally, the DentaQuest Institute website (www.dentaquestinstitute.org) provides education modules and material resources for interprofessional practice.

For those providers who desire to begin the process to full integration, an additional meth-

odology includes the use of integrated care levels. As seen in Table 2, a planning phase with four levels of integration is recommended to assist providers in creating a working strategic plan.^{5,17}

Using the levels of integration as a guide, the provider(s) can determine which level of integration to readily achieve and then develop timelines and models that will assist with improving the level of integration. It should be noted that the integration process can also be as simple as making an agreement to see patients from medical practices with medical and/or dental need. **DE**

REFERENCES

Available in online article at www.dentaleconomics.com.



SEAN G. BOYNES, DMD, is the director of interprofessional practice at DentaQuest Institute in Charleston, South Carolina. He is also an expert advisor for Safety Net Solutions in Boston, Massachusetts, and a senior dental advisor for CareSouth Carolina in Society Hill, South Carolina. He can be reached at sean.boynes@dentaquestinstitute.org.