
Problem

Oral health is inseparable from overall, systemic health. Oral health status can reveal signs and symptoms of many general health conditions. More than 100 systemic conditions have oral manifestations, including nutritional deficiencies, autoimmune diseases, cardiovascular diseases, stroke, respiratory infections, diabetes, and pancreatic cancer.¹ A growing body of evidence also shows that oral diseases impact systemic health and quality of life.^{2,3,4,5,6} Periodontal diseases, in particular, can result in increased systemic bacterial exposure and increased inflammatory factors that are associated with a range of diseases and conditions such as diabetes, coronary heart diseases, stroke, arthritis, respiratory diseases, and renal diseases.^{7,8,9,10, 11,12,13,14,15,16,17} Furthermore, several studies link poor oral health to metabolic syndrome,¹⁸ obesity,¹⁹ severe mental illnesses,²⁰ Alzheimer's Disease,²¹ and adverse pregnancy outcomes.²²

The most common oral diseases, dental caries and periodontal diseases, share common risk factors with chronic diseases such as diabetes, heart disease and chronic obstructive pulmonary diseases.^{23,24} Common risk factors including poverty, diet, hygiene, smoking, alcohol use, stress, and trauma represent significant opportunities for prevention and early intervention.⁶

The Surgeon General's report on oral health released in 2000 highlighted the importance of oral health as an integral component of general health and well-being.³ The report called upon various stakeholders to take actions to improve oral health and prevent unnecessary pain and suffering. It was followed in 2003 by *A National Call to Action to Promote Oral Health*,²⁵ which outlined steps and strategies to implement those actions. Sixteen years after the initial report, translation of those recommendations into policies, practices, and delivery in the healthcare system is still evolving.

National, state and local data show an increase in the visits made for non-traumatic dental conditions to hospital emergency departments (EDs), especially among low-income, uninsured adults, and people from racial or ethnic minorities.²⁶ These visits represent a significant public health concern and have many social and financial implications. ED visits for preventable dental conditions cost approximately \$1 billion per year.²⁷ An analysis of dental insurance claims data from 2005-2009 for patients with Type 2 diabetes, coronary artery diseases, or who were pregnant, showed a 40-74% reduction in medical costs and hospitalizations following simple non-invasive periodontal therapy, compared to untreated controls.⁸

Method

A clear opportunity to bridge the gap between oral and general health lies in creating an interprofessional model that uses the common risk factor approach and coordinates care between dental and non-dental providers (such as but not limited to medical, mental health, and other health-related providers) to reduce costs, improve patient experience and improve the overall health of Americans. The primary medical care setting offers a strategic site for integration and coordination, as well as for expanding the definition of

primary care to include dental care and understanding dental providers as primary care providers. In this setting, there is frequent contact with patients across the life span, particularly high-risk groups such as young children, pregnant women or adults with chronic diseases. Moreover, prevention and early detection efforts by non-dental providers may generate innovative medical-dental integration models that can address multiple health conditions, improve management of chronic diseases, and expand entry points to the medical/dental care system.

In 2014, the Health Resources and Services Administration (HRSA) published the report “Integration of Oral Health and Primary Care Practice,” describing its initiative to improve access to early detection and preventive interventions by incorporating oral health into primary medical care practice and expanding the oral health clinical competencies of primary health care professionals, with an emphasis on safety-net providers. HRSA found that frontline medical professionals (i.e., physicians, physician assistants, nurse practitioners, and midwives) have the required skills, resources, tools, and scope of practice to demonstrate clinical competencies in five domains: risk assessment, oral health evaluation, preventive interventions, communication and education, and interprofessional collaborative practice.²⁸ (See Table 1.)

The introduction of concepts such as the Patient-Centered Medical Home (PCMH) and Value-Based Payment have encouraged multiple stakeholders to collaborate and form alternative care models. The Agency for Healthcare Research and Quality defines PCMHs as healthcare models that are patient-centered, comprehensive, team-based, coordinated, accessible, and focus on quality and safety.²⁹ Accountable Care Organizations (ACOs) are groups of healthcare providers or hospitals that hold themselves accountable for the cost and quality of care they provide for their patients. In general, PCMHs and ACOs that include a dental component are more likely to have Medicaid or mixed-payer contracts in a federally qualified health center (FQHC) or community health center setting.³⁰ However, most ACOs are not responsible for dental care as part of their contract due to technical coordination challenges such as the lack of integration of electronic health records (EHR).³¹

Different approaches to integrating oral health with primary medical health care have been described in the literature.^{32,33,34,35} Integration models can take the form of an oral health system integrated with a medical system in the form of either a PCMH or an ACO. Oral health integration with a PCMH or an ACO can be further classified by its organizational characteristics/operational context (full integration, co-location, shared financing, virtual integration, referral systems). Integration can be also illustrated by interprofessional education and training programs.

The United States Public Health Service (USPHS) Oral Health Coordinating Committee issued the Oral Health Strategic Framework 2014–2017, in which the first overarching goal recognizes the value of integrating oral health into primary health care.³⁶ Strategies to accomplish the goal include: (1) advancing interprofessional collaborative practice and bi-directional sharing of clinical information to improve overall health outcomes; (2) promoting education and training to increase knowledge, attitudes, and skills that demonstrate proficiency and competency in oral health among primary care providers; (3) supporting the development of policies and practices to reconnect the mouth and the body and inform decision making across all HHS programs and activities; and (4) creating programs and supporting innovation using a systems change approach that facilitates a unified patient-centered health home.³⁶

Another strategy is illustrated by ASTDD's Best Practice Approach Report on Emergency Department Referral Programs for Non-traumatic Dental Conditions, published in 2015.²⁶ The report highlighted referral models that demonstrate the three core functions of public health: assessment, policy development, and assurance. One example is the Maryland Mountain Health Alliance (MHA) where an ED referral program assists low-income adults in finding the oral health care they need, and educates local providers about the benefits of integrating oral health screenings with primary health care. Simply, a patient who seeks dental assistance in the ED signs a release form allowing the hospital to send the patient's contact information to the MHA's community health workers to follow up until a dental home is established.²⁶

Below are three promising examples of advanced medical-dental integration models with more experience and reported outcomes that may pave the way for other health agencies to replicate or expand on the concept. These models have demonstrated successful outcomes.

Examples of Promising Models

1. Dental integration with a PCMH approach (Yakima Valley Farm Workers Clinic (YVFWC), an FQHC with multiple sites throughout Washington and Oregon)³³

Nineteen (fixed) and three (mobile) locations serve around 120,000 low-income patients who are mostly migrants and farmers in the Pacific Northwest. Medical and dental services are co-located in 10 of the 19 fixed locations and in 1 mobile clinic. Comprehensive risk assessment and oral health evaluation activities are conducted during the primary care visit, outreach services, or during WIC appointments. For example, WIC Certifiers (service-level staff trained in evaluation and education) inquire about medical, social and oral health history and review the dental chart. Patients not receiving any dental care for more than six months are then flagged by an integrated EHR as "high risk," auto-generating referrals for a same-day dental appointment. Patients receive clinical oral screening and preventive measures (e.g., fluoride varnish) by the clinical assistant or dental assistant in the case of mobile clinics. The primary medical care provider then refers the patient to a Dental Outreach Coordinator who works with the YVFWC team to establish a dental home. The YVFWC monitors interprofessional efforts by the number of dental referrals that result in scheduled appointments and the number of scheduled appointments that are kept each month.

2. Dental Integration with an ACO approach (Hennepin Health (HH), Minnesota)^{34,34}

Launched in 2012, HH is an ACO serving Medicaid expansion beneficiaries with the aims of reducing ED visits associated with high-cost dental procedures and pain medication dependency and creating an ED diversion program to establish a dental home. A team consisting of a community health worker, RN clinical coordinator, and social worker helps to enroll new patients, forming personal relationships to coordinate future care. High utilizers of ED services are managed by assigned care coordinators through social, medical, or dental services. HH operates as a network of four entities (safety-net medical center, social service organization, FQHC, and health insurer) that share the same financial risks, plus other affiliated providers. HH is given a capitated (fixed total cost of care) per-member per-month (PMPM) payment by Minnesota's Medicaid agency. At the end of each year, if HH saves part of the PMPM capitation payments, bonuses are given to provider partners using formulas that reflect each partner's size and pre-established performance measures. HH quantifies quality of care by tracking the usage, cost and health outcomes (e.g. monthly internal 12-

page scorecard that measures NCD outcomes, and through monitoring whether members have had at least one dental visit each year).

3) Interprofessional Education/Training Programs (HEENT to HEENOT Program, New York University)³⁷

These programs allow students or residents from one profession (e.g., medicine, nursing) to study in an all-inclusive approach with students from another profession (e.g., dentistry, dental hygiene) for the sake of improving patient care and experience. An example is the program at New York University, College of Nursing and College of Dentistry. The program involves a transition from the traditional head, ears, eyes, nose, and throat (HEENT) examination to the addition of the oral cavity: teeth, gums, mucosa, tongue, and palate examination (HEENOT) in the assessment, diagnosis, and treatment of oral–systemic health. Oral health core knowledge and clinical competencies for primary care nurse practitioners (NP) and primary care nurse midwife (NM) students are introduced early in the curriculum through classroom, simulations and clinical experiences. For example, students are required to complete appropriate modules from “Smiles for Life” (SFL), a web-based national oral health curriculum³⁸ developed by the Society of Teachers of Family Medicine (STFM) in preparation for didactic and clinical experiences.

ASTDD recognizes that integrating oral health with primary health care is an evolving process and some organizational/technical challenges to integration exist. Yet, promising practice models around the States show that, with dedicated dental/medical champions, improvement in patient experience and overall health and reduction in healthcare costs is feasible through embracing an interprofessional culture and mindset.

Concluding Statement: Although primary care integration can take different forms, all models share the goal of improving the overall health of patients and communities. Successful integrative models necessitate a team approach and dedicated champions. Using the common risk factor approach and coordinating care between dental and non-dental providers can reduce costs, improve patient experience and improve overall health. The primary medical care setting offers a strategic site for integration and coordination, as well as for expanding the definition of primary care to include dental care and understanding dental providers as primary care providers. Echoing efforts by the US Health Resources and Services Administration, the US Public Health Service, and local, state, and other federal health agencies, ASTDD supports tested, evidence-based healthcare models that respect oral health as an essential and integral part of general health and wellbeing.

Table 1: Oral Health Competencies for Primary Care Practice

Domains	Competencies
Risk assessment	<ul style="list-style-type: none"> • Conduct patient-specific, oral health risk assessments on all patients. • Identify patient-specific conditions and medical treatments that impact oral health. • Identify patient-specific, oral conditions and diseases that impact overall health. • Integrate epidemiology of caries, periodontal diseases, oral cancer, and common oral trauma into the risk assessment.
Oral health evaluation	<ul style="list-style-type: none"> • Perform oral health evaluations linking patient history, risk assessment, and clinical presentation. • Identify and prioritize strategies to prevent or mitigate risk impact for oral and systemic diseases. • Stratify interventions in accordance with evaluation findings.
Preventive intervention	<ul style="list-style-type: none"> • Implement appropriate patient-centered preventive oral health interventions and strategies. • Introduce strategies to mitigate risk factors when identified.
Communication and education	<ul style="list-style-type: none"> • Targeted patient education about the importance of oral health and how to maintain good oral health, considering oral health literacy, nutrition and patients' perceived oral health barriers
Interprofessional collaborative practice	<ul style="list-style-type: none"> • Exchange meaningful information among health care providers to identify and implement appropriate, high quality care for patients, based on comprehensive evaluations and options available within the local health delivery and referral system. • Apply interprofessional practice principles that lead to safe, timely, efficient, effective, equitable planning and delivery of patient and population-centered oral health care. • Facilitate patient navigation in the oral health care delivery system through collaboration and communication with oral health care providers, and provide appropriate referrals.

Adopted from: Health Resources and Services Administration (HRSA). *Integration of Oral Health and Primary Care Practice*. 2015;(February):1-21. <http://www.hrsa.gov/publichealth/clinical/oralhealth/primarycare/integrationoforalhealth.pdf>. Accessed May 2, 2016.

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