INTERDISCIPLINARY APPROACHES FOR IMPROVED ORAL HEALTH:
BUILDING THE FIELD THROUGH INTEGRATED AND COMMUNITY-BASED HEALTH PRACTICES

AMERICAN ASSOCIATION OF PUBLIC HEALTH DENTISTRY (AAPHD) COUNCIL ON PRACTICE
IN COLLABORATION WITH AAPHD COUNCIL ON SCIENTIFIC INFORMATION
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INTRODUCTION

Oral health is important for overall health. Interdisciplinary and integrated approaches are needed to improve oral health. All health care professionals have roles to play in oral health, not only dental professionals. Whether they are referring patients for oral health care, applying fluoride varnish, or educating patients on tobacco cessation, health care providers are including oral health in their practices.

Dental professionals have a role to play in population health. While the work of clinicians focuses on preventing and treating disease, and restoring patients to proper function, clinicians can serve more than their individual patients and treat communities to advance the health of the public. There are key public health priorities where dental professionals can begin to act, including human papillomavirus (HPV) vaccination, diabetes testing, nutritional counseling for dental caries and periodontal disease and overall health, and reducing opioid misuse.

In moving forward with new actions, we must understand our past. Examples of the dentist’s integration of shared practices that directly relate to oral health include tobacco use, glycemic control, and oral cavity and oropharyngeal cancer examinations, which are currently Oral Health Objectives for Healthy People (HP) 2020. However, the historical actions taken by dentists and dental hygienists have seen only incremental incorporation into practices over time.

For example, the proportion of adults who receive information from a dentist or dental hygienist focused on reducing tobacco use or cessation was about 10.5% in 2011-12, and the HP2020 target is 13.2%. Likewise, receiving an oral cancer examination was 23.3% of adults in 2011-2012, with a target of 28.6% for 2020. Being tested or referred for glycemic control was 5.7% in 2011-2012, with a target of 7.3% in 2020. Codes on dental procedures exist for tobacco counseling, oral cancer screening, and recently for diabetes testing. Lack of ready measurement, low reimbursement, or other explanations may account for the relatively slow adoption of these activities.

In moving forward, we can learn from recent examples of oral health actions undertaken by physicians and medical health care teams, including applying dental varnish during well-child visits, reducing emergency department or room visits for dental problems by referring to primary dental homes, and utilizing “the Concise Oral Exam” available on the National Institute of Dental and Craniofacial Research website. All of these actions indicate sharing and shifting roles amongst the health care providers to improve the population’s health. The major question remains: “What is what interdisciplinary approaches improve the overall health of the population by focusing on oral health?”

What is dental public health?

As adopted and approved by the National Commission on Recognition of Dental Specialties and Certifying Boards, dental public health is:

the science and art of preventing and controlling dental diseases and promoting dental health through organized community efforts. It is that form of dental practice which serves the community as a patient rather than the individual. It is concerned with the dental health education of the public, with applied dental research, and with the administration of group dental care programs as well as the prevention and control of dental diseases on a community basis.

Dental public health promotes oral health through organized community approaches for the prevention and control of oral diseases. It uses multidisciplinary teams to improve population oral health and reduce disparities across the lifespan. It aims to promote optimum oral health for all by integrating the societal determinants of health, combining oral health with general health, and addressing the evolving needs of the community.

Oral health providers play an essential role in advancing the health of their communities by educating patients on public health relevant topics that impact on oral health. Practically, this involves providing chairside screenings, offering community-based preventive services, and advocating for policy changes to improve the overall health of the public.
This white paper highlights three interdisciplinary approaches for improving oral health: HPV vaccination uptake, fluoride varnish application, and reducing emergency department (ED) utilization for non-traumatic/preventable dental conditions. Each example highlights how population health can be improved with integrated health practices. Each describes the public health significance of the action; highlights best, evidence-based strategies; presents stories from the field to illustrate the impact of the action; and suggests how dental providers can advocate for change, while optimizing oral health and subsequently overall health.

THREE INTERDISCIPLINARY APPROACHES FOR IMPROVING ORAL HEALTH AND STORIES FROM THE FIELD

HPV Vaccination
HPV is a DNA virus, which has been associated with cancers at different anatomic sites, including the oropharynx. The most common route of infection is sexual intercourse. The number of HPV-associated oropharyngeal cancers has increased by 225% in the past 20 years.4 According to the Centers for Disease Control and Prevention, there are approximately 18,000 new HPV-associated oropharyngeal cancer cases in the US each year, with about 70% being caused by any HPV type, and about 60% caused by high risk HPV (i.e. HPV 16).5,6 Lifetime number of oral sex partners is the major risk factor for HPV-related, oropharyngeal cancers, along with smoking, heavy alcohol consumption, use of marijuana and history of genital HPV infections.7,8 The advent of the HPV vaccine has the potential to dramatically reduce the burden of HPV-associated cancers. Vaccine efficacy has been demonstrated against cervical HPV infections and precancerous lesions, as well as oropharyngeal, vulvar, vaginal, and anal infections. The nine-valent vaccine has the potential to prevent 90% of cervical cancers, 60% of oropharyngeal cancers, 80% of anal cancers, 55% of vaginal cancers, as well as many penile (48%) and vulvar (49%) cancers.9,10 Routine vaccination is recommended at age 11 or 12 years, but can be started as early as age 9. The vaccination is recommended for females aged 13 through 26 years, for males aged 13 through 21 years, and through age 26 years for bisexual, gay, transgender, and other men who have sex with men, and for immunocompromised individuals.11 Roughly, only 65% of girls and 56% of boys receive the first dose of the HPV vaccine, and only 43% of teenage boys and girls are up-to-date on all of the recommended subsequent doses.12

Oral health care providers have the great opportunity to recognize early signs and symptoms of HPV-related pathology, which typically present with a persistent sore throat, difficulty swallowing and/or opening the mouth fully, an oropharyngeal or neck lump, or unexpected weight loss.13 Oral health care personnel may be involved in primary prevention of oral HPV infections by promoting HPV vaccinations among their parents /caretakers and young patients.14 Oral health care providers’ promotion of the HPV vaccine is an opportunity for medical-dental collaboration.15 Oral health care providers’ HPV vaccination recommendations may increase the vaccine uptake, thus further preventing HPV associated head and neck cancers.16

STORY FROM THE FIELD:
The Massachusetts Coalition for HPV/Cervical Cancer and HPV-related Cancers Awareness Dental Education Program

The Massachusetts Coalition for HPV/Cervical Cancer and HPV-Related Cancers Awareness dental education program seeks to educate dental professionals about the connection between HPV and oral, cervical and other cancers. The Coalition has developed evidence-based oral cancer screening and referral guidelines for dental professionals.17 In addition, it has created a professional development curriculum to teach dental professionals how to utilize the guidelines, including talking tips for speaking with their patients about the importance of HPV vaccination, as well as helping them recognize the appearance of HPV-related signs and symptoms.18
Fluoride Varnish Application by Non-Dental Providers

Fluoride varnish is a high concentrated fluoride product that, when applied two to four times a year, either on the surface of primary or permanent teeth will help prevent dental caries. In the primary dentition, the use of fluoride varnish is associated with a 37% decrease in decayed, missing, and filled (dmf) tooth surfaces.19 In the permanent dentition, its use is associated with a 43% reduction in DMF.

The benefit of fluoride varnish appears to be independent of baseline caries risk or severity; background exposure to fluorides; and application features such as prior prophylaxis, concentration of fluoride, or frequency of application. Professional dental organizations, including the ADA, American Academy of Pediatric Dentistry (AAPD), Association of State and Territorial Dental Directors (ASTDD), and the American Academy of Pediatrics (AAP), recognize the value of fluoride varnish in preventing dental caries.20-23 The ADA and AAP recommend infants and children received fluoride varnish treatments at least every six months beginning with eruption of the teeth.

The ADA, AAPD and AAP recommend a dental visit by children by age one, though the percentage who see a dentist by age one is less than 8%.24 As a comparison, the percentage of children who have had a well-child visit by age one is above 80%.25 Most young children will see their primary care medical provider up to seven times before their first birthday, and this may be the only source of preventive oral health services for children experiencing barriers to access to dental care. These providers can educate parents and caregivers on oral health issues and apply fluoride varnish. Currently, the percentage of medical practices in the United States that have implemented fluoride varnish is low, and the rates of implementation vary by state.26 Fluoride varnish is not a silver bullet for the prevention of dental caries, but serves as an interdisciplinary tool to actively prevent dental caries and promote overall health.

STORY FROM THE FIELD:
North Carolina Into the Mouths of Babes Program

Into the Mouths of Babes [IMB] – North Carolina (NC) Oral Screening and Fluoride Varnish Project is a collaborative partnership that began with the NC Academy of Family Physicians, the NC Pediatric Society, the NC Division of Medical Assistance, the NC Oral Health Section, the University of North Carolina (UNC) School of Dentistry, and the UNC Gillings School of Global Public Health. The program trained medical providers to deliver preventive oral health services to Medicaid-insured children, from the time of tooth eruption to age 42 months, including oral evaluation, risk assessment and dental home referral, parent/caregiver counseling, and fluoride varnish application.27 The program has been shown to reduce hospitalizations for dental treatment, decrease dental caries, satisfy parents, and reduce the disparity in dental caries between children from different family income levels at the community level.28-32
ED Utilization for Non-Traumatic/Preventable Dental Conditions

Increasing emergency room use for dental conditions continues to present a financial burden on patients and hospitals. Most dental ED visits are for non-traumatic/preventable dental conditions that could be managed more efficiently in the dental office setting. These visits often result in patients receiving pain medications and/or antibiotics for infection. Definitive treatment for dental conditions is not routinely provided. Emergency room visits cost an average of $749 and are an expensive, inefficient source of dental care. More than 70% of these visits could be diverted to other settings. Most ED users for dental conditions are those without private insurance, often presenting during times when most dental offices are open.33

Despite the known and/or strongly suspected correlation between untreated periodontal disease and numerous serious illnesses, such as cardiovascular disease, diabetes, rheumatoid arthritis, certain cancers, and Alzheimer’s disease, little is being done to educate patients about the importance of oral health as it impacts their overall health. Regrettably, the general view is that dentistry addresses restorative and cosmetic issues only.

The failure to address the problem of ED utilization for dental conditions has huge health care, economic and societal consequences. Many chronic diseases are exacerbated, people flood emergency rooms at a huge cost (estimated at over $2 billion), and the loss of work and school days impacts productivity. By integrating and coordinating dental and medical care, these problems may be mitigated. Through patient education from dental and medical providers, patients will better understand the importance of addressing their oral health needs and the potential impact derived. By having all patient encounters serve as an opportunity to share appropriate preventive healthcare information, problems can be addressed before they arise.34

STORY FROM THE FIELD: Mount Sinai Health System and ProHEALTH Dental Integrated Care Affiliation

Mount Sinai Health System and ProHEALTH Dental have an innovative “Academic and Clinical Affiliation Agreement” that creates a referral system for physicians, nurse practitioners, nurses, nursing assistants, and social workers to use for their patients needing dental services. By identifying potential issues and providing access to dental care for all Mount Sinai patients, the collaboration hopes to see a decrease in ED use for preventable dental conditions over time.35-36

In this agreement, dental residents rotate through ProHEALTH Dental community-based offices, where the dentists are on the Mount Sinai/Icahn School of Medicine faculty and contribute to the medical residents’ training. Mount Sinai provides routine oral surgery, emergency services, and a Faculty Practice Clinic within the hospital. These faculty members work in concert with the Mount Sinai primary care offices to provide patient education and coordinated oral health care for their patients. Mount Sinai also provides dental services at its Adolescent Health Center.

The partnership has developed scheduling modules so that patients can make dental appointments directly from their physician’s office. An insurance navigator program, currently under development, is designed to address the insurance issues that are frequently a concern to patients with limited dental coverage. Health records are integrated for all Mount Sinai Health System sites, so patient information can be viewed by all providers at any time. It is estimated that this integrated care model will provide upwards of 50,000 dental patient visits per year and will decrease ED use for preventable/non-traumatic dental conditions.
FUTURE DIRECTIONS

The Council on Practice is committed to moving the discipline of dental public health beyond fluoride, sealants, and education. The future of dental public health lies in:

- addressing the causes of inequalities and inequities in oral health and overall health;
- evaluating and advocating for comprehensive dental/oral care models and systems;
- advancing the science of oral health promotion; and
- championing social and policy changes that improve the oral and overall health of communities and populations.

The Council on Practice is uniquely situated to work with dental and public health stakeholders to make this future a reality. Internally, we have the opportunity and the responsibility to stimulate and facilitate conversations, as well as coordinating action with other AAPHD councils on addressing inequity, evaluating and advocating for improving dental delivery models and systems, advancing the science of oral health promotion, and championing social and policy change to improve oral health. Working together towards a common goal with a shared vision, while applying each council’s expertise to the aforementioned efforts, AAPHD can continue to be the voice for dental public health. The Council on Practice can lead the effort to connect all AAPHD councils to address issues related to dental public health practice.

The Council on Practice must also work with external organizations and stakeholders to have the greatest impact on vulnerable communities and population health, and to contribute to larger conversations on public health. This white paper is a first step, but the work cannot end here. The Council on Practice can educate and learn from dental, public health, and other health care colleagues. By such facilitation and participation, there will be more collaborative efforts in advancing individual and collective action to improve overall health. Shared policies, joint advocacy efforts, dental public health presence in new places, and potentially an enhanced recognition of the value of dental public health will result in improved population health.

The Council on Practice will develop numerous interdisciplinary topics and integrated care approaches that include the management and improvement of oral health and overall health from a public health perspective. Educational and step-by-step webinars will supplement each example so that dental providers can begin to implement these approaches in practice in their own communities. They will provide an opportunity for other health care and public health practitioners to work with dental providers as allies in population-level health projects. By sharing and promoting the best, evidence-based practices, the Council on Practice will ensure that dental public health practice reflects the most advanced scientific findings.
REFERENCES


