

Executive Summary

Noncommunicable chronic diseases (NCDs) account for almost 90% of total deaths in the United States.¹ The four most common NCDs—cardiovascular diseases, diabetes, cancers, and chronic respiratory diseases—share common risk factors, including cigarette use, alcohol use, and dietary behaviors associated with obesity and elevated blood sugar.¹ The most common oral diseases—dental caries, periodontal disease, and oral cancer—also share these same risk factors.

A coordinated approach to primary prevention, the “common risk factor approach,” argues that coordinated primary prevention of oral and systemic diseases will reduce programmatic costs, and increase efficiency and effectiveness.² However, use and evaluation of this coordinated approach in primary prevention activities in the United States has not been well documented.

This report describes the results of an environmental scan to identify, categorize, and describe examples of medical-dental integration in US public health settings. Findings are intended to inform public health officials and other stakeholders about existing programs and policies that encourage coordination and integration.

Methods

Between September 2016 and September 2017, we collected information about programs through a three-step process:

- 1) A literature review that included a scoping review of peer-reviewed publications and a search of grey literature (i.e., conference proceedings, presentations, technical reports)
- 2) A series of web-based surveys administered to three groups of stakeholders: state oral health programs, state chronic disease programs, and community dental programs
- 3) Key informant interviews of selected stakeholders identified from the previous activities

Results

The majority of integrated programs that we identified were clinic-based and categorized according to risk factor or chronic condition targeted:

- 1) Cardiovascular disease and oral health
- 2) Diabetes and periodontal disease
- 3) Maternal and child health
- 4) Obesity and nutrition
- 5) Tobacco use and oropharyngeal cancer

Other major categories of programs, which broadly target multiple common risk factors, included:

- 1) Multimedia health campaigns
- 2) Co-location of medical and dental services
- 3) Health workforce innovations
- 4) Integrated insurance benefits

Key Findings

Cardiovascular disease and oral health

- Integrated activities targeting cardiovascular and oral health in public health settings typically involve clinical screenings of dental patients for hypertension.
- Well-developed programs generally include formalized clinical protocols for screening and referral, standardized training, and electronic health record (EHR) systems that facilitate and track outcomes.

Diabetes and periodontal disease

- Chairside (point-of-care) screenings for diabetes in dental settings will identify a substantial

proportion of adult patients with elevated blood glucose; thus, programs may wish to target activities towards their most at-risk patients.

- Clinical co-location, as well as shared EHR systems, facilitate bidirectional referrals between medical and dental providers for patients with diabetes.
- The type of device used for chairside screenings should be chosen carefully in order to minimize the chance of false positives or negatives.

Maternal and child health

- Programs integrating medical and dental care for pregnant women and children most commonly involve dental referrals from pediatric primary care providers, who may also provide fluoride varnish and anticipatory guidance related to oral health.

Obesity, nutrition, and oral health

- Integrated efforts targeting nutrition often take the form of media campaigns and largely focus on reducing sugar-sweetened beverage consumption and increasing water consumption.
- Several community oral health programs report local activities related to dietary counseling, improving food security, and dental referrals for nutritional counseling.

Tobacco use and oropharyngeal cancer

- Programs primarily offer integrated approaches to tobacco cessation and counseling; they may also encourage medical providers to perform oral cancer screenings.
- HPV vaccinations and their role in preventing oral cancer is an emerging area of medical-dental integration in public health activities.

Non-clinical approaches

- **Multimedia health campaigns** that explicitly target both oral and general health outcomes focus on reducing sugar-sweetened beverage consumption. The two campaigns detailed in this report target large audiences using strong, central messages.
- **Co-location of medical and dental providers** facilitate bidirectional referrals and flagging records of dental patients who have chronic conditions. Co-located delivery systems may include medical and dental providers located under one roof or, alternatively, medical and dental providers working at separate facilities within a centrally managed system of care.
- **Innovative health workforce models** that contribute to integrated medical and dental care include dental hygienists working in primary medical care settings as well as community health workers (CHWs) whose scope spans oral and systemic health.
- **Integrated insurance benefits** offer innovative models that provide dental coverage to individuals with chronic medical conditions. Preliminary research on these programs has demonstrated overall cost savings by including a dental benefit for these populations.
- **Health care reform** activities related to medical-dental integration primarily include emerging value-based purchasing models as well as Accountable Care Organizations. However, the degree of dental involvement in these activities is currently quite limited.

Challenges

Most of the challenges identified by this environmental scan are not unique to medical-dental integration, but shared with other public health activities. These include lack of funding, stakeholder buy-in, competing priorities, scalability, and sustainability. Specific challenges in this field are largely related to:

- 1) **Evidence of effectiveness.** Many integrated activities lack documentation of effectiveness for cost and health outcomes.
- 2) **Professional guidance.** Stakeholders note a lack of standardized guidance from professional organizations and agencies, and a lack of established protocols for implementing integrated activities.

- 3) **Reimbursement for services.** Payment mechanisms to reimburse providers for cross-disciplinary services are lacking, although some state Medicaid agencies have made progress here.

Recommendations for future directions

- 1) **Patient referrals.** Many programs that target oral health and chronic diseases include cross-disciplinary patient referrals. For example, dental providers who screen patients for diabetes often refer high-risk patients for primary care follow-ups. Active referral methods, including “warm hand-offs” and direct patient scheduling, can improve referral completion rates. Completions are also improved by establishing formalized protocols within an organization and training providers in these protocols. Active methods that use shared EHRs also allow for programs to evaluate outcomes.
- 2) **Professional guidelines.** Creating interprofessional guidelines and toolkits for integrated activities would reduce start-up barriers to implementation, improve provider confidence, and facilitate standardization.
- 3) **Holistic targeting of risk factors.** Many programs target multiple common risk factors. For example, it was not uncommon to find that community health centers that perform point-of-care diabetes screenings in dental settings also perform blood pressure screenings. Future initiatives should consider targeting common risk factors using a holistic approach where this is appropriate.
- 4) **Prioritization of local community needs.** Although this type of holistic approach was often noted with large-scale organizations, several smaller programs targeted single risk factors based on local needs assessment. This approach may be more appropriate for organizations that serve smaller populations or have fewer resources.
- 5) **Integration of health care teams.** Innovations that capitalize on workforce flexibility of dental hygienists and CHWs help bridge the gap between medical and dental care. In addition to preventive services, these workers can also assist with case management, care coordination, and social services. By incorporating these workers into integrated care teams, public health programs can extend the reach of medical and dental services to address social determinants of health.
- 6) **Develop public health legislation to target chronic diseases and oral health.** Legislation that supports workforce flexibility, targets sugar-sweetened beverage consumption, and improves reimbursement for cross-disciplinary services promotes high-level systems change to support integration.

Conclusions

Public health activities targeting oral health and chronic diseases operate at multiple levels, including public policy, community-level campaigns, health care delivery systems, and clinical interventions. Well-developed efforts were especially noted for environmental approaches targeting sugar-sweetened beverage consumption, state-level efforts targeting tobacco use and oral cancer, and co-location of medical and dental services. The lack of robust evaluation and effectiveness data surrounding most of the activities described in this report may hamper widespread implementation, sustainability, and stakeholder support.