

School Oral Health:

An Organizational Framework to Improve Outcomes for Children and Adolescents

About This Framework

For far too many children in our nation, untreated oral disease is a formidable barrier to lifelong health and academic success. The burden of this chronic disease is felt disproportionately among children who are minorities and from families with low incomes. And because oral disease is largely preventable – and costly when treatment is delayed – elementary and secondary schools have become common denominators in community-based approaches to reach children at risk for oral disease. To oral health champions and practitioners, a school-centered, cross-sector collaborative strategy has the potential to:

1. create greater oral health literacy among a population of high risk children;
2. build lifelong knowledge, skills, and habits essential to oral health;
3. address powerful determinants of oral disease such as family and peer influences and access to oral health care;
4. ensure systematic delivery of age-targeted preventive services such as topical fluoride and dental sealants applications when children are most susceptible to the onset of oral disease; and
5. develop care-management systems to help families successfully navigate community services and connect children to a dental home.¹



Measured against the standard of the James Irvine Foundation, which defines *field* as “a community of organizations and individuals working together towards a common purpose and using a set of common approaches to achieving that goal,”² the school oral health community is in the process of building a formative foundation for the emerging field of school oral health.

This paper represents a step forward by advancing a shared vision of the field of school oral health, starting with the articulation of a framework for how communities can organize the array of partners, policies, programs, services, and curricula necessary to achieve better and more equitable oral health outcomes. Each component of the framework can stand alone, but when all components are integrated, the likelihood that the oral health of

1. Policy on the dental home. American Academy of Pediatric Dentistry Council on Clinical Affairs. 2015. http://www.aapd.org/media/Policies_Guidelines/P_DentalHome.pdf.
2. The Strong Field Framework: a guide and toolkit for funders and nonprofits committed to large-scale impact. The Bridgespan Group for The James Irvine Foundation, June 2009. Shariff, J. A., & Edelstein, B. L. (2016).

students at high risk for oral disease will improve is greatest. Ultimately, the framework can drive future work around a uniform set of nationally adopted data and outcome measures that will help standardize practice, demonstrate impact, allow for comparability across the field, and advance quality improvement for higher performance.

We build this work on the seminal contributions of children’s oral health thought leaders. Public health professional, academic, and advocacy organizations such as the Association of State and Territorial Dental Directors (ASTDD), the American Association for Community Dental Programs, the National Maternal and Child Oral Health Resource Center, and the World Health Organization have produced a rich array of descriptive publications and guidance documenting best practices, core competencies, delivery frameworks, model programs, and resources.

The Framework

We propose five complementary components that span a continuum from preventive oral health services to treatment of oral disease, including:

- Oral Health Education
- Oral Health Screening
- Oral Health Preventive Care
- Care Coordination and Linkage to Community-Based Oral Health Care
- Oral Health Treatment in Schools

COMPONENT

Oral Health Education

Oral health education in schools is planned learning that ensures students have the information, skills, and competencies they need to develop and maintain positive, healthy oral health practices throughout their lives. Instruction should align with the National Health Education Standards and incorporate characteristics of effective health education curricula. The Centers for Disease Control and Prevention (CDC), drawing from a growing body of research, summarizes these characteristics as follows: teaching functional health information; shaping personal values and beliefs that support healthy behaviors; shaping group norms that value a healthy lifestyle; and developing the essential health skills necessary to adopt, practice, and maintain health-enhancing behaviors.³

In the classroom. Oral health education instruction should be based on scientific evidence, integrated sequentially as developmentally appropriate across a comprehensive K-12 health curriculum, and taught by qualified, trained teachers. Learner objectives should be the following: the anatomy and physiology of the mouth; oral disease and how to prevent it; effective oral hygiene practices such as brushing, flossing, and drinking fluoridated water; the effects of tobacco, “vaping,” smokeless tobacco, alcohol, and other drug use on oral health; diet and nutrition; safeguarding teeth and preventing oral injuries; and accessing a dental home.

3. Characteristics of an effective health education curriculum. Centers for Disease Control and Prevention National Center for Chronic Disease Prevention and Health Promotion. June 2015. <https://www.cdc.gov/healthyschools/sher/characteristics/index.htm>.

In the school health room or school-based health center. Oral health education is an important part of one-on-one encounters between students and school health professionals (e.g., nurses, nurse practitioners, physician assistants, physicians, dentists, dental hygienists, health educators) and should be an integral part of school health care assessments, screenings, primary care, anticipatory guidance, and counseling.

The American Academy of Pediatrics recommends *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents*, which provides oral health anticipatory guidance for infants, children, and adolescents from birth through age 21. This resource is organized around 12 key health promotion themes and each stage of child development. The chapter “Promoting Oral Health” offers guidance on oral health promotion.⁴

In hallways and public spaces. Schoolwide health campaigns (e.g., assemblies, health fairs) are effective promotional strategies to supplement and reinforce classroom, school health rooms, or school health center educational objectives. Schoolwide health promotion messages can focus on the following topics for students and their families: eating healthy foods; accessing safe, clean, and fluoridated drinking water; encouraging brushing with fluoridated toothpaste; and preventing tobacco use or quitting.

Oral health education is an important part of one-on-one encounters between students and school health professionals.

COMPONENT

Oral Health Screening

Oral health screening consists of reviewing the patient’s oral health history, conducting a visual screening of the oral cavity, and referring the patient for preventive oral health services or further assessment, restoration, or treatment, as needed. Screeners are not conducting oral examinations or making diagnoses.

When conducted in schools, screenings are an effective, systematic approach to identifying and stratifying oral health risk across the entire student population (whose families have consented). Typically conducted by a school’s health professional or community oral health partner, screenings are usually organized annually and may be scheduled over more than one day based on size of the student population and number of students with parental consent.

Because they are not present at the screening, screeners should communicate with parents and guardians about the status of their child’s oral health and any recommended follow-up with an oral health professional. Effective oral health screening programs reinforce good oral hygiene habits; connect students with unmet oral health needs to further assessment, restoration, and treatment services (whether offered at the school site or in the community), and use a care-management mechanism to coordinate and track all referrals. In schools with school-based health centers, oral health screenings should be part of overall health screenings conducted by the medical care provider.

4. Bright futures guidelines for health supervision of infants, children, and adolescents. The American Academy of Pediatrics. 2017. https://brightfutures.aap.org/Bright%20Futures%20Documents/BF4_OralHealth.pdf.



These conditions are necessary for school oral health screening programs to be successful:

- **Establish** explicit referral criteria for oral health conditions that require follow up care.
- **Identify** oral health professionals who agree to provide care to students needing follow-up.
- **Determine** if screenings are schoolwide or targeted specifically to students in certain grades or those at high risk for oral disease.
- **Establish** and vet the parent or guardian consent process through all appropriate levels within the school system.
- **Distribute** and collect signed consent forms well in advance of the screening event.
- **Identify** health professionals who will conduct screenings (dentist, dental hygienist, or trained non-oral health professional such as a physician, nurse practitioner, physician assistant, nurse).
- **Determine** the periodicity of screening (i.e. annually, bi-annually).
- **Decide** if and how screening results will be shared beyond the students' families. *Will the information be shared with school health services, local public health agency, or community oral health professionals? Will it be shared in aggregate or include individually identifiable health information?*

COMPONENT

Preventive Oral Health Care

Published in 2000, the *Oral Health in America: A Report of the Surgeon General* states that effective prevention programs use complementary fluoride and dental sealant strategies to reduce the risk of dental caries in children and adolescents.⁵ We include both strategies as parts of the preventive oral health care component. It is also important to remember that most states require active consent for oral health services – including preventive services from a student's parent or guardian and individual states' statutes and case law govern informed consent.⁶

Sealants. Dental sealants are thin coatings applied to the biting surfaces of permanent back teeth to form a physical barrier that prevents growth of bacteria and accumulation of food particles in the grooves of back teeth. School-based sealant programs are usually initiated and run by the state, county, community, or school district. Local departments, federally qualified health centers, school-based health centers, or other community oral health professional groups can be partnering sponsors and providers of these programs.

According to the CDC, school-based sealant programs are especially important for reaching children and adolescents from low income families who are less likely to receive oral health care in the private sector when compared with children and

5. Oral health in America: A report of the Surgeon General-- Executive Summary. US Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health, 2000.

6. Guideline on informed consent. American Academy of Pediatric Dentistry Council on Clinical Affairs. 2005. Revised 2015. http://www.aapd.org/media/Policies_Guidelines/G_InformedConsent.pdf.

adolescents from families with higher incomes. Communities generally implement sealant programs in schools in which a large percentage of students are eligible for the federal free or reduced-cost lunch program (National School Lunch Program). Many school-based sealant programs target students in grades 2 and 6 to seal the first and second permanent molars respectively.

School sealant programs are made available in a school setting in several ways. Sealant programs can be delivered using a permanent dental operatory located in or on school property, in mobile clinics that travel campus to campus, or portable dental operatory equipment that is set up in available multi-purpose school spaces. Ideally, before a mobile or portable dental sealant program arrives at a school, students should be screened (see oral health screening component) so program administrators have an accurate count for sealants and/or fluoride varnish applications. When time and staff are constrained, school-based sealant programs can organize the oral health screening, sealant placement, and fluoride varnish application during one inclusive school-based program visit. Fluoride is applied to all tooth surfaces after sealant placement on tooth pit and fissures to ensure that fluoride does not negatively affect sealant retention.

Fluoridation. Ensuring students are drinking community fluoridated water, offering oral hygiene programs in which students brush their teeth with fluoridated toothpaste or use fluoride mouth rinse, and offering school fluoride varnish programs are best practices in schools to effectively control and reduce dental caries in children and adolescents. Research about the effectiveness of fluoride mouth rinse is inconclusive though it continues to be

used in some school settings, especially in those without access to community fluoridated water. Additionally, the American Dental Association recommends fluoride varnish applications at least every 3-6-month intervals to help control or reduce dental caries.⁷

COMPONENT

Care Coordination and Linkage to Community-Based Oral Health Care

Care coordination is the deliberate organization of patient care activities to facilitate the appropriate delivery of health services. It involves marshalling the personnel and other resources needed to carry out all required patient care activities. Care coordination is typically managed through the exchange of information among participants responsible for different aspects of care.⁸

Effective school oral health programs integrate care coordination processes for students who have observable oral disease or abnormalities. The aim is to ensure that students in need of treatment are connected to an oral health professional and receive services in a timely fashion to prevent pain, infection, and premature loss of teeth. Ideally, the student is linked to a dental home.

7. Weyant RJ, Tracy SL, Anselmo T, Beltran-Aguilar ED, et al. Topical fluoride for caries prevention: Executive summary of the updated clinical recommendations and supporting systematic review. *JADA* 2013;144(11):1279-1291.

8. McDonald KM, Sundaram V, Bravata DM, et al. Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies. Vol. 7. Care Coordination. Rockville, MD: Agency for Healthcare Research and Quality. June 2007. Definitions of Care Coordination and Related Terms. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK44012/>.

COMPONENT

Oral Health Treatment in Schools

For reasons of finance, geography, or time (and sometimes all of the above), some families cannot access oral health care. To reduce these barriers, many communities are expanding school oral health programs to include onsite oral examinations, cleanings, restorations, and treatments. Permanent dental operatories on school property, mobile clinics that travel campus to campus, and portable dental operatory equipment that is set up in multi-purpose school spaces are some examples. Some schools with more permanently fixed equipment serve as hubs for students from other schools in the district. For these programs, transportation is organized to and from the school oral health program. Of note, teledentistry and the adoption of the virtual dental home model are an emerging methods of offering services and can deliver preventive and early intervention services in schools.⁹



9. Glassman P, Harrington M, Namakian M; Subar P. The virtual dental home: Bringing oral health to vulnerable and underserved populations. 2012. California Dental Association Journal 40(7): 569-577.

SUPPORT COMPONENT

Data Collection

Successful school oral health programs have embedded capacity to collect and report on a meaningful and uniform set of process and outcome measures that uniquely reflect the program's services. Collecting, analyzing, and reporting data enables school oral health programs to grow, strengthen, educate, and advocate. Data can be used to show that programs are a cost-effective and keep students healthy, in school, and ready to learn.

School oral health programs should collect the following at a minimum:

- Student insurance coverage (i.e., Medicaid, Children's Health Insurance Program (CHIP), private insurance)
- Targeted population demographics (age(s), grade(s), school(s), race(s)/ethnicities)
- Percentage of consent forms returned
- Number of students screened (and as a percentage of eligible students)
- Number of students identified with untreated decay, including the number of students with early treatment needs and urgent treatment needs
- Number of students who received oral health services
- Number of students referred for oral health treatment, restorative care, or follow-up care
- Number of students who access community oral health services

These are some data collection tools:

CDC SEALS

www.cdc.gov/oralhealth/data-tools/index.htm

This tool is designed to capture data on school sealant programs and allow programs to generate reports.

ASTDD Basic Screening Survey

www.astdd.org/basic-screening-survey-tool/-children

This tool provides the guidance and information needed to plan and conduct an oral health screen of preschool or school-aged children.

Smart Mouths Smart Kids Data Collection Tool

http://smartmouthssmartkids.org/?page_id=70

This data collection tool is an electronic dental record designed to capture the oral health data elements most commonly needed in a school setting.

SUPPORT COMPONENT

Sustainability

Program sustainability encompasses more than funding. Sustainability can be defined as the ability to maintain positive program outcomes over time and can include a number of critical elements. The Warren Brown School of Social Work, Center for Public Health, Washington University in St. Louis developed a sustainability assessment tool that includes the following:¹⁰

- **Environmental support** — the economic and political climate that affects your ability to get things done
- **Funding stability** — the ability to develop a stable and diverse funding base
- **Partnerships** — the critical alliances between both private and public organizations
- **Organizational capacity** — appropriately trained staff and strong visionary leadership
- **Program evaluation** — data collection and tracking
- **Program adaptation** — the ability to adapt to changing circumstances
- **Communications** — the ability to tell the story of your work to external audiences in a compelling way
- **Strategic planning** — the routine alignment of your program with internal and external resources and opportunities

10. 10 The Program Sustainability Assessment Tool. Washington University, St. Louis, MO. 2012. <http://www.sustaintool.org>.

Sustainable school oral health programs need a clear and strong mission and vision with defined outcomes and potential benefits for students, their families, the community, and the school. Sustainable programs also need strong partnerships with other community oral health programs and providers, families and students, school health and school health center staff, the school building leadership, parent-teacher organizations, local and state school boards, and the superintendent of education.

Organizational capacity for school oral health programs should include strong and visionary leadership and staff with the ability, knowledge, and expertise to provide oral health services in schools.

Operationally, school oral health programs need to have the administrative capacity to, at a minimum: support a mechanism to distribute and collect parent/guardian consent forms in the school; bill for services; enter into a memorandum of understanding/memorandum of agreement with the school; and purchase, store, maintain, and transport necessary equipment as needed.

School oral health programs should also have a clear and effective system of data collection, billing, and financial tracking in place. The school oral health program needs stable and diverse sources of funding that include a revenue mix of reimbursement for services, in-kind contributions, grants, and donations. Programs need to be aware of the ever-changing landscape within schools and school systems and have the capacity to be flexible and make adjustments as needed.

Lastly, school oral health programs need to be able to demonstrate the benefits of meeting students' oral health needs in schools, the positive impact on students' oral health, and the improved educational outcomes and attendance that occur as a result of the program.

Oral Health Colorado and the DentaQuest Foundation created *The Smart Mouths Smart Kids Toolkit* which offers resources specifically designed to support the creation of sustainable school oral health programs.¹¹



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11. Smart Mouths Smart Kids: Improving Dental Health for Colorado Students (n.d.) <http://smartmouthssmartkids.org/>.

Moving Forward

The emerging integration of oral health programs into U.S. primary and secondary schools continues to gain steam.

We hope the full breadth, depth, and scale of the effort will be realized in the near future. In 2014, the School-Based Health Alliance sought to accelerate the implementation of school oral health initiatives in school districts across the country with the support from the DentaQuest Foundation. We wanted to better understand the ongoing work to eliminate unjust inequities in oral health access and how we could best use those lessons to further school-based strategies. *What can be done to support this burgeoning field in its efforts to overcome inequities in accessing oral health care for students in the school districts across the US? How can we best foster the formation of a strong school oral health field that includes a diversity range of stakeholders (dentistry, dental hygienists, public health, medicine, nursing, education)?* In 2016, with those questions in mind, the School-Based Health Alliance created a school oral health learning community made up of several of the largest school districts from around the country. The learning community came together to support and strengthen school oral health, develop standards of practice, expand school oral health field knowledge, articulate the necessary core competencies, and coordinate and synchronize their work across all participating sectors.

As the school oral health field works to push beyond its current level of growth to truly transform how communities respond to oral health

inequity, it will need an aspirational vision that defines precisely what “school oral health” is, its distinct elements, implementation needs, performance measures, and outcomes.

This framework serves as the foundation for this bold transformational work. It sets the parameters, defines what “school oral health” means, and offers a common vocabulary and shared framework to move the field toward its vision and the core set of nationally adopted data and outcome measures that best reflect the uniqueness of school oral health.

We welcome your feedback and comments.

This document was produced by the School-Based Health Alliance and the Oral Health 2020 Network.