The purpose of this paper is to provide an overview of comprehensive oral health services offered in school-based health centers (SBHCs) to assist those interested in initiating and implementing such services. In the context of the paper, comprehensive oral health services are defined as diagnostic, preventive, and restorative oral health services identified through formalized treatment plans provided to children and adolescents.

“Alone we can do so little; together we can do so much.” —Helen Keller
Problem

In the United States, dental caries is one of the most common chronic childhood diseases. Among 5- to 17-year-olds, dental caries is more than five times as common as asthma and seven times as common as allergic rhinitis (hay fever). Despite progress in reducing dental caries, children and adolescents in families with low incomes experience more dental caries than those from families with higher incomes and are more likely to have untreated caries. In every state, children enrolled in Medicaid face the most significant burden of oral disease. Nationally, on average, only one in three children enrolled in Medicaid receives oral health services each year, compared with nearly two in three children with private insurance.

The need for oral health care is the most prevalent unmet health care need among children and adolescents, including those with special health care needs (SHCN). In addition, children and adolescents with SHCN are almost twice as likely to have unmet oral health care needs as their peers without SHCN across all income levels.

Dental caries affects children and adolescents in a variety of ways. An estimated 51 million school hours per year are lost because of oral-health–related illness. Results from a national study indicated that 5- to 17-year-olds missed 1,611,000 school days owing to acute oral health problems—an average of 3.1 days per 100 students. And children and adolescents from families with low incomes had nearly 12 times as many missed school days because of oral health problems as did those from families with higher incomes.

Moreover, early tooth loss caused by dental caries can result in impaired speech and development, inability to concentrate, reduced self-esteem, and absence from school. Children and adolescents with preventable or untreated health and development problems may have trouble concentrating and learning or may develop permanent disabilities that affect their ability to grow and learn. Children and adolescents experiencing pain are distracted and unable to concentrate on schoolwork. Poor oral health has also been related to decreased school performance, poor social relationships, and less success later in life.

A study conducted with 11 focus groups comprising 77 caregivers of children enrolled in Medicaid found that caregivers (mostly mothers) identified the following barriers to obtaining oral health care for their child: (1) difficulty finding a dentist, (2) difficulty scheduling appointments, (3) excessive wait times, (4) demeaning interactions with front office staff, and (5) discrimination because their child was enrolled in Medicaid.

While millions of children and adolescents benefit from routine preventive oral health care and remain caries-free, there are still millions who needlessly suffer from avoidable oral disease. As a result, tooth decay remains the single most common chronic disease of childhood, causing untold misery for children, adolescents, and their families. Without access to regular preventive services, oral health care for many children and adolescents is postponed until symptoms, such as
toothache and facial abscess, become so acute that care is sought in hospital emergency departments. This inappropriate use of emergency departments is both costly and ineffective, since few emergency departments deliver oral health services.

Solution

One proven strategy for reaching children and adolescents at high risk for oral disease is through school-based programs. These programs serve as models for improving access to oral health education, prevention, and treatment services for children and adolescents who are at high risk for oral disease. Making oral health services available at school enables students to more easily access a broad range of services in a safe, familiar environment, usually at minimal or no cost to students and their families.

SBHCs may both indirectly support academic outcomes by maintaining the physical and emotional health of students and directly improve academic outcomes by decreasing rates of early dismissals due to oral-health-related illnesses or appointments for oral health care. Decreasing early dismissal rates increases the time a student is available in the academic setting to learn. Regardless of their gender, race, age, and poverty status, students not enrolled in SBHCs are significantly more likely to be sent home during the school day for oral-health-related reasons than those enrolled in SBHCs.

Over 1,900 SBHCs across the nation provide a range of primary care, mental health, and oral health services. SBHCs are sponsored by a wide range of organizations, including community health centers, hospitals, and universities, among others, and they enjoy unmatched access to children and adolescents, because they serve them where they are—in schools. School-based oral health services can help make preventive services such as education, fluoride application, and dental sealants accessible to children and adolescents, particularly those from families with low incomes. School-based programs that are run in partnership with local safety net dental clinics and health centers have the potential to contribute to lasting health improvements, linking children and adolescents and their families to a resource for ongoing, comprehensive oral health care. Establishing a dental home early in a child’s life can effect primary prevention and early intervention before problems occur. In addition to preventive services, school-based services should include screening, referral, and case management to ensure the timely receipt of care from oral health professionals in the community. It is important for parents to be aware of what types of oral health care children need. Program staff should talk with parents, make information available to them at health fairs, and send information home with students.

Safety Net Dental Clinics

Safety net dental clinics strive to provide oral health care to children, adolescents, and their families regardless of ability to pay. As part of their mission, safety dental net clinics generally serve individuals enrolled in Medicaid; those without adequate dental insurance; or those who lack the cultural, cognitive, or linguistic skills necessary to negotiate the traditional health care system.
The National Assembly on School-Based Health Care has identified the following principles for SBHCs to use as benchmarks for the inclusion of comprehensive health services:20

• **Supports the School.** The SBHC is built upon mutual respect and collaboration between the school and SBHC health professionals, with the goal being children’s and adolescents’ health and educational success.

• **Responds to the Community.** The SBHC is developed and operates based on continual assessment of local community assets and needs.

• **Focuses on Students.** The SBHC involves students as responsible participants in their health; encourages parents and other family members to play a role; and is accessible, confidential, culturally sensitive, and developmentally appropriate.

• **Delivers Comprehensive Care.** An interdisciplinary team provides access to high-quality, comprehensive health services emphasizing prevention and early intervention.

• **Provides Health-Promotion Activities.** The SBHC takes advantage of its location to provide effective health-promotion activities for children and adolescents and the community.

• **Implements Effective Systems.** Administrative and clinical systems are designed to support effective delivery of health services incorporating accountability mechanisms and performance-improvement practices.

• **Provides Leadership in Child and Adolescent Health.** The SBHC model provides unique opportunities to increase expertise in child and adolescent health and to inform and influence policy and practice.

### Overview and History of School-Based Health Services

As of the 2007–2008 school year, there were over 1,900 school-based and school-linked health programs nationwide. Students in schools with SBHCs are predominantly from minority and ethnic populations that have historically experienced disparities in access to health care.17 SBHCs are located in geographically diverse communities, with the majority (57 percent) in urban communities. Twenty-seven percent of SBHCs are in rural schools.17

Although students attending schools where SBHCs are located are SBHCs’ primary target population, many SBHCs (64 percent) provide services to individuals other than enrolled students: students from other schools in the community (58 percent), students’ family members (42 percent), faculty and school personnel (42 percent), out-of-school adolescents (34 percent), and other community members (24 percent).17 Most SBHCs provide the basics of primary health care. These basics include vision and hearing screening, health assessment, laboratory services, immunizations, anticipatory guidance, acute illness care, and treatment.21 Just over 12 percent of SBHCs have an oral health professional on site.17

Most SBHCs bill third-party payers for health center visits, including Medicaid (81 percent), private insurance (59 percent), and the Children’s Health Insurance Program (68 percent). Thirty-eight percent bill students or families directly. SBHCs receive support from a
variety of revenue sources not related to billing, including state government (76 percent), private foundations (50 percent), sponsor organizations (49 percent), and school or school district personnel (46 percent).17

Example of a National Program

Caring for Kids Program

The Caring for Kids Program was a 3-year initiative (2001–2004) of the Robert Wood Johnson Foundation. Under the initiative, seven grantees were awarded funding to develop and expand oral health services within SBHCs.22

The grantees provided oral health care through 15 SBHCs that served 17 schools (8 elementary schools, 4 middle schools, 4 combined elementary and middle schools, and 1 high school). The grants were awarded to SBHCs on the East Coast (Newark, NJ, and New York, NY), in the Midwest (Detroit, MI, and Kansas City, MS), and in the South (Huntsville, AL, and San Antonio, TX). The SBHCs enrolled 10,223 students, 78 percent of the total student population at the 17 schools (13,087).

Services offered through this initiative included oral screening and examinations, X-rays, cleanings, dental sealants, fluoride treatments, fillings, extractions, crowns, and root canals. The programs were staffed primarily by dentists, dental hygienists, and dental assistants; dental hygiene students provided education, and outreach workers enrolled students in insurance programs and followed up with parents of students who needed restorative treatment.23

Thanks to continued community support, many programs remained sustainable even after the funding period had ended.

Lessons learned from the program include the following:

• Partnering with community organizations is critical.
• Recruiting problems, staff turnover, and center delays reduced productivity.
• Patient-care revenues can be generated through third-party billing.
• Integrating general health services and oral health services is a challenge.
• System development is key to maximizing efficiency.

Examples of State Programs

The Association of State and Territorial Dental Directors (ASTDD) has established a Best Practices Project, which promotes best practices for state, territorial, and community oral health programs. For the purposes of the Best Practice Project, a best practice approach is defined as a public health strategy that is supported by evidence for its impact and effectiveness. Evidence includes research, expert opinion, field lessons, and theoretical rationale.24

ASTDD has put forth review standards for five best practice criteria for states and communities to use as resource information when developing state, territorial, and community oral health programs or when developing evaluation strategies. These criteria are as follows:24

• Impact/Effectiveness. Program measures show benefits achieved and improved processes and systems.
• Efficiency. Demonstrations of efficiency in terms of costs vs. benefits and in terms of leveraging resources through collaboration with other programs.
with recommendations and guidelines promoted by authoritative sources, the state oral health plan, *Healthy People* oral health objectives, and/or the Surgeon General’s *A National Call to Action to Promote Oral Health*.

The following table highlights various school-based oral health prevention and treatment services.²⁴

### School-Based Oral Health Prevention and Treatment Services

**Arizona. The Neighborhood Outreach Action for Health (NOAH) Program: Integrated Medical and Dental Health in Primary Care**

NOAH provides an integrated general health and oral health care model for children who are uninsured and underinsured and their family members. NOAH operates two health centers; each houses a general health clinic and an oral health clinic. Oral health assessment, planning, and treatment are included in well-child care at NOAH’s school-based centers.

**Massachusetts. Oral Health Across the Commonwealth (OHAC) Mobile Dental Program**

OHAC has a collaborative relationship with Tufts University, School of Dental Medicine, Community Dental Program (which has a statewide coordinated system of dentists and dental hygienists), and Commonwealth Mobile Oral Health Services (a private oral health care provider). This partnership allows OHAC to deliver comprehensive oral health care to children at high risk for oral disease and to children and adults with special health care needs.

**New Hampshire. New Hampshire School-Based Preventive Dental Programs**

New Hampshire has 21 school-based preventive oral health programs serving 37,000 students in more than half the state’s elementary schools. Each program (administered by a sponsoring agency) hires a dental hygienist to deliver and/or coordinate screenings, prophylaxis, topical fluoride treatments, dental sealants, education, fluoride mouthrinses, referrals, case management, and data collection for surveillance.

**Texas. The Methodist Healthcare Ministries School Based Oral Health Program**

The school-based oral health program is a collaborative effort of Methodist Healthcare Ministries; University of Texas Health Science Center at San Antonio, School of Dental Hygiene and Dental School; and Texas Department of State Health Services, Oral Health Program. Services include classroom education, assessments, dental sealants, fluoride treatments, mouthguard fabrication, and emergency and restorative dental treatment.

**Vermont. Tooth Tutor Dental Access Program**

The Vermont Department of Health, Dental Health Services, administers the Tooth Tutor Dental Access Program. A dental hygienist works with each participating school to teach children the value of oral health care and to provide a dental home for children. Half of the elementary schools in the state participate in the program.
The following list highlights critical elements of programs for improving children’s and adolescents’ oral health through SBHCs.25

**Administration**

- Target schools with high rates of students who receive free and reduced-price meals to ensure that SBHCs are reaching children and adolescents at high risk for dental caries.
- Develop and use a business plan for managing SBHCs.

**Partnership and Collaboration**

- Provide education for parents, families, school staff, and the community on the importance of oral health and on SBHCs.
- Establish and maintain good relationships among oral health professionals; health officials; and the school system, including school boards, administrators, teachers, and health professionals (e.g., nurses, nurse practitioners, social workers).
- Develop a memorandum of understanding (MOU) between the school and the program that delineates responsibilities.
- Ensure that all parties (e.g., oral health professionals, the school system, the organization sponsoring the SBHC, the state oral health program, the oral health advisory council) are committed to the program’s goal(s) and objectives and to the fulfillment of the MOU.
- Collaborate with local resources (e.g., public health departments, federally qualified health center dental clinics) willing to take referrals from SBHCs.
- Identify program champions (e.g., individuals within the school system, oral health community, or lay community; family members; neighborhood coalition members) to advocate for and promote SBHCs.

**Financial and NonFinancial Support**

- Maximize use of community resources, such as dental schools and dental hygiene schools.
- Establish a method for billing Medicaid for services to serve those enrolled in or eligible for Medicaid and to help ensure program sustainability.
- Maximize oral health professionals’ ability to practice to the fullest extent allowed by the state practice act (e.g., state practice act that allows dental hygienists to determine the need for dental sealants).
- Encourage a community, organization, or state agency to adopt the program and provide support for it.

**Evaluation**

- Use appropriate data-collection methods.
- Develop and use a program guide for program planning, implementation, and evaluation.

**Conclusion**

Providing comprehensive oral health services through SBHCs is an important strategy for improving access to oral health education, prevention, and treatment services for children and adolescents who are at high risk for oral disease. Making these services available at school enables students to access a broad range of services in a safe, familiar environment, usually at little or no cost to students and their families.
References


**Resources**


Organizations

**American Academy of Pediatric Dentistry**  
211 East Chicago Avenue, Suite 1700  
Chicago, IL 60611-2663  
Telephone: (312) 337-2169  
Fax: (312) 337-6329  
Web site: http://www.aapd.org

**American Association for Community Dental Programs**  
635 West Seventh Street, Suite 309  
Cincinnati, OH 45203  
Telephone: (513) 621-0248  
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E-mail: info@aacdp.org  
Web site: http://www.aacdp.com

**American Association of Public Health Dentistry**  
3085 Stevenson Drive, #200  
Springfield, IL 62703  
Telephone: (217) 529-6941  
Fax: (217) 529-9120  
Web site: http://www.aaphd.org

**American Dental Association**  
211 East Chicago Avenue  
Chicago, IL 60611-2678  
Telephone: (312) 440-2500  
Fax: (312) 440-7494  
E-mail: info@ada.org  
Web site: http://www.ada.org

**American Dental Hygienists’ Association**  
444 North Michigan Avenue, Suite 3400  
Chicago, IL 60611  
Telephone: (312) 440-8900  
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Web site: http://www.adha.org

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Web site: http://www.astdd.org

**The Center for Health and Health Care in Schools**  
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2121 K Street, N.W., Suite 250  
Washington, DC 20037  
Telephone: (202) 466-3396  
Fax: (202) 466-3467  
E-mail: chhcs@gwu.edu  
Web site: http://www.healthinschools.org

**Centers for Disease Control and Prevention**  
Division of Adolescent and School Health  
4770 Buford Highway, N.E., Mailstop K-29  
Atlanta, GA 30341  
Telephone: (800) 232-4636  
E-mail: cdcinfo@cdc.gov  
Web site: http://www.cdc.gov/HealthyYouth
Center for Disease Control and Prevention
Division of Oral Health
4770 Buford Highway, N.E., Mailstop F-10
Atlanta, GA 30341-3717
Telephone: (770) 488-6054
E-mail: oralhealth@cdc.gov
Web site: http://www.cdc.gov/OralHealth

See also
National Oral Health Surveillance System [Web site]
http://www.cdc.gov/nohss

Oral Health Maps [Web site]
http://apps.nccd.cdc.gov/gisdoh/default.aspx

Synopses of State and Territorial Dental Public Health Programs [Web site]
http://apps.nccd.cdc.gov/synopses/index.asp

Coalition for Community Schools
c/o Institute for Educational Leadership
4455 Connecticut Avenue, N.W., Suite 310
Washington, DC 20008
Phone: (202) 822-8405, ext. 156
Fax: (202) 872-4050
Web site: http://www.communityschools.org

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Oral Health America
410 North Michigan Avenue, Suite 352
Chicago, IL 60611-4211
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Web site: http://www.oralhealthamerica.org

U.S. Census Bureau
4600 Silver Hill Road
Washington, DC 20233
Phone: (800) 877-8282
Web site: http://www.census.gov

See also
Population Estimates [Web site]
http://www.census.gov/popest/estbygeo.html

Small Area Income and Poverty Estimates, Model-Based
http://www.census.gov/did/www/saipe
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