Dental Public Health Activities & Practices

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SECTION I: PRACTICE OVERVIEW

Name of the Dental Public Health Activity:

The Methodist Healthcare Ministries School Based Oral Health Program

Public Health Functions:

Assurance – Population-based Interventions
Assurance – Building Linkages and Partnerships for Interventions
Assurance – Building State and Community Capacity for Interventions
Assurance – Access to Care and Health System Interventions

Healthy People 2010 Objectives:

7-7 Increase number of health care organizations that provide patient and family education
15-31 Increase schools requiring injury protection for students participating in physical activities
21-1 Reduce dental caries experience in children
21-2 Reduce untreated dental decay in children and adults
21-8 Increase sealants for 8 year-olds' first molars & 14 year-olds' first & second molars
21-10 Increase utilization of oral health system
21-12 Increase preventive dental services for low-income children and adolescents
21-13 Increase number of school based health centers with oral health component
27-2 Reduce use of tobacco by adolescents
27-4 Increase average age of first tobacco use by adolescents and young adults

State:	**Federal Region:**	**Key Words for Searches:**
Texas	Southwest Region VI	Oral health, dental decay, dental sealants, preventive dental services, fluoride treatment

Abstract:

The Methodist Healthcare Ministries (MHM) School Based Oral Health Program is a comprehensive model that focuses on oral disease prevention, treatment and education. The program is a collaborative effort of Methodist Healthcare Ministries (a faith-based, non-profit organization), University of Texas Health Science Center San Antonio (UTHSCSA) Department of Dental Hygiene and Dental School, and the Texas Department of State Health Services Oral Health Program. The Program's prevention component includes annual oral health assessments, dental sealants, fluoride treatments, mouthguard fabrication for sports, oral hygiene instruction, nutrition, tobacco cessation, and early intervention programs. The treatment component includes essential services such as emergency, diagnostic, preventive and restorative care. The education component provides classroom oral health education for children and increases awareness of good oral health among parents and teachers. At the start of the School Based Dental Program in 2002, the program was integrated into two existing MHM school based health centers located in two school districts of South Central Texas. MHM has built a fixed dental clinic in each of the two school based health centers. Patients qualify for reduced fees based on a sliding fee schedule. Dental hygiene faculty and students provide the preventive, treatment and educational services to children at the school based health centers in conjunction with the MHM dental staff (includes a dentist, a dental hygienist, and a dental assistant). More than 2,600 preventive services were provided in the 2007-2008 school year. Program evaluation and assessment showed that the percentage of children with untreated tooth decay decreased by 9%. The annual operating budget for the MHM School Based Health Center Dental Program is approximately $500,000. The program was established with an initial grant from the Robert Wood Johnson Foundation, but since then has been funded by Methodist Healthcare Ministries.

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SECTION II: PRACTICE DESCRIPTION

History of the Practice:

Methodist Healthcare Ministries of South Texas (MHM) is a faith-based, non-profit corporation created in 1995. MHM's mission is "to improve the health of those least served in the 72 counties of South Texas identified at the Southwest Texas Conference of The United Methodist Church."

Since 1996, MHM has been the largest non-public funding source for community healthcare for people in need residing in San Antonio and South Texas (include some of the poorest counties in the United States). MHM provides care through health-related programs and services that it owns and operates: primary care clinics, support services like counseling, case management and social services, parenting programs, community centers, and church-based community nursing programs. MHM also provides financial support to established organizations that are effectively meeting the needs of the underserved in local communities through their programs and services.

In February 2001, the Robert Wood Johnson (RWJ) Foundation awarded MHM a grant to start a comprehensive school based dental program for underserved communities in South Texas. The school based dental program was to be incorporated into two existing MHM school based health centers that were offering medical and social services. With renovation of the two health centers' space and installation of equipment, the first dental clinic was completed in September 2002 and the second dental clinic in November 2002. Dental staff was then hired. By January 2003, the school based dental program was in full operation.

Justification of the Practice:

Dental caries (tooth decay) is the most prevalent single disease affecting children and high-risk populations experience a disproportionate higher level of dental disease. Young school children from lower income families in Texas have more dental caries, fewer dental sealants, and less dental treatment compared to their national peers. In 2000, young school children in Texas did not meet the national Healthy People objectives for oral health (even though older Texas school children/adolescents from lower income families met national objectives).

Oral health disparities are most evident in population groups residing in South Texas. These groups include rural residents, low-income children and adults, minority individuals, migrant farm workers, and homeless individuals. They are least likely to access needed dental care services. The Federal Office of Rural Health Policy of the Health Resources and Services Administration has identified these barriers to oral health care, particularly in rural areas:

- An overall lack of dentists;
- A limited number of area dentists willing to accept Medicaid, Children's Health Insurance Program and/or sliding fee payments;
- The reluctance of dentists to accept managed care plan payments for dental services;
- Lack of fluoridated water;
- Poverty and cost of services;
- Cultural influences that do not promote regular preventive practices;
- A low level of dental health education;
- Lack of transportation; and
- Lack of a coordinated screening and referral network.

Access to dental care problems for rural residents in South Texas are compounded by geographic isolation and the difficulty of recruiting and retaining dentists in their communities.

School based health programs offer an effective way to reach and serve children especially in rural areas. Children and parents will miss fewer days of school and work when dental services are provided in school settings. Two to three times more third graders have dental sealants when their schools have a dental sealant program.

Inputs, Activities, Outputs and Outcomes of the Practice:

The Methodist Healthcare Ministries School Based Oral Health Program is a comprehensive model that focuses on oral disease prevention, treatment and education.

Program Purpose, Goal and Objectives

The purpose of MHM School Based Oral Health Program is to develop a reproducible model that will improve the oral health of school-aged children in underserved areas throughout the 72 county service area of MHM.

The goal is to improve oral health of school-aged children through a school based oral health program integrated into two existing school based health centers.

The program objectives are based on Healthy People 2010 oral health objectives:

1. Decrease the percentage of children needing urgent dental care.
2. Increase the percentage of children with annual dental visits.
3. Decrease the number of children with untreated tooth decay.
4. Increase the percentage of children receiving preventive dental services.
5. Improve oral health knowledge, attitudes and behaviors in children.
6. Improve oral health knowledge of school personnel.

Partnerships and Collaborations

The program is a collaborative effort of:

- Methodist Healthcare Ministries,
- University of Texas Health Science Center San Antonio (UTHSCSA), Department of Dental Hygiene and Dental School, and
- The Texas Department of State Health Services, Oral Health Program.

The first three years (2002-2004) of the program were partially funded through a grant from the Robert Wood Johnson Foundation. After the RWJ grant, the MHM continues to fund and operate the program.

Program Staff

The staff of the MHM School Based Oral Health Program has grown to include one full-time dentist, one full-time dental hygienist, one full-time dental assistant, and one administrative staff. In addition, dental hygiene faculty and students provide clinical, preventive, treatment and educational services to children at the two school based health centers.

Program Facilities

The School Based Dental Program was integrated into two existing MHM School Based Health Centers in 2002. The MHM school based health centers are located in two school districts of South Central Texas:

- Marion Independent School District (ISD) – has a total enrollment of ~1,500 children.
- Schertz Cibolo Universal City ISD – has a total enrollment of ~10,000 children.

The school based health centers have a comprehensive approach to total health care for students which includes medical, dental, behavioral, and social services. For the School Based Dental Program, two fixed dental clinics have been built, one in each health center at the Marion and Schertz elementary schools. Each dental clinic had one operatory.

Program Services

The School Based Oral Health Program includes prevention, treatment and education components. The program provides a variety of services for each component.

(1) Prevention Component

This program component includes the following activities.

- Annual oral examinations, dental prophylaxis (cleaning), dental sealants, professionally applied fluoride treatments, and oral hygiene instruction are provided in the dental clinic setting at both school based health centers.
- A dental sealant project (a population-focused preventive measure) implemented at both school sites.
- A weekly fluoride mouth rinse project was originally implemented in the Marion school district (its community water supply is below optimal fluoride level). Fluoride varnish applications (deliver twice a year) have replaced the fluoride mouthrinse program in both sites.
- A mouthguard fabrication project is in place to provide students the protection from sports related injuries.
- Annual oral health assessments (oral screening surveys of children in grades K, 2, 3, 7 and 8) are conducted to determine oral health status and needs.

The sealant project was initially provided to 2nd and 7th grade students. The project has expanded to offering oral screenings for all children in grades from Pre-kindergarten (PK) through 8th grade and delivering dental sealants to children in 2nd, 3rd, 7th and 8th grades. A dentist assesses each child and a dental hygienist applies the dental sealants to the permanent molars. During the assessments of 3rd and 8th graders, sealant retention is evaluated.

In the first year of the mouthguard project, 80 mouthguards were fabricated for student athletes at the UTHSCSA Dental School. In the second year, 94 mouthguards were provided for athletes in grades 7th-12th with a signed permission form in the Marion school district. School staff (nurses, social workers and administrative assistants), dental students, dental hygiene students, and a private dentist support the mouthguard project.

(2) Treatment Component

This program component provides primary oral health services such as emergency, diagnostic, preventive, and restorative care. The scope of clinical services includes restorative procedures (e.g., fillings), endodontics (e.g., root canal therapy), oral surgery (e.g., extractions), limited orthodontics, and limited prosthodontics (e.g., dental crowns/appliances). Patients can qualify for reduced fees based on a sliding fee schedule.

(3) The Education Component

This program component provides classroom education to students and in-service education for school personnel. Education topics include oral health and hygiene, nutrition, tobacco cessation and mouthguards. Classroom oral health education is provided by the program's staff dental hygienist and UTHSCSA dental hygiene students for seven elementary schools. The dental hygiene students are given instruction, tools/materials, and a curriculum. To help reach the older students, presentations are also given to athletes in middle and high schools and include information on mouthguards and tobacco cessation.

Support of School Administration and Personnel

Support from school administration and personnel (the superintendent, school nurses, teachers, coaches, and administrative staff) at each school is vital to the operation of the School Based Oral Health Program. For example, school nurses help organize program events such as dental screenings and classroom oral health education; coaches encourage student athletes to participate in the mouthguard fabrication project; and school based social workers assist with referrals of students who have behavioral management issues or need special care at a community health center or in a private dental practice.

Program Evaluation

Program evaluation is set up to determine the progress of achieving the six program objectives. Evaluation data is collected from:

- The annual assessment (oral screenings) of children in grades K, 2, 3, 7 and 8;

- An annual survey questionnaire completed by parents of children in grades K, 3 and 8);
- Records of children receiving oral hygiene instruction, topical fluoride, and dental sealants;
- Pre and post tests of children who received classroom oral health education; and
- Pre and post tests of school personnel who received in-service education.

The evaluation of the Program's treatment component is accomplished by conducting annual oral assessment surveys of children (each child receives an oral health screening and his/her parent completes a questionnaire). The annual survey is based on the "Basic Screening Survey" protocol developed by the Association of State Territorial Dental Directors and the "Make Your Smile Count" Texas Dental Health Survey developed and implemented by the UTHSCSA and the Texas Department of Health (now the Texas Department of State Health Services). Data gathered evaluates untreated decay, children needing urgent dental care, and children with annual dental visits (Program Objectives 1, 2 & 3).

Evaluation of the prevention component includes an assessment of children receiving preventive dental services (Program Objective 4). A computerized database has been set up to track the number of children who received preventive dental services and the number of oral hygiene instructions, dental prophylaxes, fluoride applications and sealants provided.

The education component is evaluated with pre and post tests to determine improved oral health knowledge, attitudes and behaviors in children and school personnel (Program Objectives 5 & 6).

Program Outputs

Program outputs include the following:

- Annually, screenings and fluoride varnish (applied twice a year) are provided free of charge to more than 1,200 students.
- Annually, dental sealants are provided free of charge to approximately 500 students in grades 2^{nd}, 3^{rd}, 7^{th}, and 8^{th}.
- Annually, approximately 90 mouthguards are fabricated for athletes.
- Annually, on average, 1,500 patient visits are completed at the fixed dental clinics, resulting in approximately $52,000 in billable dental care.
- Annually, more than $48,000 in free preventive and restorative dental services has been provided to students in the two school districts.
- Annually, approximately 1,500 students from seven elementary schools participate in the classroom oral health education.

Program Outcomes

For the first three years (2002-2004) of the MHM School Based Oral Health Program, in-depth evaluation analysis was made to determine the how well the program has achieved its objectives. In comparing 2002 to 2004, the MHM School Based Oral Health Program demonstrated that:

- Percentage of children with no dental problems increased by 13% (70% to 83%).
- Percentage of children needing urgent dental care remained relatively the same (3%-5%).
- Percentage of children requiring early dental care decreased by 15% (27% to 12%).
- Percentage of children with untreated tooth decay decreased by 9% (27% to 18%)
- Percentage of children with annual dental visits (reported by parents) increased slightly by 2% (69% to 71%).
- Number of preventive dental services significantly increased (178 to 2,420 services).
- Classroom education and in-service education that started in 2003 showed improved knowledge among the children in grades K-3 and among the teachers (pre and post test scores improved 3-17%)

Evaluation data and analysis since 2004 are not available at this time.

The comprehensive school-based program (which provides dental sealants, fluoride varnish applications, mouthguard fabrication, restorative and other dental treatment services, and oral health education) has demonstrated improvement related to its program objectives.

Budget Estimates and Formulas of the Practice:

The first three years (2002-2004) of the program were partially funded through a grant from the Robert Wood Johnson Foundation. Start up costs, partially funded by the RWJ grant, set up two dental operatories for clinical services (an operatory in each of the two school based health centers). The Methodist Healthcare Ministries has continued to fund and operate the program into its current 9th year.

In recent years, the annual operating budget for the MHM School Based Health Center Dental Program is approximately $500,000. The 2009 budget for the school based dental program is estimated at $250,000 for operating expenses and $210,000 for salaries and benefits. An additional $120,000 has been budgeted for capital items in 2009 (to equip an additional dental operatory and purchase a new digital x-ray unit). Average cost per dental visit for the program was estimated to be $144.00.

Lessons Learned and/or Plans for Improvement:

- A good marketing strategy would improve the visibility of the MHM School Based Oral Health Program and its services to the communities. Most of the program's marketing has been by word of mouth.
- Sending permission forms (e.g., for students to participate in the annual oral health assessment and dental sealant project) with school registration packets at the beginning of each school year will generate a higher return rate.
- At the start of the program, clinical visits were only about 50% of the projected goal. This was partly due to not taking into account that it takes time to inform parents and families of the new program and to work with them to understand and value the services offered. Marketing and promotion of the program is now an important focus. The number of clinical visits has increased since the program started to be advertised through flyers and school newspaper articles.
- The program providers plan to become Medicaid providers in order to further increase patient load and demand for services.
- Parents' apathy towards dental care is still a problem in both school districts; hopefully, with oral health education, added knowledge and understanding of the importance and utilization of regular dental care will change attitudes and behaviors.
- Getting middle school students to return signed consent forms is a challenge.

Available Information Resources:

The MHM School Based Oral Health Program uses the Association of State and Territorial Dental Directors' *Basic Screening Survey Tool* as the protocol for the annual oral health assessment screenings and to guide data collection in the dental sealant project (electronic records are being integrated into the school based health center's system in 2009). The *ASTDD Basic Screening Survey Tool* contains one manual which must be downloaded from the ASTDD Website; one video and three laminated color assistance cards for training (including one for pre-school children, one for school age children, and one for adults) which can be ordered from the ASTDD Website (http://www.astdd.org/index.php?template=datacollect.html).

SECTION III: PRACTICE EVALUATION INFORMATION

Impact/Effectiveness

How has the practice demonstrated impact, applicability, and benefits to the oral health care and well-being of certain populations or communities (i.e., reference scientific evidence, outcomes of the practice and/or evaluation results)?

The MHM School Based Oral Health Program has been able to demonstrate achievements related to its program objectives: decreasing the number of children with untreated tooth decay, increasing the percentage of children receiving preventive dental services, and improving oral health knowledge, attitudes and behaviors in children. Most notable is the decrease by 9% in the proportion of children with untreated tooth decay in the two school districts served during the first three years of the program.

Efficiency

How has the practice demonstrated cost and resource efficiency where expenses are appropriate to benefits? How has the practice demonstrated realistic and reasonable staffing and time requirements? Provide unit cost analysis or cost-benefit analysis if appropriate.

As a non-profit organization, MHM receives discounts (reduced costs) for supplies from dental supply companies. Toothbrushes are also discounted since the staff dental hygienist is affiliated with an academic institution (UTHSCSA).

The program leverages off of the partners' resources. For example, dental hygiene students complete their rotations in the MHM fixed dental clinics and teach oral health in the classrooms, which reduce staffing costs.

Demonstrated Sustainability

How has the practice showed sustainable benefits and/or how has the practice been sustainable within populations/communities and between states/territories? What mechanisms have been built into the practice to assure sustainability?

The Methodist Healthcare Ministries (MHM) School Based Oral Health Program is now in its 9th year of operation. The program has been sustainable because it is part of the MHM non-profit division and is part of the large MHM healthcare system.

Collaboration/Integration

How has the practice built effective partnerships/collaborations among various organizations and integrated oral health with other health projects and issues? What are the traditional, non-traditional, public and private partnerships/collaborations established by the practice for integration, effectiveness, efficiency and sustainability?

The MHM School Based Oral Health Program has been established and maintained through collaboration with the Methodist Healthcare Ministries, the University of Texas Health Science Center Dental Hygiene and Dental Programs, and Texas Department of State Health Services Oral Health Program. A Memorandum of Understanding was established with each school district served.

Objectives/Rationale

How has the practice addressed HP 2010 objectives, met the National Call to Action to Promote Oral Health, and/or built basic infrastructure and capacity for state/territorial/community oral health programs?

The MHM School Based Oral Health Program objectives are based on the Healthy People 2010 objectives to improve children's oral health. The program objectives aim to reduce caries experience, reduce untreated tooth decay, increase utilization of dental services, increase dental sealants, increase preventive services for low-income children, reduce tobacco use, increase patient and family health education, and increase number of school based health centers with an oral health component.

As stated by Olapeju Simoyan and Victor Badner in *Implementing a School-Based Dental Health Program: The Montefiore Model*:[1] "School based health centers serve as the first line of defense for children's health, bringing health services to the students. The students served are generally poor, uninsured, underserved and at a higher health risk than their more affluent peers. School dental clinics provide onsite dental services during school hours, relieving parents of the necessity to take time off work, and reducing the number of missed class hours." Many of the barriers to receiving oral health care services can be reduced by implementation of a comprehensive school based oral health program.

Extent of Use Among States

Describe the extent of the practice or aspects of the practice used in other states.

The 2009 Synopses of State and Territorial Programs showed the number of states that reported having the following programs:

- 45 states having a oral health education and promotion program
- 37 states having a dental screening program
- 39 states having a sealant program
- 35 states having a fluoride mouthrinse program
- 25 states having a fluoride varnish program
- 5 states having a mouthguard/injury prevention program
- 33 states having an access to care program

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[1]Simoyan O, Badner V. Implementing a school-based dental health program: The Montefiore model. J School Health 2002;72(6):262-3.