Wisconsin Promising Practices Program

CSM Smart Smiles

Program Summary

February 2010

WISCONSIN PROMISING PRACTICES

PROGRAM SUMMARY

CSM SMART SMILES

Elizabeth Nelson
Smart Smiles Coordinator
414-383-3220 clinic-based office
enelson1@columbia-stmarys.org
1730 S. 13th Street, Milwaukee 53204

February 2010

Table of Contents

Preface

Wisconsin Promising Practices Program

Program Background. The Wisconsin Promising Practices (WPP) program is one component of the What Works: Reducing Health Disparities in Wisconsin Communities project. "What Works" is a three-year, collaborative project between the Wisconsin Division of Public Health, Minority Health Program and the University of Wisconsin Population Health Institute, funded by the Wisconsin Partnership Program. The overarching goal of the What Works project is to identify and disseminate both evidence-based practices from the research literature and promising practices being implemented in Wisconsin communities that have the potential to improve minority health and reduce racial and ethnic health disparities in our state. This Program Summary provides documentation of a promising Wisconsin program.

Conceptual Framework. We have defined as "**promising**," a practice, intervention or program that:

1. Focuses on improving health in a racial or ethnic minority population;
2. Produces at least one positive outcome that can be demonstrated with systematically collected quantitative and/or qualitative data;
3. Is based to some degree on proven practices from the research literature and/or the experience of community practitioners and leaders; and
4. Is well suited to its context in terms of language, belief systems and other cultural factors.

A promising practice, by our definition, may be an adaptation of an evidence-based practice to a setting or population that differs from the one in which it was originally developed, or a practice which is developed "from the ground up" to fit a particular context.

As shown below, the WPP program distinguishes promising practices from both evidence-based practices and best practices in several ways. The expectations of a program's ability to demonstrate its effectiveness in a scientifically sound manner are less rigorous for promising practices than for evidence-based or best practices, and promising practices do not need to demonstrate that they are replicable in multiple settings. Nonetheless, documenting and sharing information about promising local strategies is an important step in building the evidence base for effective public health interventions.

Wisconsin Promising Practices Program
Conceptual Framework for Evidence Categories

EVIDENCE-BASED PRACTICES (EBP)	BEST PRACTICES	PROMISING PRACTICES
Criteria for Evidence of Effectiveness		
Effectiveness has been confirmed by systematic research or expert consensus. EBP models tend to regard the results of systematic reviews of controlled experimental studies as the highest level of evidence.	Similar evidence require-ments as for EBPs, but may rely more heavily on expert consensus rather than reviews of controlled experimental studies than do some EBP models.	Produces at least one positive outcome that can be demonstrated with systematically collected quantitative and/or qualitative data.
Expert review of effectiveness required		
Yes	Yes	No
Proven to be replicable in multiple settings		
Yes	Yes	No
Suitability to a particular context		
Not a consideration	Not a consideration	Highly valued

Program Summary Contents. The information included in this Program Summary is intended to provide a broad understanding of how the program has been planned, implemented and evaluated to date. Included in each Program Summary is information about the theoretical and other frameworks which inform the program's design, a detailed description of how the program has been implemented, an overview of the resources invested in the program, and a discussion of program evaluation methods and key outcomes. The WPP program also recognizes that understanding the local context in which an intervention has been implemented is critical to making an informed decision about whether it might be appropriate for another community or setting. Therefore, each Program Summary also includes reflections by program staff members on the political, organizational and other contextual factors that have contributed to the program's success.

Purpose of the Program Summaries. A major objective of the Wisconsin Promising Practices program is to recognize community voices and provide them a systematic means for sharing stories about their own experiences with successful interventions. We hope that by providing a forum for community-based organizations to document and share their promising practices, others might learn from them and consider whether aspects of these programs may be appropriate to implement in their own communities. However, publication of these Program Summaries does not constitute an endorsement by the Wisconsin Division of Public Health, the University of Wisconsin Population Health Institute or the Wisconsin Partnership Fund of any programs or practices described herein.

For more information about the Wisconsin Promising Practices program or the What Works project, please visit our website at http://dhs.wisconsin.gov/health/MinorityHealth/prompractices/index.htm

Executive Summary

The Smart Smiles Program, sponsored by Columbia St. Mary's (CSM), is implemented by the Madre Angela Dental Clinic (MADC) to provide school-based, comprehensive preventive and maintenance oral health care in a sustainable model that improves the health of children. The model is based on CSM's mission-driven goal: to improve the health of the community, with a special concern for those who are vulnerable.

Milwaukee has the nation's fourth highest rate of child poverty. Access to dental care is hard for the city's impoverished children, more than 60 percent of whom have dental disease. Smart Smiles responds by selecting schools based on eligibility for free and reduced school lunch, targeting children in kindergarten through grade eight, and serving many minority children: 86.7 percent African American; 7.4 percent Hispanic.

In Smart Smiles' clinical model, children assemble in a space designated by the school. In this setting, a dentist assesses each child's oral health. An oral health team (a logistics coordinator, a dental hygienist and two dental assistants) provides services based on the dentist's assessment. Taking advantage of the window of opportunity offered by the school environment, the team provides oral health instruction, dental prophylaxis, debridement as needed, sealants, and fluoride treatment.

Smart Smiles has a billing relationship with Southeastern Dental Association (delivery provider to Milwaukee Health Maintenance Organizations that serve BadgerCare enrollees) and BadgerCare revenue supports the team's direct service expenses for the children it covers. However, it supports neither ancillary needs, such as logistics coordination and billing expenses, nor services to uninsured children. Thus billing revenue must be supplemented by foundation and donor support, annual along with state funding secured from Seal-A-Smile, and state grants for children's oral health. To remain viable, Smart Smiles adds treatment teams only when funding is available to support the additional costs.

The largest in-school oral health program in Wisconsin, Smart Smiles has had high marks from principals, school nurses, community health leaders, donors and other stakeholders—and support from dentists and insurance companies. Further, Seal-A-Smile data, used to evaluate outcomes, have indicated that Smart Smiles efficiently and effectively ensures access to dental care for impoverished children. In fact, in 2007-08, Smart Smiles screened 2,426 children, averting about 3,365 cavities among those children.

SMART SMILES
LOGIC MODEL

Inputs ➔ **Outputs** ➔ **Outcomes – Impact**

	Activities ➔	**Participation** ➔	**Short Term**	➔ **Medium Term**	➔ **Long Term**
What we invest	*What we do*	*Who we reach*	*What the short-term results are*	*What the medium-term results are*	*What the Ultimate Impact is*
Paid Staff Volunteers Equipment and Supplies Time Schools	Signed Consent Forms Assessment by Dentist Preventive Instruction Dental Hygiene Sealants Fluoride Referral to HMO or MADC dentists, as appropriate	Schools and communities that Smart Smiles serves. Low-income children who receive preventive oral health care services. Parents of participating children.	Participants' knowledge of oral health increases. Healthy teeth are protected from decay by fluoride and dental sealants. Participants are given the opportunity to receive restorative care in a dental home through the referral process. Participants' parents are assisted in accessing dental care for their children. Participants are motivated to improve their oral health through professional and home care.	Participants become independent in preventive oral health care and successfully maintain healthy oral status. (Longitudinal data collection is currently in process.) Urgent and routine dental care needs are identified, and referrals made to a dental home for treatment. High-risk children's teeth are protected from decay, and expensive dental procedures are averted. (Estimated cavities averted data are evaluated annually.)	Participants establish a dental home at a dental office of their choosing and become lifelong consumers of preventive and restorative dental care. Smart Smiles contributes to a healthier community in the future.

Intervention Context

Mission. Smart Smiles is a program of the Madre Angela Dental Clinic (MADC), which is sponsored by Columbia St. Mary's (CSM) Health System. CSM's mission is to improve the health of the community, with a special concern *for those who are vulnerable*. It is this emphasis on vulnerable people that draws MADC to focus on its school-based oral health care program.

Target Population. Targeting children who come from impoverished families, Smart Smiles selects the schools it serves based on eligibility for free and reduced price school lunches. Smart Smiles chooses those schools that have the highest level of school lunch eligibility because the lunch program is a key indicator of poverty. Smart Smiles serves many minority children: 86.7 percent African American, 7.4 percent Hispanic children.

Prevalence Data. As a school-based oral health program that targets impoverished children, Smart Smiles acknowledges that major factors affecting the vulnerability of children in Milwaukee include socio-economic status and access to oral health care.

The Surgeon General's report[1] on oral health indicated that "the most advanced oral health disease is found primarily among children living in poverty," and according to the Milwaukee Journal Sentinel[2], 33% of children in Milwaukee live in poverty. Not surprisingly, when MADC staff screened Milwaukee school children, they found that more than 60% had untreated dental decay, which one might think is caused primarily by insurance eligibility problems. However, because of the high levels of poverty in Milwaukee, most children have insurance coverage of some kind. Between those who have insurance and those who have BadgerCare coverage, more than 70 percent of children in Milwaukee schools have some kind of coverage. Unfortunately, that coverage seldom leads to receiving oral health care.

Needs Assessment. The children's oral healthcare problems are usually related to two factors: dentist accessibility and poverty-related barriers. Reimbursement levels offered by the state and its provider HMOs do not attract dentists to serving Medical Assistance and BadgerCare families. In fact, fewer than half the dentists in Milwaukee regularly participate in the Medical Assistance program that is the basis for BadgerCare. As a result, it is difficult for families to find a participating dentist, even to treat urgent and restorative care. Preventive oral health care is even more difficult to access.

Poverty-related barriers have an impact on accessibility, as well. Many impoverished people find it difficult to respond to preventive health needs of any kind. They have the crisis orientation that is frequently found in people who are economically vulnerable. Further, the demands of working several jobs at difficult hours often prevent parents from finding dentists or being able to schedule a time for appointments. Additionally, barriers of transportation and child care needs make regular appointments difficult to keep.

Low-income families in Milwaukee face both individual and systemic barriers to accessing dental care. The result for children from poor families in Milwaukee is that few receive dental care outside of school settings.

Program Framework and Rationale

Program Development. MADC was created in February of 2000 through grants from Ascension Health System and Volunteers in Health Care. Originally, the need for urgent and restorative care for adults was so significant that adult care was the focus of service in the first year.

When MADC applied for a Robert Wood Johnson (RWJ) Foundation grant in 2001, a key element of the grant was the diverse service that could be offered to the community. Serving the preventive health needs of children was one focus of the grant. Originally, the program was a sealant-only program that consisted of a dental hygienist applying sealants in central city schools. The program was supported by the RWJ grant and eventually expanded through other, local foundation grants. Over the years, the program was able to serve more schools as grant funding became available.

In 2006, MADC changed its model of care largely because MADC's clinic manager, a dental hygienist, believed that impoverished children should have not only sealants, but also the same level of service other children receive at dental offices. Thus, MADC initiated a system of dental screening by MADC staff dentists, followed by a treatment program. As a result, MADC's in-school services began to include referrals for ongoing dental treatment through established providers. Also, MADC staff registered as providers with Southeastern Dental Association (SEDA) for the beginning of the academic year and established a process for gaining revenue for the services the program provides to insured children.[*]

Behavioral Theory. Smart Smiles' school-based approach is based on theories related to the following: the crisis-centered lifestyle of poverty, the window-of-opportunity approach and the management of childhood anxiety.

Juliette Martin-Thomas, Ph.D., described the concept of the crisis-centered lifestyle of poverty by pointing out that demands on the time, energy and attention of people in poverty are so significant that all energy goes to maintaining some form of stability. She explained that faced with the poverty of economic and social resources, people respond primarily to crises. Issues related to preventive care or health maintenance do not rise to the crisis level and are, therefore, often ignored. Thus, to provide preventive care to impoverished children, health providers must make access to the care as easy as possible.

The Smart Smiles approach responds to this concept by providing school-based care. Parents do not have to take time off of work, access transportation or get childcare in order to have their child receive preventive oral health. Consent forms are as simple as

[*] Editor's Note: While the Dental Practice Act allows dental hygienists to perform their entire scope of prevention based services in school settings without the oversight of a dentist, Smart Smiles utilizes a dentist for the initial screening of students. This decision was made to enable the program to bill directly to the main HMO with which they work, but also because program staff believe a dentist's referral is valuable in helping students to access restorative care, and helps to build bridges between the school-based program and the wider dental community.

possible to complete, and are sent to families at the beginning of the school year when the families are accustomed to signing many forms. Usually, the parents readily sign the forms because they tend to trust providers that the school system trusts.

The window-of-opportunity approach is an approach that has been taken by many clinics, such as St. Ben's Clinic for the Homeless, also a CSM-sponsored clinic. The window-of-opportunity approach acknowledges that a health provider may have few opportunities to provide care to impoverished people; therefore, as much as possible must be done during each window of opportunity for care.

Smart Smiles employs the window-of-opportunity approach by having the visiting dentist do a thorough assessment of each child's oral health and write a prescription for preventive care that can be delivered within the following few weeks by a dental hygienist and dental assistants team. This Smart Smiles process provides preventive services—including oral prophylaxis, fluoride treatment and dental sealants—thus using the window of opportunity to bring the child to the best level of oral health care.

Early on, Smart Smiles' staff recognized that new experiences can be the source of anxiety for many children, and the children may experience anxiety because they have had little or no oral care experience. The Smart Smiles program responds to children's anxiety in three ways. First, Smart Smiles provides care in the child's school, using the security of a known environment to help ease anxiety. Second, the child is eased into the situation. For example, the initial screening happens with the child sitting on a regular school chair, being examined by a dentist chosen because of experience with children. Several weeks later, when the team of hygienists and dental assistants returns to the school, noting that their classmates are receiving preventive dental health services without pain or incident seems to reassure anxious students. Third, the Smart Smiles staff teams are culturally diverse; the teams include African American and Hispanic staff who mirror the community being served. This diversity seems to help students feel comfortable with the situation. As a result of these three efforts, the staff has found that few children experience anxiety when they receive Smart Smiles care.

Research. Milwaukee ranks seventh nationally in poverty, with 25% of its residents considered poor, according to the *Journal Sentinel* online.[1] Sadly, children bear a disproportionate burden of poverty in Milwaukee. In Milwaukee, 33% of children live in poverty.[2] Is it then surprising that poor children in Milwaukee suffer from serious oral health disparities and the need for preventive oral health services? "Oral health is essential to general health and well-being at every stage of life," as stated in *A National Call to Action to Promote Oral Health* from the Office of the U.S. Surgeon General.[3] Pointing out that almost all oral diseases are largely preventable, the U.S. Department of Health and Human Services' Coordinating Center for Health Promotion says that "For children, cavities are a common problem that begins at an early age. Tooth decay affects more than one-fourth of U.S. children aged 2–5 and half of those aged 12–15. Low-income children are hardest hit: about two-thirds of those aged 12–19 have had decay. Untreated cavities can cause pain, dysfunction, absence from school, and poor appearance—problems that can greatly affect a child's quality of life."[4]

Every day, teachers in Milwaukee witness those problems as poor children who come to their classrooms suffer from toothaches and/or lack of sleep because they have been awake at night, suffering from a toothache. Educating children in this condition is nearly impossible.

The seriousness of the problem became shockingly evident about two years ago when the Washington Post reported that twelve-year-old Deamonte Driver died from a "toothache," an untreated oral abscess that spread to his brain. His mother had been unable to find a Medicaid dentist. By the time Deamonte's throbbing toothache got any attention, it was too late.[5] *ABC News* sought to unravel the reasons for Deamonte's delay in treatment and found "Driver was entitled to dental coverage under Medicaid, but his struggling mother couldn't find a dentist to treat him even with the help of a lawyer."[6]

In contrast, Tyler is an eighth grade student in Milwaukee who was trying hard to manage his diabetes—with little success. In October 2006, Tyler participated in MADC's school-based oral health program, sponsored by CSM. He received dental prophylaxis following a dentist's evaluation. About two weeks later, Tyler approached the MADC dental hygienist in the school hallway and told her, "I try hard to control my blood sugar—talking to the school nurse, watching what I eat and using insulin regularly, but since you cleaned my teeth, my gums are healthier, and my blood sugars are much more under control."

Deamonte and Tyler's experiences are supported by *The Resource Library Fact Sheet for Children's Oral Health*[7] which has found:

- Tooth decay is one of the most common diseases of childhood – five times as common as asthma and seven times as common as hay fever.
- The daily reality for children with untreated oral disease is often persistent pain, inability to eat comfortably or chew well, embarrassment at discolored and damaged teeth, and distraction from play and learning.
- More than 51 million school hours are lost each year because of dental-related illness.

Smart Smiles responds with school-based preventive and oral health services, specifically addressing children in Milwaukee area schools who have barriers to dental care access because they are from impoverished families. Like Deamonte and Tyler, the targeted children desperately need the dental cleaning, fluoride treatments, dental sealants, preventive education and ongoing care made accessible to them through Smart Smiles.

Community Leader Input. School principals are unanimous in their appreciation of the Smart Smiles program. Many purposely allocate the necessary resources in their budgets to ensure a parent advocate or school nurse is available to help facilitate the program. In fact, a school nurse assists Smart Smiles at most schools.

School nurses are also outspoken in their support of Smart Smiles. Stephanie Rasmussen, R.N., of O.W. Holmes School in Milwaukee says, "School nurses in low-income schools are among the program's staunchest supporters. Each day in our offices we see the health

problems children suffer from as a direct result of lack of preventive dental care. Smart Smiles gives us a way to improve oral health for today and for the future."

Dr. Warren LeMay, Chief Oral Health Officer for the State of Wisconsin, recognizes the importance of the Smart Smiles model of care: "I strongly support the Smart Smiles program as an innovative oral disease prevention program. Tooth decay, if left untreated, continues to develop and results in expensive treatment procedures. Therefore, it is important to focus on prevention of the disease. School-based dental sealant programs are an effective strategy to prevent tooth decay. The Smart Smiles program can target vulnerable populations that are less likely to receive private dental care and reduce the prevalence of tooth decay. School-based dental sealant programs can also reduce disparities in oral health status for children."

Program Implementation

General Description. As described in the Program Development section, Smart Smiles began with one dental hygienist who provided sealants to children in a small number of schools. The shift that occurred in 2006 not only expanded the reach of the program and reimbursement strategies, but also changed the method of service delivery. The expansion of the team was accompanied by establishing the position of a Smart Smiles supervisor. This position was important since it allowed for more careful consideration of service delivery strategies and modification to meet service and efficiency needs. The service delivery schedule has been refined over the years.

One important aspect of the program is the necessity for partnership with the selected schools. Smart Smiles currently serves the children in 24 schools in Milwaukee, but more schools are on the waiting list. Smart Smiles increases the number of schools its serves as funding allows. The program usually returns to the same schools each year in an effort to maintain an oral health culture and maintain ongoing services for the children. Schools are required to provide adequate space, 110 volt with 15 amp breaker electrical service, and staff assistance.

Step-by-Step Implementation Process. The program begins with the Smart Smiles supervisor working in liaison with the school principal to have "Consent for Treatment" forms signed. A minimum number of signed consent forms are required to schedule the oral health screening. During the screening, children sit in regular school chairs and the dentist assesses each child's oral health condition. A prescription for services is thereby created. Each child also receives fluoride treatment at that time.

Several weeks later, the treatment team returns to provide services to each child who has a signed consent form and dentist's prescription. Smart Smiles moves portable dental equipment into the designated space in the school, creating a temporary dental clinic.

On most occasions, two Smart Smiles teams are present at the same school. Each team consists of a hygienist and two dental assistants. With a staffing strategy that uses the skills of each team member in the most effective way, school staff or Smart Smiles volunteers escort the children with signed consent forms from their classrooms to the treatment area. The dental assistant provides oral health instruction and helps the children to understand the services they will receive. Since a dental hygienist has already reviewed the consent form and health history of each child, the hygienist next provides oral prophylaxis and dental sealants. Later, each child receives a second fluoride treatment.

The length of time the treatment team remains at an individual school varies from one to four weeks, depending on the number of children with signed consent forms and the extent of their oral health needs. One hygienist can usually provide services for up to ten children in a day. Those needing complex prophylaxis (cleanings) and/or many sealants can slow the production rate to as few as five children in a day. Children tend to need the highest complexity of care in the first year a school is served by Smart Smiles. In subsequent years, the children's preventive care needs gradually are fewer. This trend has

been noted by the hygienists documenting the care from year to year for children who participate more than one year. Longitudinal data is currently being collected for statistical analysis of the improvement in children's oral health. Participation rates generally increase after the first year a school is served, resulting in additional "first time" children each year. As a result, treatment teams have not experienced shorter lengths of stay at individual schools from one year to the next.

The Smart Smiles teams are employed year-round and benefit from the year-round school schedules in Milwaukee public schools. This allows for seeing children in June and August. Additional venues for services in July include summer school sites and youth summer programs, such as Boys & Girls Club locations.

The role of the Smart Smiles supervisor has been to coordinate scheduling, logistics of equipment moves, supply needs, sterilization supplies and data and billing coordination. A billing specialist enters information and submits bills to Southeast Dental Association (SEDA), the dental vendor for managed care, for reimbursement from HMO's.

Summary of Inputs

Start-up Costs:	EQUIPMENT: 4 hygiene stations; 1 sterilization set up	$65,000

Annual operating budget: 2007-2008

	EXPENSES	
Personnel:	Clinical: 1 Dentist (0.3 FTE) ; 2 RDHs, 2 DAs (0.85FTE each)	$290,180
	Non-clinical: supervisory; clerical staff (1.5 FTE)	$78,540
Movers:	24 moves	$4,800
Travel:	Mileage reimbursement	$4,020
Equipment	Repair / replacement:	$10,000
Supplies:	Clinical disposables and office supplies	$20,000
	TOTAL EXPENSES:	**$407,540**
	INCOME	
Insurance Reimbursement	Badger Care / Medicaid	($197,975)
Grant Funding:	Seal-a -Smile	($20,000)
	Corporate/Government/Foundation Donors	($187,000)
	Columbia St. Mary's Foundation	($2,565)
	TOTAL REVENUE:	**$407,540**

Inputs/Budget Notes. There are several factors pertaining to the grant funding section of the revenue portion of the budget that require explanation. First, sufficient grant funding is critical to the revenue side of the budget because current state insurance reimbursement rates do not cover all program costs. Second, participation in the Seal-A-Smile program is important regardless of the amount of funding granted. Participation in Seal-A-Smile includes participation in the CDC-developed database which gives the program invaluable data for outcomes measurement. Finally, the sponsoring agency, through Columbia St. Mary's Foundation, agrees to fund the difference between expenses and revenue from all other sources, acting as a safety net for the program. This gives the program the financial stability to plan each year's services and make commitments to the community schools with a high degree of assurance that they will be able to honor those commitments.

In addition to the budgetary safety net, many expenses associated with the start up and operations of the Smart Smiles program have been absorbed by Columbia St. Mary's. CSM provides administrative support infrastructure, such as a home base office, telephones, computers, software and office supplies. CSM also provides annual staff education in the areas of infection control, patient safety and privacy. Services and expertise from all departments of the organization are available to the program. For example, the purchasing department helps secure optimal pricing on equipment purchases. Liability insurance is underwritten by Ascension Health, the health system sponsor of CSM. All of these supports are critical in achieving and maintaining high quality of care and accountability.

Program Evaluation

Smart Smiles' program evaluation activities focus on monitoring both process and outcome indicators.

Process Evaluation. Smart Smiles' staff reviews and evaluates process on an ongoing basis, adjusting implementation of the program as needed. Information collected in the Seal-A-Smile database provides valuable program reporting data such as that displayed in Table 1. Demographic information about program participants is also collected, as shown in Table 2.

Financial sustainability is evaluated as part of annual budget preparation. Program expansion is dependent on income growth, which typically comes in the form of multiyear grant commitments. Charitable foundations and corporations that donate funds often provide feedback as part of the mid-grant cycle reviews or end-of-grant reviews. Feedback from other stakeholders is collected in advisory board meetings and from meetings with partner school leaders.

Indicator:

- Actual oral health services delivered to participants annually

Table 1. Summary of services delivered 2007-2008

# Children screened	2426
# Children sealed	1493
% Children sealed	73%
# Receiving fluoride	2411
# Referred for dental care	1716
# Receiving oral health education	2956

Indicator:

- Demographic profile of program participants

Table 2. Demographics of participants 2007-2008

Gender Male 49% Female 51%	
Race/ethnicity (may report more than one)	
White	5.5%
Black/African American	86.7%
American Indian/Native Alaskan	1.4%
Hawaiian/Pacific Islander	0.1%
Asian	2.2%
Hispanic	7.4%
Other	1.4%
Reporting race	**97%**

Outcomes Evaluation. The Smart Smiles program currently measures its progress in achieving several short-term and medium-term outcomes. Child-level and event-level (school) data is collected on an ongoing basis throughout the year and reported to Seal-A-Smile annually. In addition, Smart Smiles' own patient database software captures useful information on an ongoing basis. Below are examples of several outcome indicators and data from the 2007-08 school year for each indicator.

Indicator:

- The program's effectiveness in targeting a population at high risk for unmet dental care needs. (Short-term outcome.)

Table 3. Summary of Effectiveness in Targeting High-risk Populations 2007-2008

	Number	Percentage of participants
Participants with untreated decay	1688	70%
Participants with early dental needs	1653	68%
Participants with urgent dental needs	73	3%

Indicator:

- Healthy teeth protected from decay by fluoride and dental sealants. (Medium-term outcome.)

Table 4. Estimated Cavities averted in 1st & 2nd Molars 2007-2008

	Number
1st molar cavities averted by program	2510
2nd molar cavities averted by program	855
TOTAL	3365

Indicator:

- Estimated annual cost of dental procedures averted through implementation of the program. (Medium-term outcome.)

Table 5. Estimated Cost of Averted Procedures in Sealed Molars 2007-2008

			Cost of procedure	Distribution of services needed	Cost of averted procedures
Procedure	Location		$		
Amalgam	Surfaces	1	94	15%	$47,447
		2	110	20%	$74,030
		3	133	3%	$13,426
Resin composite	Surfaces	1	117	17%	$66,930
		2	153	10%	$51,485
		3	186	1%	$6,259
Prefab Stainless Crown	Primary tooth		192	1%	$6,461
Pulp Cap - Indirect	Primary tooth		53	8%	$14,268
Extraction	Erupted tooth		105	13%	$45,932
	Coronal remnants		80	12%	$32,304
Totals				**100%**	**$358,541**

Table 5 notes: Figures are based on the program's estimated number of cavities averted for 2007-2008 (n=3365). Cost of averted procedures does not reflect the total benefits of Smart Smiles' services to children. Computations are based on conservative estimates of cavities averted in sealed molars only. Other sealed teeth, prophylaxes and fluoride services also benefit oral health in ways that avert costly procedures, but no current calculations are available to account for this benefit.

Progress on several other outcome measures is assessed by monitoring the patient database and other program records. These include:

- Participants are given the opportunity to receive restorative care in a dental home through the referral process. (Short-term outcome.)
- Participants' parents are assisted in accessing dental care for their children. (Short-term outcome.)
- Participants become independent in preventive oral health care and successfully maintain healthy oral status. (Medium-term outcome.)
- Urgent and routine dental care needs are identified and referrals made to a dental home for treatment. (Medium-term outcome.)

Several other short-term outcomes are not currently measured by the program, but can reasonably be expected to occur given the activities of the program. Examples of these include:

- Participants' knowledge of oral health increases. (Short-term outcome.)
- Participants are motivated to improve their oral health through professional and self care. (Short-term outcome.)

Finally, the Smart Smiles program aims to achieve several long-term outcomes for its participants and the larger community. Future program evaluation efforts may explore ways to measure these and other expected benefits of the program:

- Participants establish a dental home at a dental office of their choosing and become lifelong consumers of preventive and restorative dental care.
- Smart Smiles contributes to a healthier community in the future.

Staff Reflections and Critical Elements of Success

Organizational Factors. CSM has committed to supporting MADC's services to vulnerable people. CSM's support must be balanced with the hospital's responsibility to be fair to paying patients, insurance companies and local businesses that attempt to provide insurance to employees. It cannot overwhelmingly donate funds to MADC and shift costs to other payors. As a result, additional funding is needed primarily to support urgent care for uninsured patients who line up each morning for the clinic's urgent care session. Some funding is also needed for restorative care.

At the same time, the Smart Smiles program is faced with an overwhelming need to serve the growing number of impoverished children in Milwaukee; currently, Smart Smiles visits 24 of the 82 schools in Milwaukee. BadgerCare reimbursement does not cover all Smart Smiles' costs, and thus the program depends on grants and corporate support to balance the budget. CSM has accepted Smart Smiles' commitment to expand as long as the Smart Smiles' budget does not fall into deficit.

A critical element of success, therefore, is for Smart Smiles to expand only as it is financially supported. This limitation calls for supplementing reimbursement with grants and donations to Smart Smiles. In 2008, the sustainable level grew from two full teams to three teams.

Political Climate. Provision of such services could be seen as competitive with the practice of private dentists. However, because of the great need for dental services in this community, and because the service is preventive in nature, the program has experienced no resistance from area dentists. In fact, MADC has enjoyed the support of the Greater Milwaukee Dental Association and the Wisconsin Dental Association for funding and in-kind volunteer support.

Another politically sensitive element is the scope-of-practice issue regarding dental hygienists. According to the Dental Practice Act, hygienists could offer preventive services in public health and school settings without needing a dentist's prescription. However, as Smart Smiles moved into the strategy of billing for services, the need for a dentist's services arose because HMOs required a dentist's prescription for services. Additionally, Smart Smiles believes that a dentist's assessment is valuable particularly for referral of children needing treatment by a dentist in the community. In fact, many children need urgent dental care, and many more need regular restorative care. One of the challenges of Smart Smiles is to facilitate dental treatment for children with these needs.

Diversity. MADC's cultural diversity among its staff also has been a critical element of its success. As previously mentioned, having staff who are culturally similar to the students may be an important factor in helping students feel at ease. Additionally, although most students speak English, on occasion it has been helpful for dental assistants to calm students in Spanish.

Also, the implicit message provided by a culturally diverse staff is that students of color can work in health care. The experience of groups, such as Milwaukee Area Health Education Center, has been that many minority students don't consider health professions to be a realistic opportunity for themselves. With a diverse staff delivering oral health services, it becomes clear that health professions are, in fact, within reach for all students.

Partnership. Building strong partnerships with schools is critical for efficient use of program resources. Smart Smiles, therefore, ensures that the principal or assistant principal and nurses are fully educated about the program and are directly involved in the planning and execution of the program in each individual participating school. Partner requirements and expectations are clearly spelled out and agreed upon in advance of Smart Smiles' arrival at the school. Frequent contact with school leaders during planning and execution phases ensures that any problems are discovered and handled quickly. Feedback in the form of a written report is given to each school after completion of that year's participation. This report gives the school a tool for communicating the value of program participation to its various stakeholders.

Contexts Where Smart Smiles May Be Inappropriate. An important element of the success of Smart Smiles has been the ability to continue the program year after year, creating an oral health appreciation within the schools. Return services also have enabled services to be continuous for children staying in the same schools. Thus, Smart Smiles would be inappropriate in a one-time situation. Also, Smart Smiles likely would have difficulty if opposition existed in the dental community. Fortunately, the provision of school-based preventive oral care has not created conflict in the dental provider community in Milwaukee. In rural areas, such a service might compete with the services of providers who depend on caring for children as well as adults to meet business needs.

Additionally, the sustainability of the program is an important element. The Smart Smiles' model of service would be inappropriate if it did not have a method of sustaining itself, either through sponsorship, revenue generation or consistent donations.

Other Lessons Learned. From the clinicians' point of view, school-based preventive care presents a unique set of circumstances with benefits and challenges to their practice. Access to the patients is simple. No appointments are scheduled, so if children are absent from school on a given day, their next chance at getting care is the next day they attend school, not months later as it would be with missing a scheduled appointment in a traditional dental care setting.

Full support of the school administration is critical to program efficiency. The school nurses, in particular, are great assets to the Smart Smiles program. They are advocates for the children, encouraging program participation and providing follow up with families for children needing additional dental care. Although parents are not readily available in the school setting to answer clinicians' questions, the school nurse can often answer medical questions the program's clinicians have about the children.

One ongoing challenge is facilitating dental treatment for those children who are found to have an immediate need for restorative care; for example, widespread caries which may become painful and infected in the near future. Smart Smiles has an agreement with SEDA for triage and treatment. Under the agreement, the dentist's determination of immediacy of need is communicated by treatment codes. An urgent care need is immediately communicated to SEDA, the HMO's dental vendor, for treatment. A SEDA representative contacts parents to help get treatment as soon as possible. When dental treatment is deemed routine, the information is communicated to the HMO, which then attempts to secure care. MADC staff receives feedback about urgent care referrals but not routine referrals. Unfortunately, when the team has returned to the school the next year, it has found that many of the "routine" children have not been treated.

Getting dental care for children without insurance is difficult. Neither SEDA nor an HMO has responsibility for those children, many of whom are undocumented. However, MADC has a grant from a Milwaukee Public Schools-related donor to fund some treatment for uninsured children. Greater funding will be needed as word-of-mouth spreads the news that treatment is available at MADC.

References

1. Pabst, G. Riemer to head anti-poverty institute. *JS Online* [online]. January 12, 2009. Available at: http://www.jsonline.com/news/milwaukee/37482374.html. Accessed February 3, 2009.

2. Glauber, B, Poston, B. 33% of students here live in poverty. *JS Online* [online]. January 9, 2008. Available at: http://www.jsonline.com/news/education/29536684.html. Accessed February 3, 2009.

3. U.S. Department of Health and Human Services. *A National Call to Action to Promote Oral Health.* Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Institute of Dental and Craniofacial Research. NIH Publication No. 03-5303, Spring 2003.

4. U.S. Department of Health and Human Services. *At a Glance: Oral Health Preventing Cavities, Gum Disease and Tooth Loss: 2007.* Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Coordinating Center for Health Promotion. 2007. Available at: http://www.cdc.gov/NCCdphp/publications/AAG/pdf/oh.pdf. Accessed February 3, 2009.

5. Otto, M. For want of a dentist pr. george's boy dies after bacteria from tooth spread to brain. *Washington Post* [online]. February 28, 2007. Available at: http://www.washingtonpost.com/wp-dyn/content/article/2007/02/27/AR2007022702116.html. Accessed February 3, 2009.

6. *ABC News* [online]. Poor kids without dental insurance can suffer deadly consequences dentists often won't accept Medicaid because of low reimbursement rates. May 2, 2007. Available at: http://abcnews.go.com/GMA/OnCall/story?id=3120743. Accessed February 3, 2009.

7. Office of the Surgeon General, U.S. Department of Health and Human Services. *The Resource Library Fact Sheet for Children's Oral Health* [online]. May 2000. Available at: www.cdc.gov/ORALHEALTH. Accessed February 3, 2009.

Funded by the
Wisconsin Partnership Program

UNIVERSITY OF WISCONSIN
Population Health Institute
Translating Research into Policy and Practice