

MAKING MILWAUKEE SMILE

A report on efforts to improve the oral health of Milwaukee children.



2011

Partners and Acknowledgements

This project was funded in part by the Healthier Wisconsin Partnership Program, a component of the Advancing a Healthier Wisconsin endowment at the Medical College of Wisconsin.

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Children's Hospital of Wisconsin Dental Center
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Marquette University School of Dentistry
Medical College of Wisconsin
Milwaukee Health Services, Inc.
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Executive summary

Oral health is an integral component of general health and contributes to one's overall well-being. A well-documented link exists between oral and systemic health. Tooth decay (dental caries) is the single most common chronic disease of childhood, occurring five times more frequently than asthma and seven times more often than hay fever.¹ According to the 2008 Make Your Smile Count survey conducted by the Wisconsin Department of Health Services, 20 percent of the state's third grade children had untreated decay in at least one primary or permanent tooth. Data reviewed on children in the city of Milwaukee indicates the proportion of children with untreated decay is disproportionately higher than the rest of the state. Statistics from the 2008 Make Your Smile Count third grade oral health survey showed children in Milwaukee to have an untreated decay rate of 37.5 percent, far higher than the state average of 20 percent.³

In 2006, as a result of a Healthier Wisconsin Partnership Program (HWPP) development grant, Children's Health Alliance of Wisconsin (Alliance), Children's Hospital of Wisconsin Dental Center, Marquette University School of Dentistry (MUSoD), Medical College of Wisconsin (MCW) and Milwaukee Public Schools (MPS) formed the Healthy Teeth = Healthy Kids (HT=HK) partnership. Funding from a HWPP development award allowed partners to create a plan to improve the oral health of Milwaukee children. The HT=HK partners released *Healthy Teeth = Healthy Kids: a plan to improve the oral health of Milwaukee children* in August 2007. HT=HK included four key recommendations focusing on the partnership's mission of increasing the number of children with a dental home.

A three-year HWPP impact award, Making Milwaukee Smile (MMS), was awarded to focus on three of the four HT=HK recommendations. Columbia St. Mary's Smart Smiles program, Milwaukee Health Services, Inc. and Southeast Dental Associates (SEDA) were identified as essential partners to address the three proposed recommendations. All three objectives were met and exceeded by the MMS partnership over the three-year implementation.

MMS Objective 1: By June 30, 2011, reduce the proportion of children in Starns Schools with urgent oral health needs by 15 percent.

- **Result:** Since 2008, urgent oral health needs decreased from 8 percent to 4 percent, a net decrease of 50 percent as a result of MMS. Additionally, children with early treatment needs decreased from 68 percent to 46 percent, a 32 percent decrease in the number of children with disease.

MMS Objective 2: By June 30, 2011, increase participation in Columbia St. Mary's school-based oral health program by 30 percent.

- **Result:** Since 2008, student participation in the Columbia St. Mary's Smart Smiles program has increased from 50 percent to 77 percent, a 53 percent increase as a result of efforts of the oral health care coordinator (OHCC) provided by MMS.

MMS Objective 3: By June 30, 2011, increase the role of 100 health care providers in addressing oral disease.

- **Result:** Since 2008, MMS partners trained 151 primary care providers on performing oral health

risk assessments, providing anticipatory guidance and applying fluoride varnish. As a result an increase in knowledge of these providers has been documented. Many of the providers trained have now incorporated new oral health practices into their day-to-day care plans.

A full-time OHCC was hired by Smart Smiles to address MMS objectives 1 and 2. Smart Smiles is a school-based oral health prevention program providing comprehensive/preventive oral health services in more than 40 Milwaukee schools annually. The OHCC was placed in two MPS schools (Starms Early Childhood Center and Starms Discovery Learning Center) and worked directly with administrators, staff, parents, caregivers and children. The OHCC worked to increase participation in the Smart Smiles program and assisted families in finding dental homes for children, especially those needing restorative care.

To address MMS objective 3, dental providers from Children's Hospital of Wisconsin Dental Center, MHSI and MUSoD, along with the Alliance oral health project manager, implemented training for medical providers on performing oral health risk assessments, providing anticipatory guidance and applying fluoride varnish. Implementation of the OHCC and primary care provider training proved to be successful as all three MMS objectives were not only met, but exceeded.

Partners identified nine key findings in reviewing MMS data:

- **Implementation of an OHCC significantly increased access to preventive services.**
- **Implementation of an OHCC had an impact on early and urgent disease rates.**
- **Children with annual access to school-based oral health preventive services have decreased dental disease rates.**
- **Over half of Milwaukee primary care providers are aware that early oral health intervention is best.**
- **Primary care providers have a difficult time referring their patients with identified dental problems due to the lack of Medicaid dental providers.**
- **If reliable referral sources existed, more primary care providers would conduct pediatric oral health risk assessments.**
- **Medical providers are willing to implement oral health risk assessments and apply fluoride varnish with proper training.**
- **Training primary care providers increased their knowledge of oral health risk assessment.**
- **Feedback from MMS partners revealed that effective and well-organized meetings with clear goals and quality discussions were held. In addition, partners reported that different opinions were respected and partnership meetings benefitted from effective leadership and facilitation.**

MMS partners strongly believe the data in this document can be used to leverage funding to support the OHCC role in communities across Wisconsin and the nation. MMS partners also continue to advocate for medical providers to play an active role in the prevention of dental disease. It was the intent of the partnership to determine if this intervention would lead to greater access to dental care and lower disease prevalence for children by implementation of the OHCC. Additionally, MMS partners wanted to engage primary care providers in oral health risk assessments and application of fluoride varnish. While this intervention is not the only answer to improving pediatric oral health, it is a possible solution to a multi-faceted problem.

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Cause for concern

Nationwide

Oral health is an integral component of general health and contributes to one's overall well-being. A well-documented link exists between oral and systemic health. Research indicates such a link between heart disease, diabetes and low birth weight. Tooth decay (dental caries) is the single most common chronic disease of childhood, occurring five times more frequently than asthma and seven times more often than hay fever.¹ Nationwide, 50 percent of children living in poverty ages 2 to 11 have untreated dental disease compared to only 31 percent of more affluent children, despite dental disease being preventable through application of early preventive measures, sustainable home care and appropriate periodic professional services.²

Wisconsin

According to the 2008 Make Your Smile Count survey conducted by the Wisconsin Department of Health Services, 20 percent of the state's third grade children had untreated decay in at least one primary or permanent tooth. Of these children, 3 percent presented with urgent treatment needs.³ Additionally, 28.1 percent of the children from low-income schools, based on a free and reduced lunch rate of greater than 50 percent, had untreated decay compared to only 13.4 percent at higher-income schools.³ The need for urgent dental care was 2.9 percent in low-income schools compared to 1.8 percent in higher-income schools. In 2008, the percentage of third graders with untreated decay dropped from 33 percent in 2002, to 20 percent. This can be partly attributed to significant expansion of the state's school-based dental sealant program primarily targeting second graders.^{3,4} In addition, 24.3 percent of children in the southeast region of the state had untreated decay compared to only 13.4 percent in the southern region and 16.9 percent in the northern region.^{3,4}

In 2009, only 25 percent of Medicaid eligible patients statewide received any kind of oral health care services.⁵ In part, this is due to the limited number of Medicaid dental providers, reported to be 1,327 of 3,414 licensed dentists statewide in 2010.⁵ Low Medicaid reimbursement rates contribute to the declining number of dental providers accepting Medicaid patients. While complete data from the private sector is unavailable, Delta Dental of Wisconsin reported that 60-70 percent of enrollees accessed dental services in 2008.⁶ In the state's fiscal year 2010, only 26.5 percent of Medicaid dental providers had paid claims of \$10,000 or more and only 19.6 percent saw 50 or more beneficiaries younger than age 21.⁷

According to the 2010 Burden of Oral Disease in Wisconsin, state hospital emergency departments saw 25,187 patients with non-traumatic dental complaints in 2009.⁵ Medicaid eligible patients made up 39 percent of those presenting at emergency rooms and 33 percent were listed as self-pay or uninsured.⁵

Milwaukee

Data reviewed on children in the city of Milwaukee indicates the proportion of children with untreated decay is disproportionately higher than the rest of the state. Statistics from the 2008 Make Your Smile Count third grade oral health survey showed children in Milwaukee to have an untreated decay rate of 37.5 percent, far higher than the state average of 20 percent.³ In 2010-11 there were three programs providing school-based oral health preventive services in approximately 80 Milwaukee schools. These programs target high-risk children in schools with high free and reduced lunch rates. Often these schools had free and reduced lunch rates greater than 70 percent, with untreated decay rates of about 50 percent.⁸ These decay rates far exceed the state average and even exceed state averages for children in low-income schools with similar free and reduced lunch rates.

Background

Process for development

In 2006, as a result of a Healthier Wisconsin Partnership Program (HWPP) development grant, Children's Health Alliance of Wisconsin (Alliance), Children's Hospital of Wisconsin (CHW) Dental Center, Marquette University School of Dentistry (MUSoD), Medical College of Wisconsin (MCW) and Milwaukee Public Schools (MPS) formed the Healthy Teeth = Healthy Kids (HT=HK) partnership. Funding from a HWPP development award allowed partners to create a plan to improve the oral health of Milwaukee children. Partners identified community stakeholders in the city of Milwaukee addressing children's oral health issues. These stakeholders included private dental and medical providers, dental and medical clinics, Federally Qualified Health Centers (FQHC), school personnel, state public health officials, community organizations and others to gather detailed information and ideas. The partnership also conducted focus groups of both children and parents to obtain information related to their knowledge of oral health, and experience in accessing and receiving care.

The HT=HK partners released *Healthy Teeth = Healthy Kids: a plan to improve the oral health of Milwaukee children* in August 2007. HT=HK included four key recommendations focusing on the partnership's mission of increasing the number of children with a dental home. The partnership's overarching goal was reducing the proportion of Milwaukee children with untreated dental decay. Below are the four recommendations from the report, along with partner and stakeholder strategies to address them.

HT=HK recommendations and strategies

Objective 1: Reduce the proportion of children in Milwaukee with urgent oral health needs.

Strategies:

- 1.1 - Establish an oral health care referral system to assist parents and families in the process of obtaining oral health care for their Medicaid insured or uninsured child.
- 1.2 - Develop dental emergency facilities for patients with urgent oral health needs.
- 1.3 - Increase the proportion of children who receive annual oral health risk assessments.
- 1.4 - Increase the local community's role in connecting families with oral health care services.

Objective 2: Increase the capacity of clinics and private practices to treat the uninsured and Medicaid population.

Strategies:

- 2.1 - Significantly increase the state of Wisconsin dental Medicaid reimbursement rates.
- 2.2 - Seek state action creating a single dental benefits administrator for the purpose of managing oral health care for families covered by Medicaid and other government programs.
- 2.3 - Increase resources to expand existing large clinics (three or more full-time dentists) and capacity of FQHC's to deliver oral health care.
- 2.4 - Increase the number of dental providers serving Medicaid and uninsured populations.
- 2.5 - Offer dental clinics the services of an oral health consultant to evaluate their programs and provide recommendations for achieving greater efficiency and quality service.

Objective 3: Increase the number of children having access to school-based oral health prevention programs.

Strategies:

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- 3.1 - Expand current school-based oral health programs modeled after the Columbia St. Mary's Smart Smiles school-based oral health program.
- 3.2 - Expand early prevention services targeting infant and early childhood populations.
- 3.3 - Increase parental participation in education, prevention and treatment.
- 3.4 - Encourage all schools to support and participate in school-based comprehensive oral health programs each year.

Objective 4: Increase the role of health care providers in assessing the oral health of Milwaukee Children.

Strategies:

- 4.1 - Implement an oral health training program for health care providers working in pediatric and family practice settings.
- 4.2 - Give health care professionals the necessary information to refer patients to an appropriate oral health care provider.
- 4.3 - Advocate for Medical College of Wisconsin, the University of Wisconsin School of Medicine and Public Health, and other health professional training institutions to implement a comprehensive oral health curriculum as part of their formal training.
- 4.4 - Recommend that local school districts promote annual oral health risk assessments prior to enrollment.

Making Milwaukee Smile

The HT=HK partners applied for an implementation grant to address several of the above recommendations and identified additional partners for a new project titled, "Making Milwaukee Smile (MMS)." A three-year HWPP impact grant was awarded to focus specifically on Objectives 1, 2, and 4 from the HT=HK plan. Columbia St. Mary's Smart Smiles program, Milwaukee Health Services, Inc. and Southeast Dental Associates (SEDA) were identified as essential partners to address the three recommendations partners proposed. The objectives of MMS's three-year implementation program were:

MMS Objective 1: By June 30, 2011, reduce the proportion of children in Starms Schools with urgent oral health needs by 15 percent.

MMS Objective 2: By June 30, 2011, increase participation in Columbia St. Mary's school-based oral health programs by 30 percent.

MMS Objective 3: By June 30, 2011, increase the role of 100 health care providers in addressing oral disease.

Making Milwaukee Smile was divided into two parts. Through collaboration with Columbia St. Mary's Smart Smiles, a full time oral health care coordinator (OHCC) was hired to address MMS objectives 1 and 2. Smart Smiles is a school-based oral health prevention program providing comprehensive preventive oral health services in over 40 Milwaukee schools annually. The OHCC was placed in two MPS schools (Starms Early Childhood Center and Starms Discovery Learning Center) and worked directly with administrators, staff, parents, caregivers and children. The OHCC worked to increase participation in the Smart Smiles program and assisted families in finding dental homes for children, especially those needing restorative care. The protocols and templates the OHCC followed to achieve MMS objectives can be found in the appendices section.

To address MMS objective 3, dental providers from Children’s Hospital of Wisconsin Dental Center, Milwaukee Health Services, Inc. and MUSoD, along with the Alliance oral health project manager, implemented training for medical providers on performing oral health risk assessments, providing anticipatory guidance and applying fluoride varnish. Training was developed in partnership with the American Academy of Pediatrics (AAP) and provided to individual clinics and providers in anticipation implementation would occur upon completion. Through the AAP, continuing medical education was given to providers who successfully completed the training. Implementation of the OHCC and primary care provider training proved to be successful as all three MMS objectives were not only met, but exceeded.

MMS evaluation methods

Treatment data sets were evaluated with a Chi-square test or Fisher Exact test performed for categorical variables. The Linear by Linear Association test was used to see if there were trends by year. P-values of <0.05 were considered significant. Comparisons were made by the year the participant was enrolled in the project.

MMS demographics

Making Milwaukee Smile took place over three years at two Milwaukee Public Schools. The OHCC worked directly in Starms Discovery Learning Center and Starms Early Childhood Center and was a full time Smart Smiles employee. Smart Smiles had been delivering school-based oral health services at these schools for three years prior to MMS implementation. Baseline data from MMS was obtained from the 2007-08 school year (T0). Upon project implementation, Smart Smiles participants at Starms were required to have a signed parental consent for preventive oral health services and a separate consent for project related research activities. Participants had the option of receiving prevention services without participating in the project research. Consent forms were approved through Children’s Hospital of Wisconsin Institutional Review Board. The MMS program began at Starms during the 2008-09 school year (T1) and continued through the 2010-11 school year (T3). The two Starms schools serve children from ages 3 to 14. Consent to research by age, $p \leq 0.001$. Those consenting were younger (median 6 years with a range of 0-14.8) than those not consenting (median 6.7 years with a range of 0-14.5).

Table 1. Making Milwaukee Smile age groups distribution, 2007-11

	T1	T2	T3
	2008-09	2009-10	2010-11
Research participants	N=144	N=162	N=183
3-5 years	36%	27%	32%
6-9 years	46%	48%	52%
10-14 years	18%	25%	16%

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Table 2. Making Milwaukee Smile health insurance coverage distribution, 2007-11

	T0	T1	T2	T3
	2007-08 Baseline	2008-09	2009-10	2010-11
Research participants	N=383	N=144	N=162	N=183
Medicaid-HMO	100%	72%	76%	81%
Private	0%	10%	17%	11%
Uninsured	0%	15%	3%	7%
Unknown	0%	3%	4%	1%

In T0, only 70 percent of the children seen by Smart Smiles reported their insurance status. Those that did were all enrolled in Medicaid. Upon implementation of the OHCC more accurate data was collected. At the completion of T3 more than 90 percent of the program participants had reported their insurance status, more accurately reflecting the makeup of the children seen by Smart Smiles. The annual increase of those with Medicaid insurance was statistically significant ($p=0.001$).



Students, left to right: Farhia Ahmed; Sonteesouk Bouravanh; Maurice Bellamy; Tahyah Fairconatue; Fardowso Shidad. Representing the collaborating partners are, left to right: Reyna Garcia, Columbia St. Mary's; Matt Crespin, MPH, RDH Children's Health Alliance of Wisconsin; Lisa Olson, Medical College; Marques Bland, Columbia St. Mary's; M. Kathleen Murphy, DNP, RN, Milwaukee Public Schools; Anitea Taylor RDH, Columbia St. Mary's; Earnestine Willis, MD, MPH, Medical College; A. Charles Post, DDS, Children's Hospital of Wisconsin Dental Center; and Elizabeth Nelson, MA, Columbia St. Mary's. Not pictured are: Jollette Alexander, DMD, MPH, Milwaukee Health Services, Inc.; Deanna Janssen, RDH, Southeast Dental Associates; Christopher Okunseri, BDS, MSc, Marquette University School of Dentistry; Karen Ordians, Children's Health Alliance of Wisconsin; and Bill Solberg, Columbia St. Mary's.

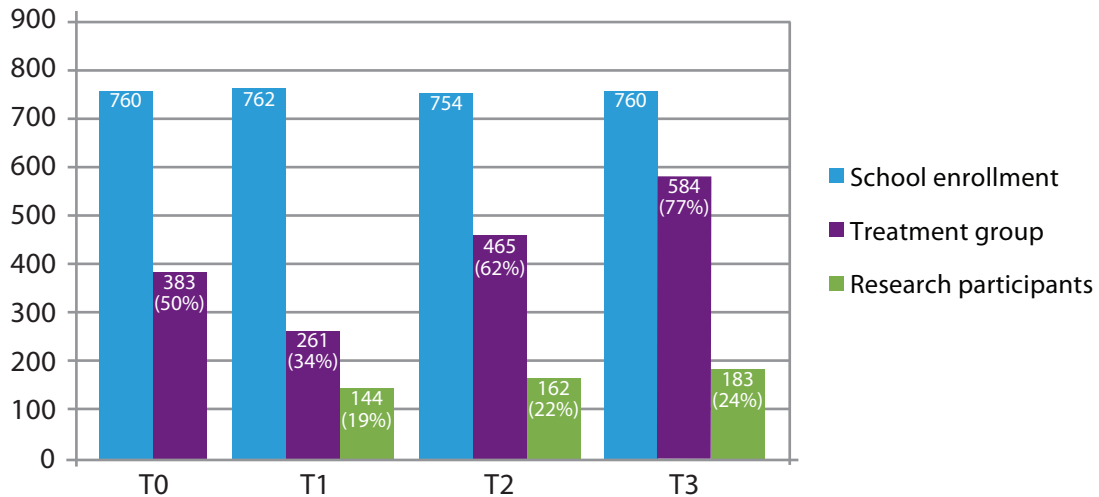
Key findings

- **Implementation of an OHCC significantly increased access to preventive services.**
- **Implementation of an OHCC had an impact on early and urgent disease rates.**
- **Children with annual access to school-based oral health preventive services have decreased dental disease rates.**
- **Over half of Milwaukee primary care providers are aware that early oral health intervention is best.**
- **Primary care providers have a difficult time referring their patients with identified dental problems due to the lack of Medicaid dental providers.**
- **If reliable referral sources existed, more primary care providers would conduct pediatric oral health risk assessments.**
- **Medical providers are willing to implement oral health risk assessments and apply fluoride varnish with proper training.**
- **Training primary care providers increased their knowledge of oral health risk assessment.**
- **Feedback from MMS partners revealed that effective and well-organized meetings with clear goals and quality discussions were held. In addition, partners reported that different opinions were respected and partnership meetings benefitted from effective leadership and facilitation.**

Key finding 1

Implementation of an OHCC significantly increased access to preventive services.

Table 1. Total school age groups distribution, 2007-11



Student participation increased significantly from 50 percent at T0 to 77 percent at T3 which is a 53 percent increase over the three-year period the OHCC was working at Starms. After the first year of implementation, overall program participation was down from prior years. This was attributed to the amount of paperwork being sent home, which included consent forms, HIPAA forms and an additional consent for research. The partnership made changes to this process and gained consent from parents/caregivers for their child to receive preventive services first. Once caregivers gave their consent to participate in Smart Smiles, the OHCC then worked with families to gain consent to have their children participate in the research portion of the program. This process offered families an opportunity to have questions answered, concerns addressed and ultimately decreased hesitation related to program participation resulting in an overall participation rate exceeding the expected 30 percent increase.

Reyna Garcia

Columbia St. Mary's
Smart Smiles Oral Health Care Coordinator



Success story

In the fall of 2007, Emma's parents signed her up for the Smart Smiles program at Starms Discovery Learning Center. Emma received a dental exam from a Smart Smiles dentist who determined she had no current dental needs. She previously had a couple of cavities that had already been filled. Other than that, Emma's dental history was in order.

Emma's parents did not sign her up for Smart Smiles after 2007, and when I began working to locate children at Starms that were not currently participating in Smart Smiles I came across Emma's file. In 2010, I was able to contact Emma's parents and stress the importance Smart Smiles could have on Emma's oral health. We screened Emma in August 2010, nearly three years since Emma's last exam. This time Emma's screening revealed she had advanced recurrent decay in two teeth that were previously filled. Aside from the advanced decay, Emma had a tooth

causing her severe pain. I worked closely with Emma's family to get an appointment for follow-up and address this urgent need at our clinic.

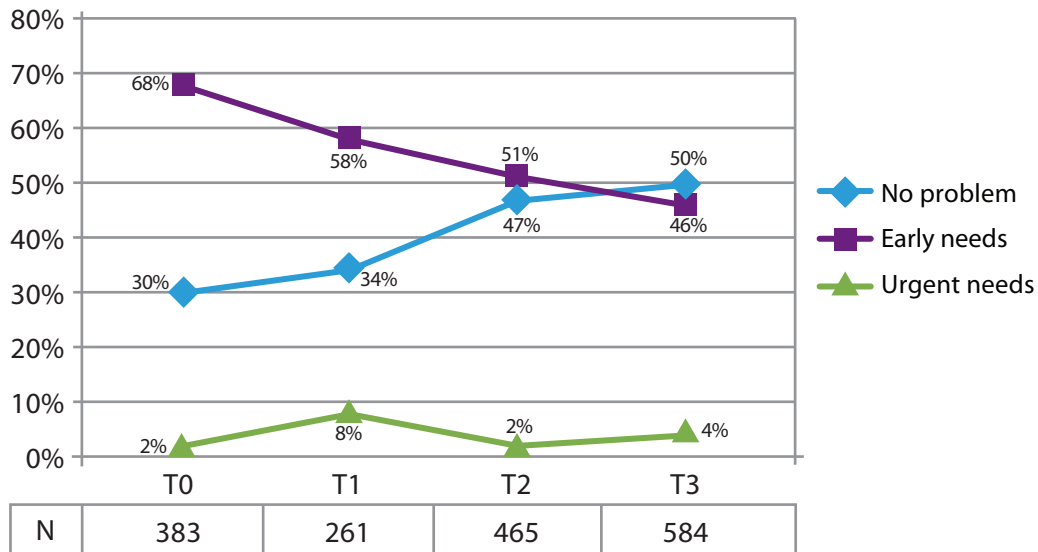
Days after Emma's screening, she had an appointment at St. Elizabeth Ann Seton Dental Clinic. Emma noted that her pain level was a ten, meaning she was in excruciating pain. Emma's dental work was completed in three phases at the Seton Clinic and involved extracting four teeth, non-restorable due to extensive decay. Luckily for Emma, all four teeth were primary teeth and healthy permanent teeth were developing underneath.

As of June 2011, Emma's treatment plan was complete and her parents have been encouraged to continue enrolling her in the Smart Smiles school-based dental program.

Key finding 2

Implementation of an OHCC had an impact on early and urgent disease rates.

Table 2: Making Milwaukee Smile reasons for oral health referrals, 2007-11



The number of children with early dental needs decreased from 68 percent at T0 to 46 percent at T3. A steady decrease in the number of children with early dental needs was observed annually. Early dental needs are defined as those needing treatment of dental disease that is not urgent but should be addressed within 2-4 weeks.⁹ From T1, when the OHCC began working at Starms, the rate of children with urgent oral health needs decreased from 8 percent to 4 percent at T3. Urgent dental needs are defined as emergent need for restorative dental care within 24-48 hours of being identified and characterized by pain or infection, swelling or soft tissue ulceration of more than two weeks duration.⁹ This constitutes a 50 percent decrease during program implementation, well exceeding the 15 percent goal set by program partners.

There were fewer children with untreated cavities in T3 (50 percent) than in other years (66 percent in T1 and 53 percent in T2). The trend is a decrease for untreated cavities by year.

The decrease in the number of referrals needed for follow-up restorative dental care was statistically significant ($p \leq 0.001$) from T1 to T3. Of the children in MMS needing follow-up restorative dental care with known outcomes, 83 percent ($n=149$) established a dental home. The availability of care coordination by the OHCC assisted families with making and keeping appointments.

Additional treatments, including fluoride varnish and sealant application, also were tracked. The median number of sealants increased annually. The trend showed an annual increase in the number of sealants placed ($p \leq 0.001$) and fluoride applications ($p=0.009$).

Marques Bland

Columbia St. Mary's
Smart Smiles Oral Health Care Coordinator



Success story

One of the most memorable things during my first six months as the Smart Smiles OHCC was receiving a phone call from a teacher at Starms Early Childhood Center. She called regarding one of her students that had registered for the Smart Smiles program but thought the student needed dental care even before the program came to the school. The child complained almost daily about how badly his teeth hurt him and she felt sorry for him each time she had to send him to the nurse to get Tylenol for his mouth pain.

I took down the parental contact information and contacted his father. The father expressed how difficult it was to find a dentist so I offered him help in finding one. I called around to a few clinics to see if they were accepting new patients, accepting the child's particular insurance and how long of a waiting list they had. After finding a few clinics that would fit the father's needs, I

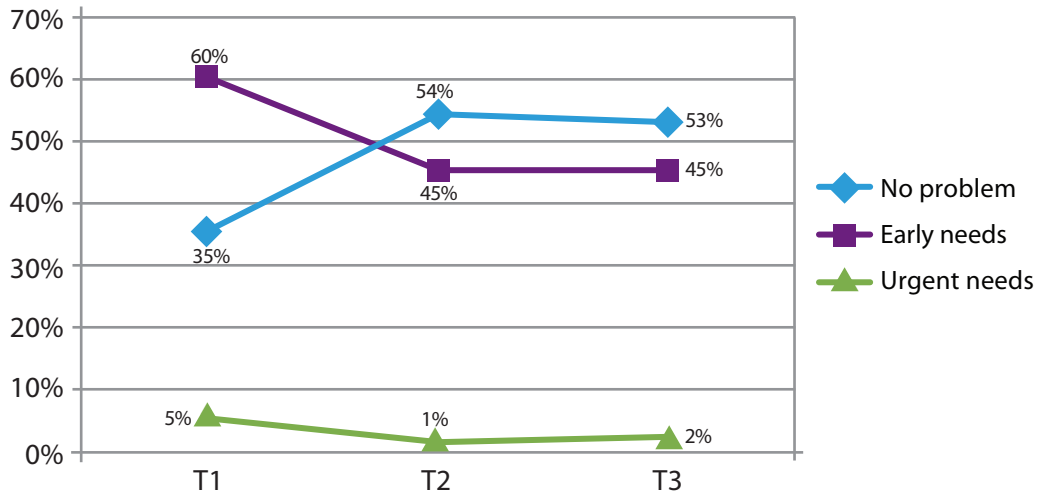
called the father back and gave him the results. I also told him to give me a call if he needed further assistance.

A few weeks later, when the Smart Smiles program came to the Early Childhood Center, I was pleased when the dentist noted this particular student had recently been to a dentist, and although he had additional treatment needs, he wasn't in pain anymore. I continued working with the family to ensure this child's treatment was completed as quickly as possible.

Key finding 3

Children with annual access to school-based oral health preventive services had lower untreated dental disease rates.

Figure 3. MMS reasons reported for oral health referrals for returning participants, N=112



Between T1 and T3 it was observed that children participating annually at Starms had fewer oral health needs and more of them had established a dental home. There was a significant decreasing trend annually of children needing referrals for follow up ($p \leq 0.001$) and in the number of children with early dental needs ($p \leq 0.001$). The OHCC assisted in reducing the number of children with urgent needs through partnerships with area dentists and assisting families in scheduling appointments for treatment.

Dr. Mary Cimrmancic

Columbia St. Mary's
Smart Smiles Dentist



Success story

In August of 2009, seven-year old Latasha was signed up by her parents to participate in the Smart Smiles program at Starms Discovery Learning Center. Our dental team, composed of one dentist, a hygienist, two dental assistants and an OHCC, conducted a dental screening at Latasha's school two weeks before the dental program started treatment there. After an initial exam, I found Latasha had a cavity in one of her primary teeth. Following the screening, the OHCC referred Latasha to SEDA to find a dental home for her. A parent letter indicating her need to see a dentist due to possible tooth decay was sent home with her after she had received sealants, a dental cleaning and fluoride varnish from the Smart Smiles program at her school.

The following year, Latasha was once again signed up for the dental program and in August of 2010, she was screened by the Smart Smiles dental team. It was noted in her exam

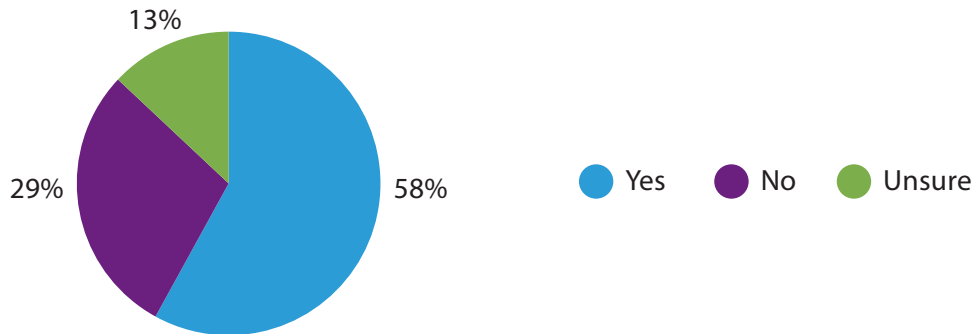
that the tooth which was decayed the prior year had now been filled. No additional decay was noted and did not need to be referred for further restorative work. Latasha received another sealant, a dental cleaning and fluoride varnish from the Smart Smiles program that year.

Latasha again participated in the Smart Smiles dental program in August of 2011. When she was screened, it was noted she maintained a healthy smile and was found to have no other dental issues. She completed her treatment with the Smart Smiles program in late August and is on her way to continued oral health. I know the continued access to preventive services and coordination of care provided by the OHCC led to Latasha's healthy mouth.

Key finding 4

Over half of Milwaukee primary care providers are aware that early oral health intervention is best.

Figure 4: Primary care provider’s awareness that they should perform oral health risk assessment on patients beginning at 6 months of age. N=101

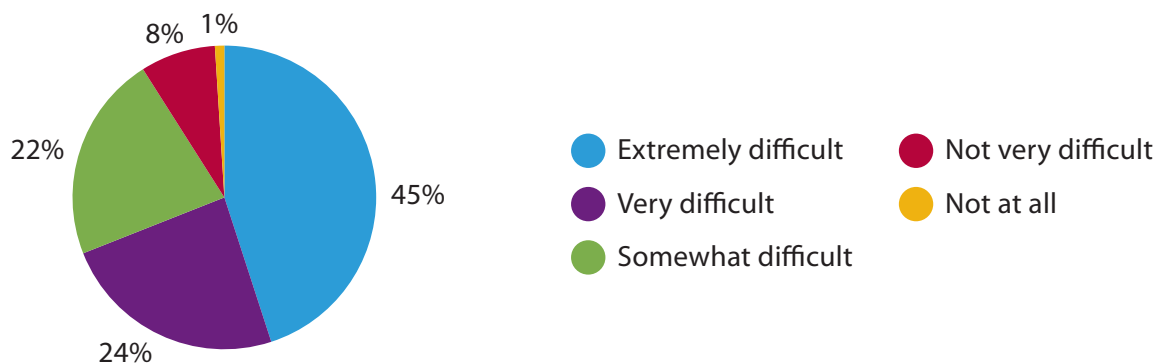


A survey of Milwaukee area primary care providers was first administered by the partnership to determine their knowledge of oral health and the importance of early intervention. A little more than half (58 percent) of primary care providers are aware that the AAP’s Policy on Oral Health Risk Assessment Timing and Establishment of the Dental Home requires pediatricians and pediatric healthcare professionals develop the knowledge-base to perform oral health risk assessments on all patients beginning at six months of age; 29 percent reported no and 13 percent were unsure.

Key finding 5

Primary care providers have a difficult time referring their patients with identified dental problems due to the lack of Medicaid dental providers.

Figure 5: Primary care providers’ reporting difficulty providing oral health risk assessments and anticipatory guidance. N=101

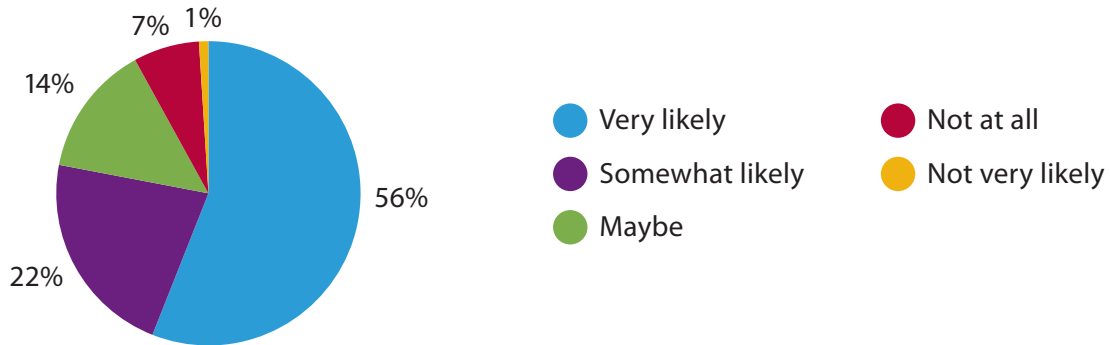


Ninety-one percent of primary care providers encounter difficulty referring Medicaid-insured children with urgent dental needs. This indicates local primary care providers are aware of the limitations of access to dental care issues.

Key finding 6

If reliable referral sources existed, more primary care providers would conduct pediatric oral health risk assessments.

Figure 6: Primary care providers' inclination to perform oral health risk assessments if reliable referral resources were available. N=101



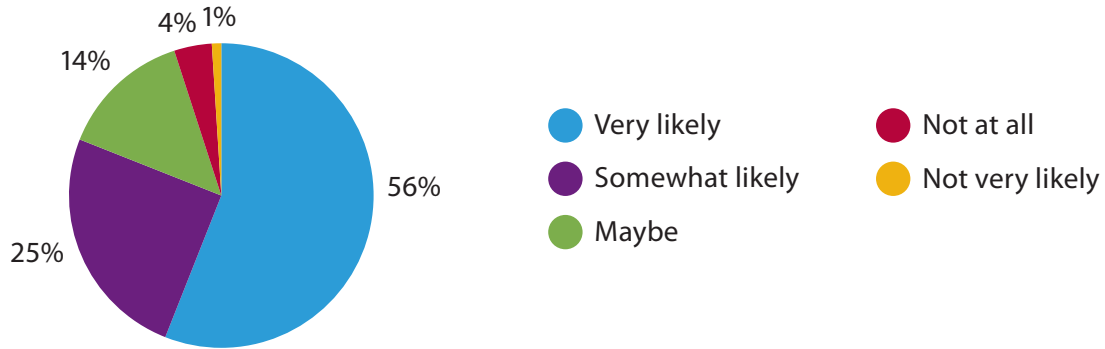
Seventy-eight percent of primary care providers indicate some level of willingness to conduct pediatric oral health risk assessments if they had reliable referral sources for patients with urgent dental needs. This indicates an interest in improving oral health referral systems for pediatric patients and providers.

Upon performing the medical provider training, an updated listing of dental providers was given to clinics and primary care providers completing the oral health training. The listing of dental provider's changes regularly and MMS partners take every opportunity to forward updates to partners.

Key finding 7

Medical providers are willing to implement oral health risk assessments and apply fluoride varnish with proper training.

Figure 7: Primary care provider's willingness to implement oral health risk assessments into delivery of care if more training were provided. N=101



The majority of primary care providers (81 percent) indicate some level of willingness to implement pediatric oral health risk assessments into their current medical practice if training in oral risk assessments were provided in the form of continuing medical education (CME) credits. This indicates an interest in improving the oral health status for pediatric populations.

**Shundle Porter, MA; Dina Romero, RN;
and Jennifer Griffiths, MD**

Staff, Columbia St. Mary's
Family Health Center



Success story

On November 5, 2010, I, along with Dina (registered nurse) and Shundle (medical assistant) from the Columbia St. Mary's Family Health Center, attended training provided by the MMS partners at Sixteenth Street Community Health Center. After the training, staff from Sixteenth Street showed us how they implement oral health assessments and fluoride varnish into their practice. We took the information back to our clinic and, with the support of our clinic manager and medical director, started looking into implementation at our clinic. We did a small pilot first with just a few providers offering oral health risk assessments and fluoride varnish applications to high-risk children.

Starting in March, 2011, we began billing for fluoride services and expanding our training so all faculty doctors and all resident doctors (and our physician's assistant and nurse practitioner) would know how to complete a risk assessment and apply varnish. It is taking off. Since implementation, 236 children have

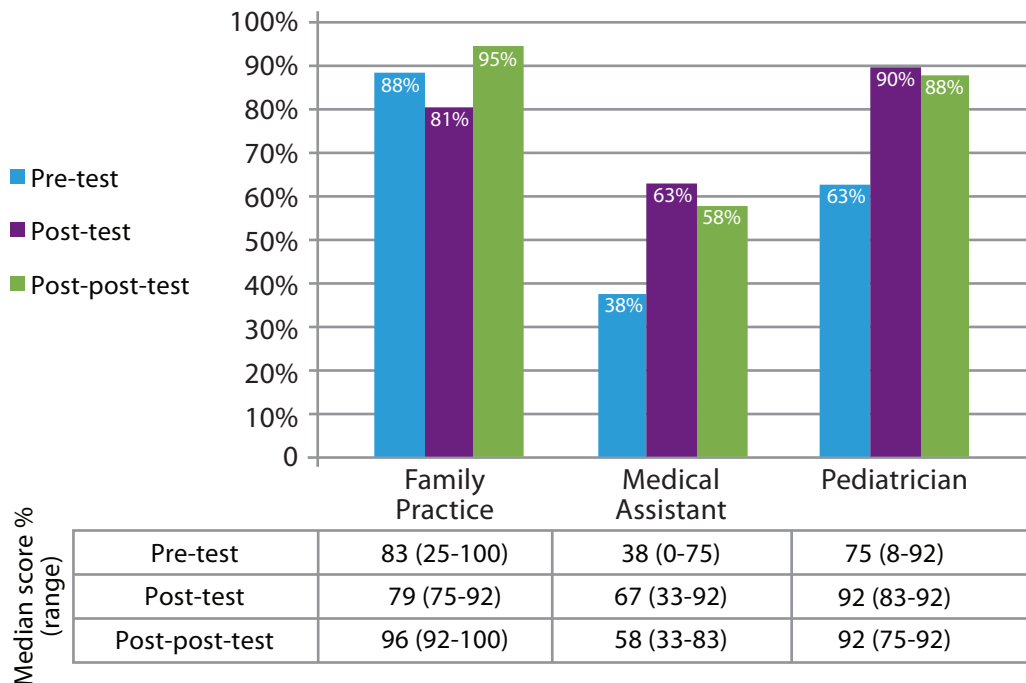
received fluoride varnish applications in our clinic. We keep the materials in the room, so that the fluoride is easily accessible and applied the way I might grab a tongue depressor to look at the back of the throat, so it is quite efficient.

In my personal experience, parents are very appreciative and children are very tolerant. There also is no question that by providing this service we are enhancing our own awareness of our patients' oral health and spending more time talking with children and caregivers about the importance of oral health. We even have a new template in our electronic health record which tracks the fluoride treatments, but also reminds us to look for decay and to ask about dentists for the entire family and habits such as night-time feeding and frequent snacking. The collaboration between the MMS partners and other health systems was instrumental in our ability to implement this effective program.

Key finding 8

Training primary care providers increased their knowledge of oral health risk assessment.

Figure 8: Mean pre/post knowledge of oral health risk assessment by health professionals after training



During the course of the three-year implementation program, MMS partners trained 151 primary care providers in the Milwaukee community on providing oral health risk assessments, anticipatory guidance and how to apply fluoride varnish to children at well-child visits. Training was provided to over 80 providers at Children’s Hospital of Wisconsin pediatric grand rounds. Additionally, partners provided training to medical providers and focused on training those health care providers serving high numbers of uninsured and Medicaid insured children. At the trainings, a pre/post test was administered to determine the effectiveness of the training. A post-post test also was administered electronically 6 to 12 months after the trainings to determine if the knowledge had been retained or if ongoing training was necessary. Not all providers participating in oral health training completed a pre/post test.

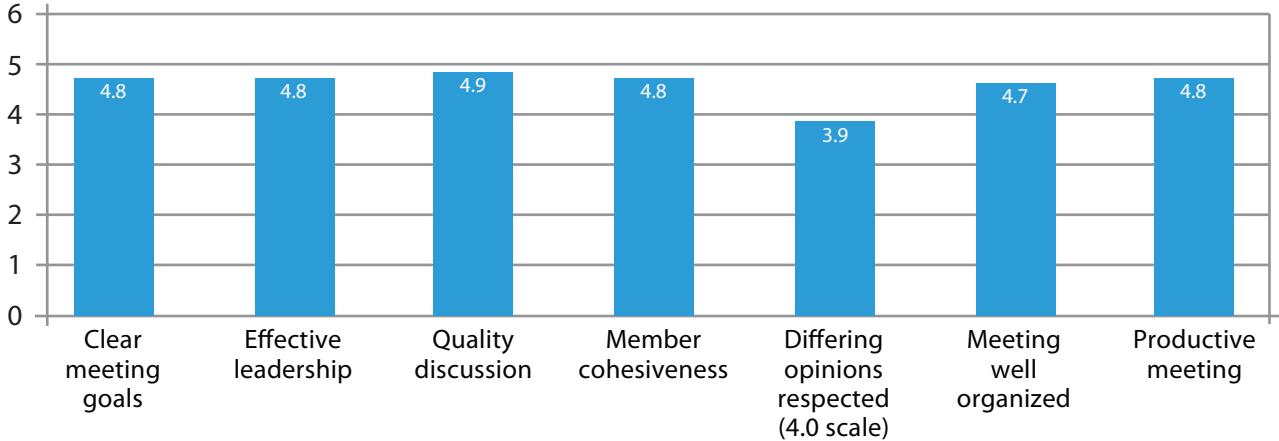
Medical assistants and pediatricians improved their knowledge in oral health risk assessment while the family medicine provider’s knowledge level remained unchanged, which was, however, initially high. Upon completion of the post-post test, knowledge levels of the family practice providers and pediatricians remained high. The knowledge of the medical assistant did not drop significantly in the post-post test results, however, the level of knowledge was still low and therefore additional training for medical assistants may be necessary.

As a result of training, Milwaukee area primary care providers trained feel more comfortable in their ability to provide oral health risk assessments and apply fluoride varnish as a method of preventing early and urgent dental disease.

Key finding 9

Feedback from MMS partners revealed that effective and well-organized meetings with clear goals and quality discussions were held. In addition, partners reported that different opinions were respected and partnership meetings benefitted from effective leadership and facilitation.

Figure 9: Making Milwaukee Smile meeting evaluation summary. N=9
(Scale: 5=very well, 4=well, 3-neutral, 2=not well, 1=not at all, 0=N/A)



Evaluation of the partnership process showed partner meetings were productive and well-organized. Key partners met quarterly to discuss the project’s progress and evaluate program effectiveness. Adaptations to MMS have been ongoing to ensure stated objectives were achieved.

Conclusion

All three MMS objectives were met and exceeded by the partnership over the three-year implementation of MMS.

MMS Objective 1: By June 30, 2011, reduce the proportion of children in Starms Schools with urgent oral health needs by 15 percent.

- **Result:** Since 2008, urgent oral health needs decreased from 8 percent to 4 percent, a net decrease of 50 percent as a result of MMS. Additionally, children with early treatment needs decreased from 68 percent to 46 percent, a 32 percent decrease in the number of children with disease.

MMS Objective 2: By June 30, 2011, increase participation in Columbia St. Mary's school-based oral health programs by 15 percent.

- **Result:** Since 2008, student participation in the Columbia St. Mary's Smart Smiles program has increased from 50 percent to 77 percent, an increase by 53 percent as a result of MMS.

MMS Objective 3: By June 30, 2011, increase the role of 100 health care providers in addressing oral disease.

- **Result:** Since 2008, MMS partners trained 151 primary care providers on performing oral health risk assessments, providing anticipatory guidance and applying fluoride varnish. As a result an increase in knowledge of these providers has been documented. Many of the providers trained have now implemented new oral health practices into their day-to-day care.

Other outcomes aligning with HT=HK recommendations or MMS objectives:

- Additional funding has been obtained by Columbia St. Mary's Smart Smiles to expand the OHCC program and now two coordinators provide services to over 10 Milwaukee schools. (MMS objective 1 and 2)
- Columbia St. Mary's Smart Smiles established new relationships with area dental providers to refer patients in need of both early and urgent care. (HT=HK objective 1.1)
- Children's Hospital of Wisconsin has opened an additional dental clinic in Milwaukee's Metcalfe Park Neighborhood at the Next Door Foundation and collaborates with Next Door Pediatrics. (HT=HK objective 1.2)
- Columbia St. Mary's Family Health Center and Progressive Community Health Center are now providing oral health risk assessments and applying fluoride varnish at well-child checks after completing training provided by MMS partners. (HT=HK objective 1.3)
- Columbia St. Mary's hired parent advocates to assist the OHCC in increasing participation and follow up for children needing restorative care. (HT=HK objective 1.4)
- The State of Wisconsin created a single dental benefits administrator (SEDA) for the purpose of managing oral health care for families covered by HMO's in southeast Wisconsin. However, in 2010 they opted to add a second administrator (DentaQuest). (HT=HK objective 2.2)

- Several practices (private and FQHC) serving high numbers of Medicaid children received state and federal funding for expansion of their dental programs, resulting in increased capacity. (HT=HK objective 2.3)
- Since MMS inception, the number of Medicaid providers has increased, while not as a direct result of the work of MMS partners, it has helped increase capacity slightly statewide. (HT=HK objective 2.4)
- The State of Wisconsin increased funding for Seal-A-Smile, the state school-based dental sealant program, through a combination of state, federal and private funding sources. Funding has allowed the creation of two new programs serving children in the city of Milwaukee. Statewide over 40 programs are funded annually and serve 52 counties. (HT=HK objective 3.1)
- Expansion of the state school-based dental sealant program, Seal-A-Smile, has increased the number of schools served annually from 200 to nearly 450 statewide since 2007. (HT=HK objective 3.4)
- Children's Health Alliance of Wisconsin and Wisconsin Department of Health Services have implemented an oral health training program for home visitors to improve the oral health of children ages birth to 3. Some MMS partners have received a HWPP impact award to expand this program to serve all Early Head Start programs in Wisconsin. (HT=HK objective 3.2)

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Appendix A

Role of oral health care coordinator (OHCC)

The OHCC serves as a case manager at select schools within the Smart Smiles program. The OHCC is assigned to ensure the entire program runs smoothly at specifically targeted schools. This includes encouraging parents to consent to treatment for their children in order to reach project targets. Once students are enrolled in the Smart Smiles program and treatment has begun, the OHCC works with families to secure restorative care. This includes following up with parents and contacting dental offices for appointments. This position is critical to the fundamental goal of the Smart Smiles program. Through the process of MMS, the OHCC at Smart Smiles has developed protocols and processes that have proven to be successful.

After just 18 months of the OHCC being present at the two Storms schools, CSM received additional funding to hire a second OHCC. The ability of the OHCC to not only increase participation at schools but to assist with follow up for families proved to be worth the investment. The following are the protocols the OHCC followed in order to achieve high levels of success at targeted schools.

Pretreatment protocol

1) Initial contact

- a. Arrange time to meet with necessary faculty and administration at targeted schools.
 - i. Discuss prior year's participation levels.
 - ii. Discuss current year's projected goals.
- b. Leave blank consent forms with the school to distribute to teachers in targeted grades.
- c. Discuss and collect possible dates for classroom presentations.

2) School visit before classroom presentation

- a. Collect all returned consent forms.
- b. Collect class rosters for entire school with student names, phone numbers and birthdates.
- c. Confirm classroom presentation schedule with school contact person.
- d. Verify total school enrollment numbers.
- e. Present to school administration and faculty on what the program provides and the importance of oral health as it relates to school performance and attendance.

3) Classroom presentation preparation protocol

- a. Make two copies of the classroom rosters.
 - i. Label one "Hygiene or RDH copy"
 - ii. Label one "OHCC copy"
- b. Using the OHCC copy of the classroom rosters, go through the returned consents and highlight names on the rosters that correspond to completed consent forms.
- c. Set aside incomplete consent forms to take back to the school. Incomplete forms would include:
 - i. Use of pencil, crayon or anything other than ink
 - ii. Missing parent name or signature
 - iii. Missing date
 - iv. Missing answer to any question
- d. Organize completed consent forms by classroom and place with the "RDH Copy" of the

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classroom rosters in the Smart Smiles office. Deliver to clinic hygienist to review the children's health histories.

- e. Make a personalized consent form for all children who have not returned their forms filling in the child's name, and attach a "Please return by" label. Organize these by classroom according to the classroom presentation schedule.
- f. Pack the following in the classroom presentation tote to take to school:
 - i. "OHCC copy" of classroom rosters
 - ii. Classroom presentation schedule
 - iii. Personalized consent forms per classroom
 - iv. Incomplete consent forms
 - v. Extra blank consent forms
 - vi. Business cards
 - vii. Laminated food cards
 - viii. Large mouth model
 - ix. Large toothbrush
 - x. Ribbon floss
 - xi. Tennis ball
 - xii. Goodie bag

4) Classroom presentation protocol

- a. Introduction and explanation of the importance of good oral home care practices, proper nutrition and establishing a dental home.
- b. Healthy foods game.
 - i. Show pictures of different food and drinks.
 - ii. As pictures are shown have students show a thumbs-up or thumbs-down depending on if the food is good or bad for your teeth.
 - iii. Explain why a food or drink is good or bad for your teeth.
- c. Brushing demonstration with mouth model.
 - i. Take the tooth model to show students the techniques of brushing.
 - ii. Close mouth, hold brush at 45 degree angle to maxillary (upper) teeth and make circles with the brush moving from left to right.
 - iii. Move to mandibular (lower) teeth and move from left to right.
 - iv. Open mouth wide and brush all four chewing surfaces (i.e upper right, lower left etc.).
 - v. Brush all lingual (tongue side) surfaces.
 - vi. Instruct students to always remember to brush the tongue.
- d. Flossing demonstration.
 - i. Ask for two volunteers and have them stand shoulder to shoulder in front of the classroom.
 - ii. Ask another student for their favorite food.
 - iii. Have students pretend that the tennis ball is the favorite food.
 - iv. Have volunteers pretend they are teeth and they are chewing the favorite food (tennis ball).
 - v. Move the tennis ball back and forth near the volunteers.
 - vi. Stick the tennis ball between the volunteers' shoulders and explain that this is representing food being stuck in teeth.
 - vii. Use the toothbrush to try and brush the food out and explain that the food is still stuck in between the teeth.

- viii. Use the ribbon as floss and floss between the volunteers all the way down to the ground and back up.
- ix. Pop the tennis ball loose and relate that to food being dislodged.
- e. The importance of annual dental visits.
 - i. Explain that a dentist is a doctor that cares for the health of your teeth and mouth.
 - ii. Explain that bacteria/germs can build up in hard to reach areas of your mouth and become too hard to be brushed off so only dental professionals like dental hygienists can clean it off.
 - iii. If the plaque is not removed it can cause your gums to be irritated and bleed or cavities, which have to be fixed/repaired by a dentist.
 - iv. Dentists, dental hygienists and dental assistants all work together as a team to fix and clean teeth and keep your mouth healthy.
 - v. Everyone should see a dentist at least once a year and have your teeth cleaned twice a year.
- f. Explanation to students of Smart Smiles.
 - i. Screening – Dentists come and make a map of your teeth.
 - ii. Treatment – We move a dental clinic into school to begin seeing all children who have returned consent forms.
 - iii. Sealants – Some of you will receive sealants, which are a thin plastic coating protecting your teeth from bacteria/germs that cause cavities.
 - iv. Dental cleanings – Dental hygienists will clean your teeth so they are shiny and smooth. Cleaning should be done every six months.
 - v. Referral – If you have pain or an urgent dental need, we can refer students to a dentist. Smart Smiles is not a replacement for a dental home, and students should still see a dentist once each year.
- g. Other age-appropriate activities on oral health can be completed if time permits.

Treatment protocol

- 1) **When the treatment team is at the school the OHCC will begin to follow up with any additional children who have not returned consent forms. This will include an additional copy of the consent form being sent home and a phone call to a parent/caregiver.**
- 2) **A Smart Smiles dentist screens all children with completed consent forms on the first day the treatment team is at the school. Based on the findings of the dentist, the OHCC will follow the referral protocol for each individual student.**
- 3) **All children with completed consent forms will receive a complete scope of preventive services including dental cleaning, fluoride varnish application and dental sealants when necessary.**
- 4) **Follow-up fluoride varnish applications and retention checks of sealant occur throughout the duration of the year or the follow year.**

Referral protocol

- 1) **After the screening day, a report is run using clinic software program (i.e. Dentrix, Eaglesoft,**

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etc.) and children are placed into three categories. Children are identified as either needing urgent, early or no follow-up.

- 2) Create a “follow-up spreadsheet” (appendix B) to track last name, first name, phone number, school name, insurance type and appointment date. Make three columns for initialing and dating contact attempts. After three attempts no further attempts are made.
- 3) Update the “follow-up spreadsheet” to track progress of individual patients in obtaining follow-up appointments and care.
- 4) A list of children with urgent needs and early needs is generated by the OHCC and then separated by insurance type. Based on insurance type and follow-up need the following protocol describes what is done to ensure appropriate follow up occurs:

Urgent needs

- Contact all children identified with urgent needs and offer appointments at Seton Dental Clinic (home of Smart Smiles program).
- Document outcomes in clinic software program.
- Document outcomes in the follow-up spreadsheet.
- Continue to follow all patients until treatment is complete.

Routine referrals (early needs)

For all with no insurance or Medicaid (non-HMO)

- Call three times and offer appointment at Seton Dental Clinic.
- Document outcomes in clinic software program.
- Document outcomes in the follow-up spreadsheet.

For patients with HMO Medicaid

- Email HMO patient advocate a spreadsheet with referral information.
- Follow up with HMO patient advocate to determine if appointments have been made, kept and completed.
- Document outcomes in clinic software program.
- Document outcomes in the follow-up spreadsheet.

Evaluate program effectiveness

- Collect data.
- Validate data.
- Transfer to evaluators.
- Biannually summarize the number of children seen; type of treatments offered; education provided and identify trends in data.
- Monitor referrals and follow-up.
- Analyze for changes over time – significant or not.
- Disseminate to all stakeholders.
- Make appropriate changes to areas needing improvement.

Other roles of the OHCC

- Could assist eligible families to enroll in Medicaid which not only includes dental coverage but medical coverage for the child and possibly the entire family.
- Build relationships with dental clinics within the same communities as Smart Smiles schools to increase opportunities for restorative care.
- Educate children and parents about the importance of oral hygiene and regular dental visits.

What makes a good OHCC?

- Problem solver.
- Organized.
- Ability to work in a large system.
- Ability to work with school faculty and administration.
- Ability to work with parents/caregivers.

Individuals with skills sets, education and experience that would make a good OHCC

- Social worker.
- Undergraduate or graduate student in the field of social work, public health, pre-dent, pre-med or other social service majors.
- Parent/Caregiver of a child in a school being served.
- Community leader/advocate.
- Recent graduate with an interest in public health or dentistry.

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This project was funded in part by the Healthier Wisconsin Partnership Program, a component of the Advancing a Healthier Wisconsin endowment at the Medical College of Wisconsin.