



# *The Central Massachusetts Oral Health Initiative Evaluation Report*

## *Final Report*

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## **Editor**

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# CENTRAL MASSACHUSETTS ORAL HEALTH INITIATIVE: FINAL EVALUATION REPORT, EXECUTIVE SUMMARY

## Introduction

The Central Massachusetts Oral Health Initiative (CMOHI) began in early 2000 in response to the urgent need for improved access to oral health care in the Central Massachusetts region. Of particular concern were low-income, uninsured children and families who lacked access to preventive and restorative oral health treatment. Since the inception of the initiative, and throughout the subsequent eight years of funding, CMOHI partners sought to increase available oral health services while removing barriers to such services.

Initial funding for CMOHI from The Health Foundation of Central Massachusetts (THFCM) was joined by funds from a number of local, state, and national organizations. Under the direction of John P. Gusha, D.M.D. and other leaders, CMOHI developed into a broad-based partnership of 25 state and local organizations. It is the largest community-based oral health effort to date in Massachusetts. The contributions from these partners have led to improvements in access to oral health care for under-served populations in Worcester City and Southern Worcester County, while also providing lessons for oral health initiatives in other communities in Massachusetts and around the country.

## Strategies and Accomplishments

Over the course of CMOHI, strategies and programs were refined through regular evaluations, incorporating new insights about the local community and best practices in the delivery of oral health services and education. Paramount among the accomplishments of CMOHI was the formation and persistence of a partnership of organizations and stakeholders in the Worcester community. The initiative brought together public and private health organizations, school administrators, community leaders, a local college and a university medical school in a consortium that was sustained throughout the eight years of the initiative. This partnership will continue. Funds were invested in structures to support communication and coordination among the partnering organizations, which contributed to the success and longevity of the partnership. The accomplishment of constructing and maintaining a broad range of local stakeholders in a partnership was viewed as a key factor in the success of CMOHI programs to improve dental care for children and families in the Worcester area. Stakeholders have committed themselves to maintaining the partnership beyond the end of eight years of THFCM funding.

The comprehensive, community-based approach modeled by CMOHI included five, inter-related strategies. Advocating for state policy change was an important component in creating conditions for the success of the other strategies. Notable accomplishments are as follows:

### (1) Advocating for changes in oral health policy.

*Advocacy for caseload cap and a third party administrator has resulted in increased participation in MassHealth.*

Collaboration between CMOHI, the Oral Health Initiative of North Central Massachusetts and the statewide Oral Health Advocacy Task Force (administered through Health Care for All) identified desired policy changes. Several items on the agenda of the Advocacy Task Force were passed as legislation in Massachusetts and served as key levers for improving oral health. Notable accomplishments included: legislation to allow dentists to limit their MassHealth caseloads; the implementation of a MassHealth third party administrator; the reinstatement of MassHealth coverage to adults in need; and an approved increase in reimbursement rates for dental services for MassHealth patients. These substantive policy changes in priority areas laid the groundwork for effecting sustained change through other CMOHI strategies as well.

### (2) Increasing oral health care access.

Two sub-strategies were the central focus for increasing oral health care access for those who were most at-risk within the Worcester community. One, a phased plan to increase local dentists' care for MassHealth patients consisted of three programs: an initial *Volunteer Program*, followed by a *Partnering Program*, which transitioned to a *MassHealth Recruitment Program*. These represented a progression, moving dentists towards accepting a larger number of MassHealth patients by exposing them to the needs of this population. Also, in coordination with the agenda of the Advocacy Task Force, they helped dentists who wished to provide services to this population. The number of dentists serving this population rose dramatically, from 45 in 2006 to 188 in September, 2008.

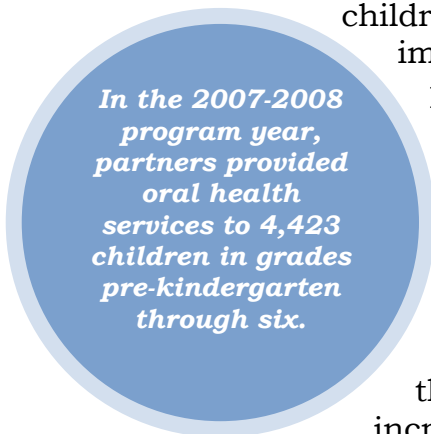
*CMOHI has helped to increase dentist and health center services to those in need.*

A second initiative focused on deepening the capacity of health centers to provide a range of

preventive and restorative services to uninsured patients and participants in MassHealth at clinical sites. Since the launch of CMOHI, CMOHI partner health centers have received over 335,000 dental patient visits. At the Family Health Center of Worcester, the average number of patient visits per month has grown from 700 in 1999 to 1,417 in 2008. Dental patient visits per month peaked at Family Health Center in 2004 at 1,457. At the Great Brook Valley Health Center, the average number of patient visits per month grew from 1,122 in 2000 (the earliest data available) to 2,138 in 2008. Dental patient visits to the Great Brook Valley Health Center peaked in 2006 at 2,621. At both health centers, the number of dental patient visits grew markedly since the inception of CMOHI, but then leveled off and declined. The reasons for changes in the number of visits has been attributed to staffing vacancies, an increase in the number of private practices currently accepting MassHealth patients, the development of another provider (Small Smiles) in Worcester focused on the MassHealth population, and a possible improvement in oral health among children targeted in the schools program, resulting in less need for restorative treatment.

### (3) Providing school-based dental services for underserved children.

Four programs delivered dental services to students in elementary schools targeting those schools in Worcester County with the highest rates of at-risk



*In the 2007-2008 program year, partners provided oral health services to 4,423 children in grades pre-kindergarten through six.*

children. The programs were expected to positively impact the oral health of these vulnerable child populations by providing dental care and by establishing their ongoing relationships with dental care providers. In each program, dental care staff worked closely with school teachers and administrators to provide services to eligible children. Programs focused on providing preventive treatments to students and referrals as needed. Over the course of CMOHI, the number of schools and children served increased dramatically. In 2001-2002, two partners

provided services in fourteen schools to 438 students in second and third grades. The number of schools and children served increased steadily during CMOHI. In the 2007-2008 program year partners provided oral health services to 4,423 children in grades pre-kindergarten through six, in 26 Worcester City schools, and two additional schools in Webster.



#### (4) Establishing a dental residency.

Through establishing a dental residency program, CMOHI sought to bring new oral health resources into the Worcester area. The focus on community-based service residents to make a people in greatest residency were locally after The dental three programs in residents are school. Since the accreditation in of nine residents have remained in practice will continue annually.

*Of the nine residents who have graduated since 2006, five have remained in practice in central Massachusetts.*

was intended to encourage the lasting commitment to serving need. Graduates of the encouraged to practice completing the program. residency is one of only the nation where dental integrated within a medical residency program received 2005 (for seven years), a total completed the program. Five in the Worcester area. New cohorts

#### (5) Educating health professionals, including physicians and medical students, about oral health basics.

The Health Professionals Education Program is a continuing CMOHI initiative, targeting medical students, residents, pediatricians, primary care physicians and nursing staff. It intended to increase knowledge of oral health screening procedures, provide educational materials to use with patients, and develop the ability to make referrals for dental services. This program has grown from a single presentation to a group of 16 physicians and nurses, to a lecture series. In 2007-2008, five lectures on different topics in oral health were given, attracting a total of 118 members of the medical community. In addition, since 2006, CMOHI has produced and disseminated informational materials on oral health care, including useful posters and placards.

Collectively, these strategies created improved conditions for oral health in the Worcester area by directly impacting those most in need of oral health services, the providers of such services, and the policies that were inhibiting the delivery of such services. In addition, the CMOHI experience has yielded valuable lessons for future practitioners and funders of community-based oral health initiatives.

*This program has grown from a single presentation given to a group of 16 physicians and nurses, to a lecture series attracting 118 health professionals.*

## Lessons Learned

In this section we present a summary of the lessons learned in CMOHI, which are described in more detail in the narrative to follow.

### *1. Advocating for changes in oral health policy*

- Focusing advocacy efforts on one or two priority issues at a time is critical in garnering support.
- Educating policymakers about oral health is an important initial step in advocacy.
- Legislation helps in sustaining other programs.

### *2. Increasing oral health care access*

- Supportive legislation is necessary, but alone, is insufficient in recruiting large numbers of dentists to MassHealth, especially those who have negative perceptions based on working with MassHealth in the past.
- Increasing dentists' feelings of ownership of *community* oral health helps increase their participation in MassHealth.
- Targeted investments in community health centers can help them increase and sustain services.

### *3. Providing school based services for underserved children*

- School-based programs contribute to improved oral health of students.
- Coordinating with existing school-based health centers where they exist, and working closely with school administration and other school staff are important strategies.
- Multiple factors influence the rate of parental permission for services and these must be simultaneously addressed through a 'marketing' campaign tailored to each school. No single solution works.

#### ***4. Establishing a dental residency program***

- Graduate residents are likely to remain in the local area and to work in community health.
- Addressing selected conditions that impact the creation of a dental residency program, such as the availability of preceptors, is necessary.
- Designing the oral health residency to match the culture of the medical school setting ensures a smoother integration.

#### ***5. Educating health professionals, including physicians and medical students, about oral health basics***

- Enabling health professionals to find time for oral health education within the medical curriculum requires creativity. Certain issues—such as finding a champion among medical school faculty and using tested and ready-made materials—are essential to support the launch of an oral health education program within a medical school setting.

## The Future of CMOHI

### ***The CMOHI will continue to impact oral health in Central Massachusetts***

Accomplishments of the CMOHI indicate the success of this model in creating programs that will be sustained long term:

- Programs to provide services to children and families in need will be sustained through changes in dental caseload legislation, increased participation by local dentists, improved reimbursement rates and ongoing community support.
- Continued partnerships between school systems, community health centers, and other public entities (e.g., a local health care system – UMass Memorial - and a local community college hygiene program – QCC) will ensure that services will remain integrated and available to students in participating schools.
- A dental residency program will remain in place and based at the University of Massachusetts Medical School.
- The partnership of organizations participating in CMOHI remains committed to working together in the future to continue to address the needs of the community.

As these programs continue, attention will be directed towards emerging challenges that threaten to limit the accomplishments of CMOHI. Leaders of continuing programs will identify and address challenges as they arise, including:

- Analyzing and addressing barriers to care, such as alleviating obstacles to family registration in MassHealth by providing support and creating awareness about enrollment problems
- Deepening the capacity of the residency program to support a second site and through strategies to identify qualified volunteer preceptors
- Continuing to advance the advocacy agenda by providing leadership and support to state and local policymakers by identifying priority legislation

# CENTRAL MASSACHUSETTS ORAL HEALTH INITIATIVE: FINAL EVALUATION REPORT

## Introduction

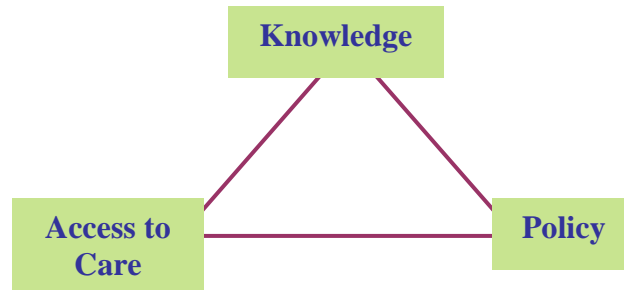
The Central Massachusetts Oral Health Initiative (CMOHI), with generous funding from The Health Foundation of Central Massachusetts (THFCM), as shown in Table 1, and other funders, has led a comprehensive approach to improve oral health in the Worcester area, with the hope of developing a model for oral health initiatives in other communities. Over the course of its eight years in operation, including one planning year, one pilot year and six years of program implementation, CMOHI continually sharpened its focus to concentrate efforts on five key strategies. These strategies signify a comprehensive approach that would lead to sustained, systemic change in oral health, with particular attention to populations most at-risk of receiving inadequate dental care. As a comprehensive approach, these strategies are integrated; the success of any one strategy is enhanced by advancements in another.

**Table 1: The Health Foundation of Central Massachusetts, Grants to CMOHI**

Type of Grant	Fiscal Year	Grant Amount
Implementation Years	2007	\$313,825
	2006	\$367,839
	2005	\$394,725
	2004	\$439,436
	2003	\$454,534
	2002	\$518,089
Pilot Year	2001	\$968,896
Planning Year	2000	\$161,496
<b>Total</b>		<b>\$3,618,840</b>

Since its inception, the CMOHI operated under the leadership of a steering committee, which consisted of leaders from the partnership organizations and headed by the members of an executive steering committee: John Gusha, DMD, Program Director, Mick Huppert, MPH of UMass Medical School, Principal Investigator, Ellen Sachs Leicher, MHA, of ESL Associates, Program Manager, Lorenz Finison, PhD, of Boston University School of Public Health and SigmaWorks, Program Evaluator and Jan Yost, EdD of THFCM, the principal funder. University of Massachusetts (UMass) Medical School provided grant and fiscal administration support.

The five key strategies targeted improvements in community oral health in the context of three basic dimensions: improved access through the expansion of oral health services in health centers, private practices and schools; a skilled and expanded workforce, through the advanced education of health professionals about oral health; and supportive policies at the local and state levels. This is illustrated in Figure 1.



**Figure 1: Three Key Dimensions of CMOHI Work**

The five key strategies included:

- **Advocating for change in oral health policy:** Garnering local, legislative and regulatory support for CMOHI efforts in several areas, with particular attention to policies that impact provider participation in MassHealth.<sup>1</sup>
- **Increasing oral health care access:** Increasing capacity to serve those in need through existing health centers, and through supporting increased participation in MassHealth by dentists in private practice.
- **Providing school-based dental services for underserved children:** Increasing the number of children who receive preventive oral health services, targeting schools with the highest rates of low-income children. Services provided include: oral health education, screening, fluoride varnish, dental sealants and referral for treatment.
- **Establishing a dental residency:** Implementing a high-quality dental residency program within the general medical education curriculum, providing a challenging clinical experience and raising awareness of the great need for oral health services in community health centers.
- **Educating health professionals, including physicians and medical students, about oral health basics:** Educating medical students and health professionals about the need for, and methods of, oral health assessment, education and referral for treatment.<sup>2</sup>

<sup>1</sup>MassHealth is the name of Medicaid programs in Massachusetts.

<sup>2</sup>A parent education program aimed to increase understanding of basic oral health needs among families most in-need through distributing oral health materials and home visits by the Massachusetts Society for the Prevention of Cruelty to Children (MSPCC). This program was phased out in 2003, due to the difficulty of maintaining a knowledgeable staff of outreach workers. An additional program, focused on services to the elderly, was also phased out due to lack of interest on the part of local nursing homes, who had alternative sources of service.

## Evaluation Context

This report is the final evaluation report for the CMOHI. Annual evaluation reports have been presented each year since the first planning year in 2000-2001. This report is principally concerned with reporting on the year 2007-2008 but, where applicable, the report also summarizes data, findings, and program information in previous annual reports.<sup>3</sup> The report is organized around several principal themes of evaluation advanced by Fetterman, adapted for the work of the CMOHI: *Program Development, Adaptability and Accountability, Knowledge, and Sustainability*.<sup>4</sup>

**Program Development-** description of programs and how CMOHI developed and utilized information about needs in the community

**Adaptability and Accountability-** how CMOHI developed and utilized information about changing needs, circumstances, and its own processes and results to retarget and improve strategies and services.

**Knowledge-** what new insights were developed within CMOHI that can be shared locally and with a wider audience of practitioners committed to improving community health, especially in the area of oral health.

**Sustainability-** review of efforts by CMOHI to promote the continued presence and positive impact of its programs and services, beyond the period of THFCM funding.

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<sup>3</sup> Full copies of annual evaluation reports are available online from The Health Foundation of Central Massachusetts.

<sup>4</sup> Fetterman, DM. Foundations of empowerment evaluation. Sage, Thousand Oaks, CA, 2001.

## EVALUATING THE NEED IN CENTRAL MASSACHUSETTS

Despite significant advances in oral health care over the past half-century, children and families across the United States are experiencing an oral health crisis. In fact, the 2000 U.S. Surgeon General’s report on oral health indicated a “silent epidemic” of dental and oral diseases disproportionately affecting disadvantaged children and families.<sup>5</sup> Findings of the National Health and Nutrition Examination Survey (NHANES) are described in previous CMOHI evaluation reports. CMOHI flows from the central proposition that the major correlates of health—and oral health—are race and ethnicity, poverty and educational attainment, linguistic isolation, and other associated social indicators.

The demographics of Worcester County communities illustrated in Figure 2 and the analysis of individual school-level low-income statistics justify concentration on Worcester, Webster, Southbridge, Fitchburg, Leominster and Gardner. The latter three communities and several others are served by the Oral Health Initiative of North Central Massachusetts, funded by THCFM.

Worcester, the largest city in Central Massachusetts (population estimate almost 176,000 in 2006), has failed to implement fluoridation of the public water supply, despite evidence of its effectiveness in reducing risk for oral health problems. Worcester County still lags behind the state average in fluoridation. Only 14 communities are fully fluoridated and only 206,379 (27.5%) of Worcester County residents have access to fluoridated water as compared with 59.3% of all Massachusetts residents. The lack of water fluoridation increases the need for other sources of fluoride, dental screening and treatment services.

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<sup>5</sup>U.S. Department of Health and Human Services. Oral Health in America: A Report of the Surgeon General. Rockville, MD: U.S. Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health, 2000.



Worcester County:

Percentage of the Population Below the Poverty Level, by Census Tract

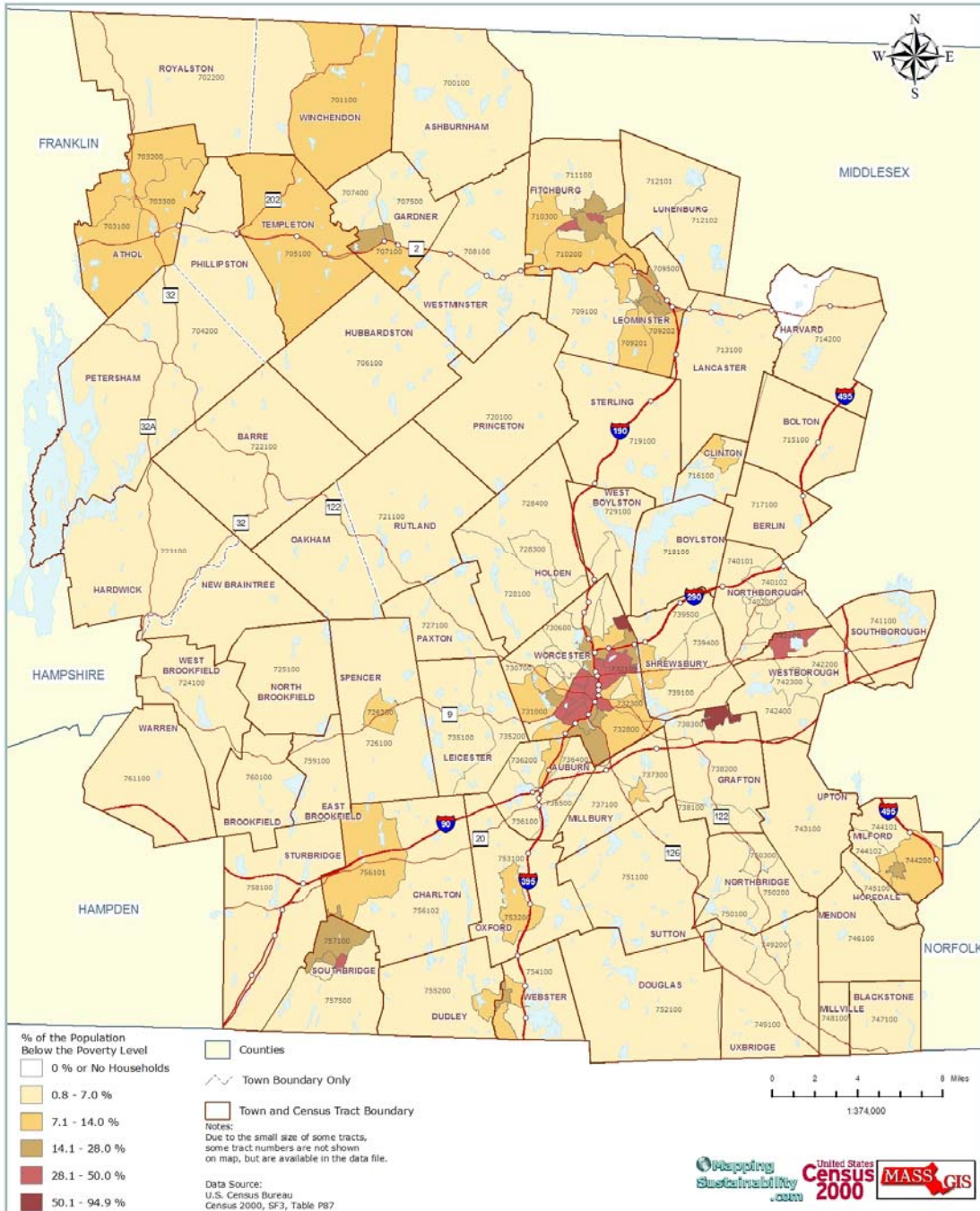
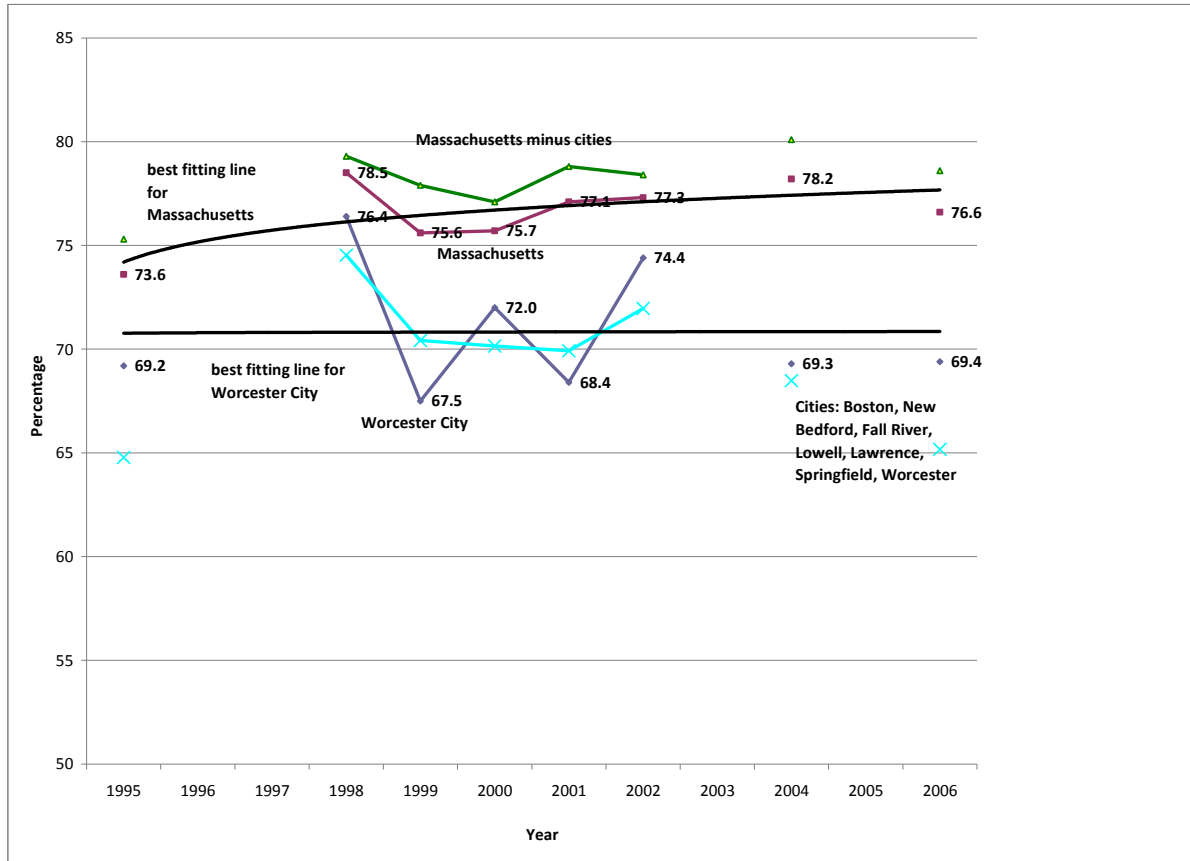


Figure 2: Poverty Rates for Worcester County, by Census Tract

### Access to Oral Health Care - Adults

An analysis of Behavioral Risk Factor Surveillance System Survey data indicates that Worcester city adults are slightly less likely to have had a dental visit in the past year than Massachusetts residents as a whole. The difference is statistically significant in individual years 1999, 2001, 2004 and 2006, and the pattern for the period 1999-2006 as a whole is highly significant.<sup>6</sup> Best fitting trend lines illustrated in Figure 3 demonstrate this pattern. There is no direct evidence of CMOHI impact on these rates.

Worcester city adults are not less likely than Massachusetts adults to have dental insurance coverage. For the period 2000-2001, the most recent period for which data on dental insurance coverage are available, an estimated 67.5 percent in Worcester were insured, while 63.8 percent were insured in the state as a whole. This difference is not statistically significant. It is unknown why Worcester residents are statistically less likely to have a dental visit, while *not* less likely to be insured for dental care.



**Figure 3: Percentage of Adults with a Dental Visit in the Past Year**

<sup>6</sup> Source: Behavioral Risk Factor Surveillance System Survey, Massachusetts Department of Public Health. Accessed from Mass-CHIP v 3.00 r 319, July 28, 2008.

## **Access to Oral Health Care - Children**

Fluoridation, dental sealant application and untreated caries are key oral health indicators. A dental survey conducted in 2003 by the Massachusetts Department of Public Health indicates that schools with lower income students are likely to have a higher percentage with at least one filling, with at least one untreated cavity, with no sealants, and needing emergency care. In general, the lower the income in the school, the lower the proportion of 3<sup>rd</sup>-grade students who have dental sealants (16.8% for students in lower income schools and 36.0% for students in higher income schools). In addition, the lower the income, the higher the number of untreated caries (62.7% in lower income schools and 41.3% in higher income schools).<sup>7</sup>

The findings in the statewide 3<sup>rd</sup>-grade survey provide ample justification for targeting schools within communities that have large percentages of low-income students, for oral health education, screening, fluoride varnish and dental sealant application and referral for treatment as needed.

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<sup>7</sup> See CMOHI 2004-2005 and 2005-2006 evaluation reports.

# THE CENTRAL MASSACHUSETTS ORAL HEALTH INITIATIVE: A RESPONSE TO THE NEED

The Central Massachusetts Oral Health Initiative was conceived by the Worcester District Dental Society in early 2000 in response to the lack of oral health care access in the Central Massachusetts region.<sup>8</sup> Of particular concern were low-income, uninsured children and families, especially those from racial and ethnic minority backgrounds, who lacked access to preventive and restorative oral health treatment.<sup>9</sup>

The initiative identified five specific goals: (1) increasing the number of Massachusetts citizens receiving fluoridated water; (2) increasing legislative and regulatory agency support of policies to increase oral health services to MassHealth and the uninsured; (3) decreasing the number of children with dental caries through education of good oral health practices, the application of sealants, varnishes, and referral to dentists for treatment of caries in an earlier stage of disease onset; (4) increasing the pool of dentists caring for MassHealth members and the uninsured; and (5) increasing the educational level of primary care physicians on oral health screening, advising, and referral.”<sup>10</sup>

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## The CMOHI Partners

The CMOHI is a collaborative effort of key agencies working to make oral health a priority. It is the largest community-based effort to date to address the oral health crisis in Massachusetts. Partner organizations have increased since the pilot phase to represent development of new initiatives in Southern Worcester County and continuing outreach to under-served populations. Partners and other collaborators have included:

Commonwealth of Massachusetts Legislature  
Family Health Center of Worcester  
Great Brook Valley Health Center  
Health Care for All and Health Law Advocates  
Massachusetts Coalition for Oral Health  
Massachusetts Delta Dental Foundation  
Massachusetts Dental Society  
Massachusetts Department of Public Health  
Massachusetts Society for the Prevention of Cruelty to Children (MSPCC)  
Oral Health Initiative of North Central Massachusetts  
Quinsigamond Community College  
South Worcester Neighborhood Center  
Southbridge Public Schools  
Southern Worcester Neighborhood Center  
The Health Foundation of Central Massachusetts  
UMass Medical School's Office of Community Programs  
UMass Memorial Health Care  
United Way of Webster and Dudley  
Webster Public Schools  
Worcester City Council  
Worcester Department of Public Health  
Worcester District Dental Society  
Worcester District Hygienists' Association  
Worcester Public Schools

<sup>8</sup> More information about the CMOHI can be found online at: <http://www.fluoridefacts.org/aboutus.html>  
Information about the primary funder, The Health Foundation of Central Massachusetts, Inc., can be found at [www.hfcm.org](http://www.hfcm.org)

<sup>9</sup> Further detail about the needs addressed by CMOHI can be found in the 2001-2004 evaluation report.

<sup>10</sup> The first goal changed in strategy after the defeat of a referendum to fluoridate the Worcester water supply.

<sup>11</sup> Connell CM, Marczyk G. Central Massachusetts Oral Health Initiative (CMOHI): Pilot Year Evaluation Report, July 2001-August 2002. Accessed October 29, 2008 at: <http://www.hfcm.org/CMS/images/cmohi%20final%20report.november%202002.pdf>

## CMOHI Organization

Following a collaborative model, a steering committee, comprised primarily of providers and community organizations, was formed to provide project oversight. In earlier years, the steering committee met on a monthly basis. Bi-monthly meetings started in October 2003 and continue to the present. These meetings were critical in maintaining open communication in the partnership. Through the steering committee meetings, the partnership made strategic decisions for accomplishing the goals of CMOHI, while still protecting and respecting the individual interests of each partner.<sup>12</sup> Other staff of partner organizations were invited to attend meetings as issues arose requiring their expertise.

In addition to joint efforts, a core group of organizations focused on individual components that make up the initiative (See Table 2) capitalizing on each organization's area of expertise. The University of Massachusetts Medical School provided grant and fiscal administration support for CMOHI. With expertise in administering grants aimed at solving community problems, the Medical School also served as convener and facilitator, bringing together an array of academic experts, oral health professionals, and community leaders to achieve systemic changes in the region's oral health needs.

**Table 2: CMOHI Past and Current Provider Roles**

<p><b>The Health Foundation of Central Massachusetts</b> - Leadership in promoting systemic change</p>	<p><b>Great Brook Valley Health Center</b> - Expansion of dental services and school-based program in Worcester; second residency site; addition of dental lab</p>	<p><b>Commonwealth Adolescent Mobile Oral Health Services</b> - QCC Saturday Dental Clinic, discontinued 2007</p>
<p><b>Worcester District Dental Society</b> - Expansion of auxiliary education at QCC; volunteer participation in KidSeal and other programs; recruitment of dental professionals to participate in MassHealth</p>	<p><b>Office of Community Programs, UMass Medical School</b> - Grant administration; residency program development</p>	<p><b>UMass Medical School, Department of Family Medicine and Community Health</b> - Development and housing of the residency program</p>
<p><b>Family Health Center</b> -Expansion of dental services including South County, first residency site; school-based program in Worcester and South County</p>	<p><b>UMass Memorial Ronald McDonald Care Mobile</b> - School-based program in Worcester</p>	<p><b>Quinsigamond Community College</b> - School-based programs in Worcester public schools and on site at the QCC Dental Clinic</p>

<sup>12</sup> Telephone interview with Mick Huppert, UMass Medical School, July 14, 2008

# CMOHI INITIATIVES

## 1. Advocating for change in oral health policy

**Goal:** To support local, legislative, administrative, and regulatory policies that will increase oral health services to MassHealth members and the uninsured.

### **Objectives/Strategies**

- Respond to the Commonwealth's oral health crisis with specific policy initiatives

### **Program Development**

A major component of CMOHI was attention to policies that affect community oral health services. In November, 2002, representatives of CMOHI and the Oral Health Initiative of North Central Mass (another oral health improvement effort funded in part by THFCM) set a common oral health advocacy agenda. Several of the proposed policy changes focused on increasing the number of dentists participating in MassHealth, making oral health care more available to under-served populations. In 2002, the Massachusetts anti-discrimination laws required that any provider who participated in MassHealth must do so without restricting the number of patients accepted. For many providers, a large influx of MassHealth members to the practice would be a financial strain, given the low rates of reimbursement for their care. As of 2002, many dentists (85%) had opted not to participate in MassHealth, and virtually no dentists in private practice participated.

The agenda identified the following priority areas:

1. Implementing a two-year pilot program in Worcester County to allow dentists to limit their MassHealth caseloads, in an effort to lessen the financial impact of low reimbursement rates on participating dentists.
2. Contracting-out administration of the MassHealth dental program to an experienced Third Party Administrator, able to attract providers into the system.
3. Increasing the MassHealth provider reimbursement levels to encourage more dentists to join MassHealth.
4. Changing the Massachusetts fluoridation laws to provide for increased distribution throughout the state. The statewide Oral Health Advocacy Task Force continues to focus on state-wide legislation to fluoridate water supplies, following the defeat of a local referendum to fluoridate the water supply of Worcester City.

5. Supporting re-enactment of state regulation that limits the sale of junk food and soda during lunchtime in public schools, to prevent the dental decay caused by these foods.<sup>13</sup>

### **Adaptability and Accountability**

Advocacy for state policy was viewed as a potentially powerful strategy for improving oral health in central Massachusetts. Some of the most acute needs specific to the CMOHI area, such as improving services to MassHealth patients, were representative of needs elsewhere in the state. In other instances, needs within central Massachusetts, such as fluoridating public water supplies, had been unsuccessfully targeted through earlier CMOHI strategies, and statewide policy served as another avenue to reach this goal.

Collaboration between CMOHI, the Oral Health Initiative of North Central Massachusetts and the statewide Oral Health Advocacy Task Force (administered through Health Care for All) identified several strategies for enacting policy change. Efforts included: providing education materials to legislators; testifying at public hearings; holding legislative briefings and press conferences; and hosting public “speak-outs” in various communities. The partnership led to substantive policy changes in the following priority areas:

- **Changing the law to enable dentists to “cap” caseloads of MassHealth patients**

Administrative changes to allow dentists to “cap” their caseloads of MassHealth patients were approved as an outside section in the state budget in July, 2005. There is no minimum requirement, leaving the decision of how many MassHealth patients to accept up to individual dentists. CMOHI and North Central Oral Health Initiative have collaborated with Doral to publicize the policy change and recruit dentists to participate in MassHealth through the new third-party arrangement. The target for CMOHI is to enroll 50% of Worcester District Dental Society members in MassHealth by the end of 2008.

- **Implementation of a Third Party Administrator for MassHealth dental benefits.**

The Task Force won legislation in 2004 to seek bids for a Third Party Administrator (TPA) for the MassHealth dental program. A contract with Dental Service of Massachusetts (DSM-parent company of Delta Dental and Doral, the subsidiary responsible for implementing the state contract) was finalized in August, 2006. Doral assumed responsibility as

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<sup>13</sup> Another item, proposed changes to the Massachusetts Good Samaritan Laws to protect volunteer health providers from lawsuits to encourage more dental practitioners to volunteer services, was removed when work began at the state level.

administrator of MassHealth dental benefits as of December, 2006, and began its work by recruiting dentists into MassHealth.

- **Increase in MassHealth dental fees for adult services**

Adult fees for MassHealth dental services have not risen since the 1990s and were expected to be a stumbling block in the enrollment of dentists in MassHealth. Since benefits were not in place for adults for several years, prior to the recently passed reinstatement of benefits, the rates were well below 50% of customary and usual fees. In project year 2006-2007, the Task Force advocated for the creation of a MassHealth dental provider reimbursement reserve account (FY 2008 budget item estimated to be \$12 million) to increase rates for adult procedures. The Task Force also revised a proposal to secure \$2 million in the FY 2008 budget to pilot the new rates in Worcester County.

- **Reinstatement of MassHealth dental benefits for pregnant and new mothers.**

With its partners, CMOHI fostered the filing of and supported “An Act to Improve Oral Health Among Pregnant Women and New Mothers,” which restored benefits to this population beginning on January 15, 2006. This bill was an initial step in building understanding of the association between oral health and overall health. The Senate Budget and Conference committee allocated \$4 million for these benefits and overrode a partial veto by the Governor’s office. As a result, comprehensive dental benefits were restored to 30,000-40,000 women with children aged three and under.

- **Reinstatement of MassHealth dental benefits for all adults**

CMOHI and its partners fostered the filing of and support for “An Act to Restore MassHealth Dental Benefits for Adults,” to restore comprehensive dental benefits to all adults enrolled in MassHealth. The Task Force worked with the legislature to create an Oral Health Caucus, which was chaired by State Senator Harriet Chandler and House Representative Kathleen Teahan. The Legislative Oral Health Caucus educated members of the legislature on the importance of oral health and its connection to overall health. The Caucus develops legislative, budgetary, and regulatory strategies to improve oral health policy in Massachusetts.

The Task Force provided the Caucus chairs with information that they could share with colleagues and held information-sharing meetings throughout the session. The Task Force also mobilized a network of citizens to contact their representatives to request the restoration of benefits.



The Task Force secured an amendment to restore adult dental benefits to the Senate's Healthcare Reform Bill, which was approved in November, 2005. The Legislature's Conference Committee approved the Healthcare Reform bill restoring adult dental benefits in April, 2006. Then Governor Mitt Romney signed the Reform legislation but vetoed the restoration of adult dental benefits. The House and Senate overrode Governor Romney's veto, fully restoring MassHealth adult dental benefits, effective July 1, 2006.

- **Supporting statewide community water fluoridation**

CMOHI sponsored a referendum to provide fluoridation of Worcester City's water supply. This referendum lost in 2001, meeting the same fate as a referendum that predated CMOHI. Although the 2001 referendum met with a smaller margin of defeat, it was judged unlikely that the community would support any future fluoride referenda, even with continued education efforts about the oral health benefits of fluoridation. The Task Force determined that the best alternative to a local referendum would be to support state policy to fluoridate water supplies, and school-based programs that could provide fluoride treatments to young children. In response, the Task Force supported "An Act to Improve Oral Health of Children and Other Residents in the Commonwealth," which authorized a statewide community water fluoridation program. A bill supported by the Task Force was introduced in a legislative hearing in October, 2005 and was referred for further study.

The Task Force decided to seek support for expanding the Massachusetts Department of Public Health's Office of Oral Health and its reinstatement of a fluoridation engineer, as an alternative to re-introducing the statewide fluoridation bill. In project year 2006-2007, the Task Force advocated for the expansion of the department (FY 2008 budget item estimated to be \$750,000) to hire a dentist as the state Dental Director and a community water-fluoridation engineer to assess current systems and assist communities wishing to fluoridate. The Task Force expects to re-file the fluoridation bill in the 2008-2009 session and to continue education and information-sharing to garner support for this bill.

The Task Force has also successfully advocated for MassHealth to reimburse for fluoride varnish treatments and to allow up to three treatments per year, while removing the prior requirements that treatments be at least six months apart. Regulations now allow unlimited treatments per year and have added physicians, who can now bill for fluoride varnish applications. These legislative changes provided support for CMOHI school-based programs, as the six-month wait period

was particularly difficult for programs constrained by the school calendar.

- **Limiting the sale of junk food and soda in public school cafeterias.**

CMOHI collaborated with its partners to endorse “An Act to Promote Proper School Nutrition,” which bans soda and junk food in public schools because of the negative impact on children’s oral health. Following presentations involving CMOHI and THFCM, the Worcester City Council endorsed the bill, followed by an endorsement from the Worcester School Committee in October, 2006. The Massachusetts Public Health Association supported the bill (H. 2168 and S. 1262) in the 2007-2008 Legislative session. Policy efforts at the state level have aligned with changes nationally. In May 2006, the American Beverage Association (chaired by Ralph Crowley of Polar Beverages) announced a voluntary plan to limit sugar-sweetened carbonated soft drinks in the school vending machines.

### **Knowledge**

#### ***Focusing advocacy efforts on one or two priority issues is important***

The statewide Oral Health Advocacy Task Force operated through a network of work groups of its participating members, in quarterly meetings and communicated regularly through email and other web-based tools. This network allowed the Task Force to review its priorities and to provide swift communication with legislators, when necessary.

An important aspect of the work of the Task Force was to narrow the number of issues that were brought to legislators. This approach recognized the broad range of issues that legislators must manage and made it more likely that they would be able to take action. The principle of prioritizing oral health issues for statewide policymakers is replicated in the design of the Oral Health Caucus. The Caucus is a committee steered by members of the state legislature and was launched at the request of the Task Force. In the Caucus, priority oral health bills are selected that will be presented to the entire legislature. The Caucus is believed to be the first of its kind in any state legislature.<sup>14</sup>

#### ***Educating policymakers about oral health is an important initial step in advocacy***

The crisis in oral health is compounded by a general lack of education around the importance of oral health to overall health, a condition that extends to policymakers. The Task Force engaged in an aggressive

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<sup>14</sup> Telephone interview with Jan Yost, THFCM, founding chair of the Task Force, June 30, 2008

campaign to educate state and local legislators about the importance of oral health, and policy changes that could be effective.<sup>15</sup>

***Legislation allows other CMOHI programs to be sustained***

The Health Foundation of Central Massachusetts (THFCM) recognizes legislation as an important strategy for sustaining the best practices it funds.<sup>16</sup> Encouraged by the Task Force, legislation has impacted the revenue streams that are connected to several programs, such as efforts to recruit additional dentists to MassHealth through legislation to cap caseloads and efforts to raise reimbursement rates. Dr. Jan Yost of THFCM stated that programs “need to get close to state legislation or regulation in order to create funding and policies that will sustain the work after it’s initiated.”<sup>17</sup>

**Sustainability**

By design, the Oral Health Advocacy Task Force will continue under the guidance of Healthcare for All, likely turning its focus to other health care issues. The legislative Oral Health Caucus will continue focus on oral health issues. The Health Foundation of Central Massachusetts will discontinue its active participation on the Task Force as its funding priorities shift to other issues.

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<sup>15</sup> Telephone interview with Jan Yost, THFCM, June 30, 2008

<sup>16</sup> Telephone interview with Jan Yost, THFCM, June 30, 2008

<sup>17</sup> Telephone interview with Jan Yost, THFCM, June 30, 2008

## 2. Increasing oral health care access

**Goal:** To increase the number of patients in need of dental care who receive treatment, particularly those in the MassHealth program or who are uninsured.

### **Objectives/ Strategies:**

- Increase the capacity of health centers to provide both paid staff and equipment to provide more dental care.
- Increase the number of dental professionals partnering with health centers to provide dental care in a clinical setting.
- Then, to increase the numbers of dental professionals accepting MassHealth patients into their practices under the Caseload Cap and MassHealth Third-Party Administrator changes resulting in part from CMOHI advocacy efforts.

### **Program Development<sup>18</sup>**

Two types of programs were established at the outset of CMOHI to increase the accessibility to clinical dental care:

- The plan to increase local dentists' care for MassHealth patients consisted of three programs: an initial *Volunteer Program*, followed by a *Partnering Program*, which transitioned to a *MassHealth Recruitment Program*. These represented a progression, moving dentists towards accepting a larger number of MassHealth patients by exposing them to the needs of this population.
- A *Health Center Program*, to enhance the range of preventive and restorative services provided to uninsured patients or participants in MassHealth at three clinical sites: Great Brook Valley Health Center at Quinsigamond Community College (GBV-QCC), Great Brook Valley Health Center at Tacoma Street, and the Family Health Center of Worcester.

### **Adaptability and Accountability**

#### **Plan to increase local dentists' service to MassHealth patients**

The CMOHI engaged in a phased strategy with an overall goal of increasing the number of dentists serving MassHealth patients in Worcester County.

The *Volunteer Program*, whereby volunteer Worcester County dentists provided free care at the QCC dental clinic, operated from 2002 through August, 2004. Over the course of the program 1,317 volunteer hours were provided involving 1,363 patient visits and 2,544 procedures. An important

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<sup>18</sup> In 2001-2002, the pilot year for CMOHI included a goal of improving oral health in the elder population through the acceptance and use of fluoride. This program was suspended before the completion of the pilot year, in order to devote more resources to other efforts, and due to the conclusion that nursing home providers had other sources of service for their residents.

outcome of the Volunteer Program was to raise the awareness of dentists in private practice of the severe dental problems that existed in a population they do not typically encounter. At the inception of the CMOHI, there were many barriers to dentists adding MassHealth patients to their practices. Chief obstacles included anti-discrimination policies that made it illegal for dentists to place a limit on (cap) the number of MassHealth patients they would treat, an inefficient administrative system for processing approvals and claims and low reimbursement rates for services for MassHealth patients. Through the fall of 2004, 46 practitioners had participated in the program. Eleven volunteers contributed over half of all hours. By 2005 the volunteer force had grown to sixty. Scheduling problems at the GBV/QCC dental clinic were a significant challenge, which limited the likelihood of dentists providing volunteer services during the weekday. While the *Volunteer Program* provided some exposure to the MassHealth population, CMOHI began to work towards a long-term, sustainable strategy for improving provider participation.

As an intermediate step, a *Partnering Program* was begun to focus on recruiting dental professionals to partner with health centers to provide dental services to patients covered under MassHealth. The aim of the Partnering Program was to ultimately transition these dentists to full participation in MassHealth, coordinated with state policy changes to reduce the burden of managing reimbursements and billing on private practices. Dentists who were originally recruited as volunteer service providers were offered the opportunity to see MassHealth patients in their own practices, with the Health Centers overseeing reimbursements and billing. All volunteer dentists were approached as well as others who program administrators believed might have an interest in the program. A multi-tiered recruitment plan targeted these dentists through mailings, personal visits and phone calls, and advertisements. Some rejected the idea, stating negative past experiences with MassHealth, even though dentists would deal directly with their partnering community health center and not with MassHealth.

The Great Brook Valley Health Center Partnering program had 9 dentist-partners since July, 2006. The partners saw 147 patients with a total of 474 visits.<sup>19</sup>

These two programs laid the foundation for the launch of a third phase, the *MassHealth Recruitment Program*, which began in 2006-2007. This program recruited dentists to admit MassHealth patients into their private practices.

Doral Dental USA was selected as the Third Party Administrator by the MassHealth dental program. Leadership of CMOHI met with representatives

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<sup>19</sup>Email communication, John Hess, November 6, 2008.

from Doral Dental several times to identify strategies to recruit dentists and to align CMOHI efforts with Doral recruitment efforts.

The Doral Dental program started in February 2007. The CMOHI organized presentations and discussions around the “new” MassHealth, as administered by Doral. The goal of CMOHI was to have 157 dentist members of the Worcester District Dental Society participating in MassHealth at the end of 2008 (50% of practicing member dentists). As of September, 2008, 188 Worcester County members had been successfully recruited into the program. This represents a marked change in the number of dentists in Worcester County who participate in MassHealth, as illustrated in Table 3.

**Table 3: Worcester County Dentists Participating in MassHealth**

Town	11/1/2006 <sup>20</sup>	9/23/2008
Auburn	N/A	3
East Douglass	N/A	1
Holden	3	5
Leicester	N/A	2
Milford	3	15
Millbury	N/A	1
North Grafton	N/A	1
Northborough	N/A	5
Worcester	29	129
Oxford	1	1
Rutland	N/A	1
Paxton	1	0
Shrewsbury	4	5
Southborough	1	0
Southbridge	1	5
Sturbridge	N/A	2
Uxbridge	N/A	1
Webster	1	2
West Boylston	N/A	2
West Brookfield	N/A	1
Westborough	1	6
<b>Total</b>	<b>45</b>	<b>188</b>

An extensive process was employed to recruit dentists to participate in MassHealth, or to expand their participation. Recruitment was necessary to communicate the legislative changes that would make participation in MassHealth more appealing to dentists, and to overcome the longstanding distrust held by many dentists of the MassHealth system.<sup>21</sup>

<sup>20</sup> In towns noted as “N/A” data was not available for November 2006 or may have been zero.

<sup>21</sup> Telephone interview with John Gusha, July 17, 2008

Included in these efforts, were presenting MassHealth information at several WDDS meetings, phone calls, a letter of encouragement from State Senator Harriet Chandler, personal visits by practicing dentists and hygienists to dental practices in the local area, and encouragement from patients within a dentist's own practice for the dentist to serve the MassHealth population.

The resulting increase in the number of dentists participating in MassHealth represents a dramatic success of the initiative. The increased number of dentists providing service will likely increase the number of families and children receiving regular dental care and contribute to their improved oral health.

#### Health Center Program

Two Worcester-area health centers participated in the health center program of CMOHI: the Family Health Center of Worcester (FHC) and the Great Brook Valley Health Center (GBVHC). Centers provided similar dental care services. Over the course of CMOHI, data was collected on the number of services provided by these health centers: over 335,000 dental patient visits were recorded at health centers during the initiative. The number of dental patient visits at each health center has grown markedly since the launch of CMOHI. Dental visits to FHC have grown from a monthly average of 700 in 1999 to 1,417 in 2008. At GBVHC, the monthly average of dental patient visits has grown from 1,122 in 2000 (the first year with available data) to 2,138 in 2008.

The number of dental patient visits to the CMOHI health centers has decreased in recent years following the steady growth in the first years of CMOHI; visits to the Family Health Center peaked in 2004 and to GBVHC in 2006. Several factors may affect the trend in visits:

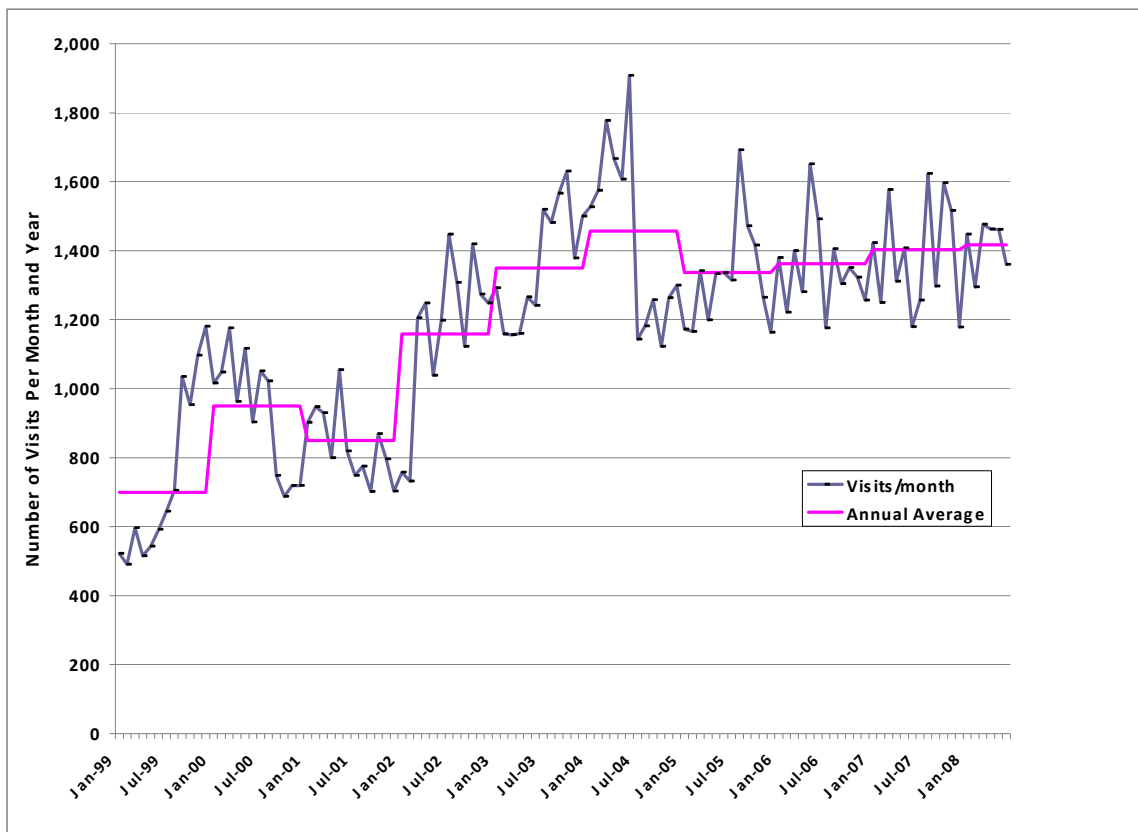
- CMOHI school programs seek to connect students in participating schools to a dentist as a regular provider. The number of students who have been served through CMOHI school programs may have led a portion of these students to receive services from private dental practices rather than from community health centers.
- Staffing at the health centers directly impacts the number of patients who may be served. In recent years, each of the health centers has reported vacancies in their dental staffs that could have contributed to the reduction in visits.
- The opening of a private dental clinic, Small Smiles, has created an additional source of dental care in the community. Small Smiles provides services to MassHealth patients exclusively. Small Smiles recorded an average of 1,550 visits per month in calendar 2007, and an average of 1,799 visits in the first eight months of 2008.
- The reduction in number of visits to the community health centers may indicate an overall improvement in oral health of the community

served by CMOHI. As a result of earlier visits and services, patients may be experiencing fewer oral health problems that would require a visit to a health center, although there is no direct evidence on this connection.

- The addition of new dentists who are now participating in MassHealth may reduce the number of patients seeking services through participating health centers. MassHealth patients may now seek service through these private practices.

### Family Health Center Dental Services

The Family Health Center (FHC) of Worcester’s Dental Department delivers dental care services as a component of comprehensive health care. Several staff at FHC are multi-lingual, which enhances the provision of service to all members of the local community.



**Figure 4: Family Health Center of Worcester Dental Visits**

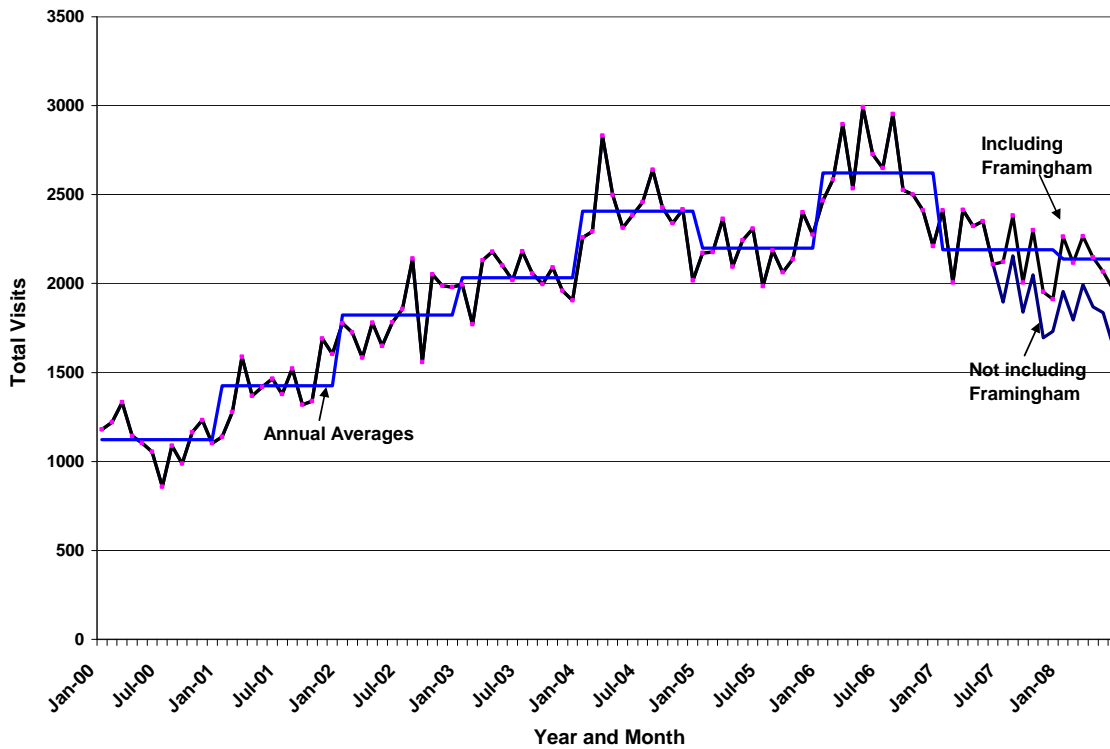
FHC has seen growth in dental services since the beginning of CMOHI (See Figure 4). The first years of the initiative, from 2001 until June of 2004, were marked by a steady increase of visits, with a peak of over 1,600 in monthly visits achieved in April-June, 2004. The rapid decline in the number of visits immediately following June 2004 was attributed by center dental administration to the loss of a full-time hygienist and other support



staff. The annual average number of monthly visits in the July 2007-June 2008 year was 1,414, up slightly from 1,330 in 2006-7 and 1,396 in 2005-6.

**Great Brook Valley Health Center**

The GBVHC serves patients throughout Central Massachusetts and in 2007 began to provide dental services through an office in Framingham. The GBVHC provides comprehensive services and multilingual interpreter services in several languages.



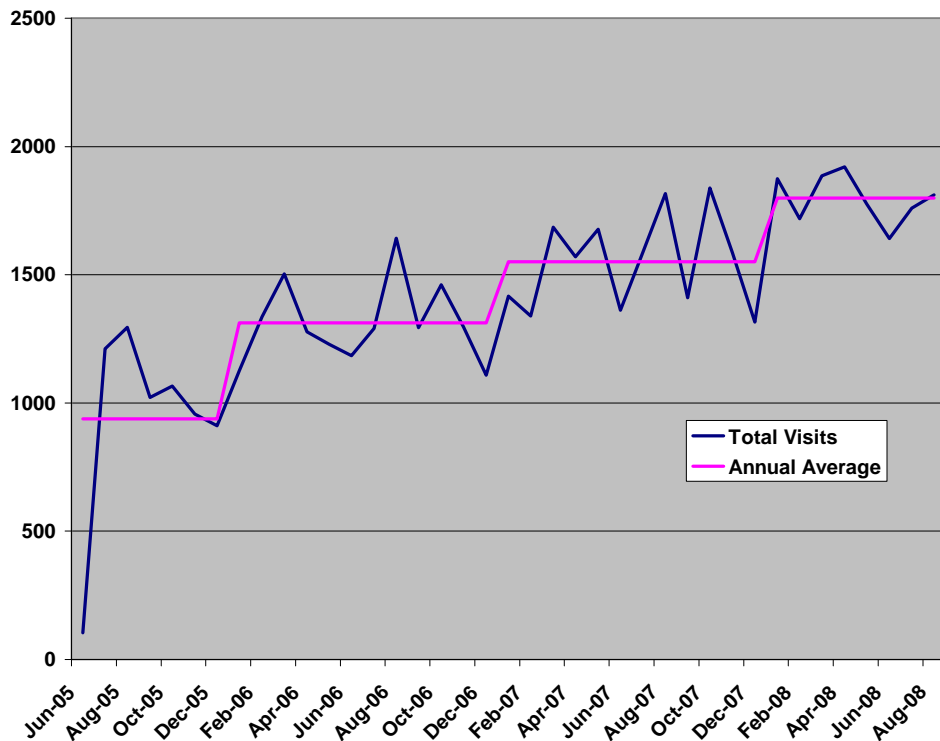
**Figure 5: Great Brook Valley Health Center Dental Visits**

GBVHC experienced steady annual growth in the number of dental patient visits between 2001 and 2005, and several peaks and valleys since then. In 2007, a new clinic was opened to extend services to patients in Framingham. The most recent year shows a decline in dental visits. The decline is more pronounced when the Framingham clinic visits are excluded, as shown in Figure 5. A likely factor in the decrease in visits in 2007 and 2008 was the loss of dental care providers. Since 2007 the GBVHC has had staffing vacancies that would contribute to a decrease in dental patient visits.

**Small Smiles Dental Center**

In addition to the two health centers, The Small Smiles Dental Center opened in Worcester in June, 2005. This proprietary clinic provides services

exclusively to children and young adults in families covered by MassHealth. Since opening, the monthly average number of services provided has increased each year (See Figure 6). The three centers (Small Smiles, FHC and GBVNC) serve the same community of clients. As a result, the increasing number of services provided by Small Smiles may be linked to an unknown degree to decreases in the number of services reported by CMOHI partner health centers and school programs.



**Figure 6: Small Smiles Dental Center Dental Visits**

***Knowledge***

Increase local dentists’ service to MassHealth patients

***Strategies to increase participation of dentists in MassHealth must help dentists feel ownership of community oral health***

Few dental care providers in the Worcester County area are exposed to the oral health crisis. For dentists, their perspective of community oral health is derived from the patients they see in their own practices, and, at the outset of CMOHI, very few dentists accepted MassHealth patients.

The phased strategy employed by CMOHI to move dentists from volunteering to partnering and then to participating in MassHealth, was successful in cultivating a sense of ownership within the Worcester District Dental Society of the community’s oral health needs. This was important step given the limited exposure to the MassHealth population of most independent dental practices. The volunteer program was an effective

vehicle for improving awareness of the need for dental health services. With continued exposure to the oral health care crisis in their communities, more dentists were moved to participate and help provide care.

A program that allows dentists to determine their own levels of MassHealth participation, was thought to be a preferential strategy to alternatives, such as a state mandate that would require dentists to provide MassHealth service. Such an alternative strategy would be difficult to implement and sustain. By building ownership and awareness of the issues, leaders within CMOHI believed that dentists would be more likely to participate in the MassHealth program.<sup>22</sup>

***Supportive legislation is necessary, but alone, not a sufficient condition for recruiting large numbers of dentists to MassHealth.***

As noted above, efforts to recruit dentists to MassHealth were coordinated with advocacy for policy changes that would remove existing barriers to participating in MassHealth. The large amount of credentialing paperwork required by MassHealth was further disincentive to enlist. The statewide Oral Health Advocacy Task Force, coordinated by Health Care For All, played a key role in introducing legislation that would later be passed to allow dentists to place a limit, or “cap” on their MassHealth caseloads, the hiring of a Third Party Administrator (TPA) and an increase reimbursement rates of services to children.

Legislative change made it more likely that dentists would participate in MassHealth, but additional activities were necessary. At the outset of CMOHI, in Massachusetts, there was long-standing mistrust of MassHealth on the part of a significant portion of the dental community.<sup>23</sup> Overcoming these sentiments required not only removal of the legislative obstacles that made participation costly and burdensome, but also strategies for building confidence and trust in MassHealth.

In CMOHI, a primary strategy to overcome these barriers was to communicate directly with dentists through multiple individual contacts in addition to presentations to the Worcester District Dental Society. Dental professionals, such as Dr. Gusha and his staff, and other CMOHI partners would contact dentists, and appeal to them to provide service to the at-risk community. CMOHI also offered assistance in filling out the Doral paperwork and a representative from Doral assisted in follow-up calls and office visits.

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<sup>22</sup> Telephone interview with John Gusha, July 17, 2008

<sup>23</sup> Telephone interview with John Gusha, July 17, 2008

## Health Center Program

### ***Targeted investments in family health centers can help them remain viable.***

Funding to the participating Health Centers was believed to have made the greatest impact when it targeted improvements in the management of the practice by providing access to outside expertise.<sup>24</sup> For the Health Centers, assistance in managing schedules through the purchase of appropriate dental practice software and training on this software, addressed the issue of maintaining a schedule even when a high portion of health center dental appointments were not kept and there was no way of recouping lost revenue. Relatively little investment was needed in the infrastructure or expanding capacity to see patients in these locations; rather investments targeted improving the efficiency of these services and the capability to obtain reimbursement.

### **Sustainability**

Efforts to sustain expanded access to oral healthcare were closely tied to the passage of legislation previously described that supported participation in MassHealth.

The phased dentist recruitment program increasingly engaged the community of dentists as part of programs to improve community oral health.

After eight years of CMOHI programs, there is evidence of the ongoing influence of their efforts to improve access to oral health services. Community oral health issues have been placed in the forefront of the Massachusetts Dental Society, which has strongly recommended that its members accept MassHealth patients. As participation in MassHealth expands, it is expected to establish an even better platform for dental practitioners to continue creating favorable conditions for service to the community.

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<sup>24</sup> Telephone interview with John Gusha, July 17, 2008

### 3. Providing school-based dental services

**Goal:** To increase the numbers of underserved children who are screened, have topical fluoride and sealant applications, are provided with oral health education and are referred for care at an early stage of disease when clinical care is needed.

**Objectives:** to increase:

- Screening for caries and sealant need
- Dental exams
- Prophylaxis – teeth cleaning
- Fluoride varnish or gel treatment
- Sealant application if no family dentist is available
- Oral hygiene education and instructions
- Referral for further dental care as needed

#### **Program Development**

##### ***Targeting services to schools with the highest rates of at-risk children***

The CMOHI developed an effective strategy for targeting school-based services to meet the areas of greatest need. The data from the 2003 statewide oral examination of 3<sup>rd</sup>-grade students was used by CMOHI to identify which schools to target for oral health services. Of the top 16 schools in need in Worcester County, as defined by highest concentrations of children in poverty, all are in Worcester City and all were serviced by CMOHI partner organizations. Services were rendered through four providers: the Family Health Center of Worcester, the Great Brook Valley Health Center, the Quinsigamond Community College (QCC) Dental Hygiene program, and the UMass Memorial Ronald McDonald Care Mobile. These four providers partnered with 28 schools in Worcester County including student enrollments of 11,174 students in grades pre K-6. Through CMOHI school-based programs, access is available to a variety of dental services, including screenings, fluoride varnish and gels, dental sealants and referrals.<sup>25</sup> Each partner provided services in a unique manner.

The number of schools and students served through school-based program continually increased over the course of CMOHI as seen in Table 4.<sup>26</sup>

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<sup>25</sup>Fluoride mouth rinse was provided during the early years of the program, by the QCC and Care Mobile partners, but discontinued in favor of fluoride varnish due to the frequent disruptions caused by frequent fluoride rinse applications.

<sup>26</sup> In 2001-2002, CMOHI programs targeted 2<sup>nd</sup> and 3<sup>rd</sup> grade classrooms and then expanded into additional schools and grades.

**Table 4: CMOHI School Programs, 2001-2008**

Program Year	Total Number of Participating Schools	Total Number of Students in Participating Grades	Total Number of Students Who Received Service
2001-2002	14	N/A <sup>27</sup>	438
2002-2003	16	3,309	2,310
2003-2004	19	3,898	2,441
2004-2005	24	7,499	2,680
2005-2006	24	9,666	4,128
2006-2007	25	10,606	4,226
2007-2008	28	11,174	4,423

**2007-2008 School Year Program Summary**

Services for 28 Worcester County schools were provided by four different programs in 2007-2008: UMass Memorial Ronald McDonald Care Mobile (14 schools), Quinsigamond Community College (QCC) Dental Hygiene program (8 schools), Family Health Center Worcester (4 schools – 2 each in Worcester and Webster) and Great Brook Valley Health Center (2 schools).

**Table 5: CMOHI School Programs, 2007-2008**

CMOHI PARTNER	SCHOOLS	STUDENT ENROLLMENT	RETURNED PERMISSION	PERCENT RETURNED PERMISSION	POSITIVE PERMISSION	PERCENT POSITIVE PERMISSION OF TOTAL RETURNED	PERCENT POSITIVE PERMISSION OF TOTAL STUDENT ENROLLMENT	AT LEAST ONE SERVICE
Care Mobile	14	6,549	4,007	64.5	2,818	70.3	45.4	2,256
QCC	8	1,696	1,263	74.5	1,020	80.8	60.1	1,286
FHC	4	1,555	914	58.8	735	80.4	47.3	735
GBV	2	1,374	696	69.6	222	31.9	16.9	146
All programs	28	11,174	6,880	61.6	4795	67.6	42.9	4,423

The programs, over the life of CMOHI, provided various combinations of prevention services, including fluoride mouth rinse, varnish and gel applications, dental sealants, oral health education and screening to

<sup>27</sup> The total number of students in participating grades is not known for 2001-2002. Data was collected on the number of eligible students, determined by their MassHealth status and parental permission. In 2001-2002, there were 903 eligible students to receive services through CMOHI.

students in selected grades at participating schools. In addition, students were referred for further treatment when needed. Each program partner tailored the school outreach to their own needs, and to the individual school needs in the partnership. Table 5 shows the highest level summary of program results, and demonstrates considerable program to program variation. In subsequent sections we describe individual program results.

Among the four programs, the number of students enrolled in participating grades increased steadily each year since the 2005-2006 school year:

- 2005-2006 - 9,666 enrolled in 24 schools;
- 2006-2007 - 10,606 students enrolled in 25 schools; and
- 2007-2008 - 11,174 students in 28 schools.

The key bottlenecks in increasing service delivery was: (1) parents returning permission forms, and (2) parents returning those forms marked “positive” - agreeing to student treatment.

Of the total number of enrolled students, 6,880 returned permission forms in 2007-2008, representing a continuing decrease in the overall rate of returned permissions and in the rate of positive permission forms:

- 2005-2006 - 65.1% returned permission forms, of which 76.6% were positive;
- 2006-2007- 65.0% returned permission forms, of which 70.2% were positive; and
- 2007-2008 - 61.6% returned permission forms in, of which 67.6% were positive.

It is not clear why overall permission return rates have declined, and why the percentage of positive among those returned has declined as well, despite program providers efforts to improve on both of these indicators. The rate of parental permissions returned varied between the four programs, between the schools served in each program, and within any given school, varied markedly among teachers. A complete accounting of parental permission returns for all schools and classrooms may be obtained from the senior author of this report.

Assuming that non-returners of the permission forms have the same percent positive and negative as returners, approximately 2,700 students were “missed” in the recruitment process that might have otherwise had permission to participate. While this gap is well within the range of some of the benchmarking programs examined in past years, it presents a continuing opportunity for improvement.

Providing teacher “incentives,” a major push in the past two years appears not to have worked. Teachers and project staff are convinced that only a full “campaign” based on the different characteristics of the teachers and students in each school is likely to increase these rates, if they can be increased at all.

The number of students who received at least one service increased to 4,423 in 2007-2008 from 4226 in 2006-2007.

The increase in the number of students served in the last year by CMOHI partners despite the small decrease in parental permission *rate* appears to be due to the increase in the number of schools served, and thus the number of potential students to be served. This result suggests that increasing student oral health services has been purchased at the cost of going to more schools, rather than increasing the yield at current schools. One possible explanation is that as more schools were added, these tended to be schools with a lower free and reduced lunch indicator, thus less need for free or supported services.

### **Quinsigamond Community College (QCC) Varnish and Sealant Programs *Schools served***

QCC operated programs in eight Worcester Schools during 2007-2008 school year: Burncoat, Chandler Magnet, Grafton Street, Lakeview, Lincoln Street, McGrath, Union Hill and Vernon Hill. The results of these efforts are summarized in Table 6.

The percent of returned permission forms and the rate of positive returns dropped slightly from the previous school year. In 2006-2007, 76.6% of permission forms were returned, and 80.8% of returned forms were positive.

Almost all students who returned positive permissions received two varnish applications. QCC programs, as all CMOHI programs, are remarkably effective in getting preventive services to students who have permission to participate.



**Table 6: QCC Fluoride Varnish Program Results**

Category	Summary Statistics: 2007-2008
Schools: Burncoat, Chandler Magnet, Grafton Street, Lakeview, Lincoln Street, McGrath, Union Hill, Vernon Hill	Total schools: 8
Students given a permission form	1,696
Students returning permission forms (positive or negative)	1,263
Percent returning permission forms	74.5%
Students returning positive permission	1,020
Percent returning positive permission of total returned forms	80.8%
Yield- percent positive permission of all enrolled students	60.1%
Number of children receiving varnish two times	957
Percent receiving varnish two times, of those with positive permission	93.8%

***Oral Health Assessment, Education and Sealant Application Program***

QCC offered the oral health assessment, education and sealant application program to 2<sup>nd</sup> and 6<sup>th</sup> grade students in the same schools that participated in the varnish application program. The results are shown in Table 7. Of those students who were screened, 76.3% were given an average of 4.0 sealants per student.

**Table 7: QCC Sealant Program Results**

Category	Summary Statistic 2007-2008
<b>Schools: Burncoat, Chandler Magnet, Grafton Street, Lakeview, Lincoln Street, McGrath, Union Hill, Vernon Hill</b>	<b>Total schools: 8</b>
Students given a permission form	646
Students returning permission forms (positive or negative)	482
Percent returning permission forms	81.2%
Students returning positive permission	329
Percent returned positive permission of total returned forms	70.8%
Yield- percent positive permission of all enrolled students	50.7%
Students receiving screening	329 <sup>28</sup>
Students receiving sealants	251
Number of sealants provided	1,017
Students receiving fluoride varnish	321
Students receiving oral health education	329
Students with at least one decayed tooth	160
Students with an abscess or infection	4.0
Students with at least one restored tooth	125

### **Family Health Center**

The Family Health Center of Worcester worked with four schools: Goddard School and Woodland Academy in Worcester, and Park Avenue and Webster Middle schools in Webster. The program provided screening, oral health education, placement of sealants and referrals as needed.

In 2007-2008, virtually all students who returned positive permission received oral health education services in the Family Health Center programs. The number of students who received sealants in 2007-2008, however, decreased to 30 from 91 in 2006-2007. The number of sealants provided in 2007-2008 decreased sharply to 113 from 694 in 2006-2007, as the number of sealants provided per student also dropped in 2007-2008. Results are shown in Table 8.

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<sup>28</sup> Note that the number of positive permissions and the number of students screened are the same. It is not likely that this should occur. It is more likely that this results from the manner in which positive permissions were tallied. Nevertheless, historically, there is a high correlation between positive permission and service delivery.

**Table 8: Family Health Center Results**

Category	Summary Statistic, 2007-2008
<b>Schools: Park Avenue, Webster Middle (Webster); Goddard, Woodland Academy (Worcester)</b>	<b>Total schools: 4</b>
Students given a permission form	1,555
Students returning permission form (positive or negative)	914
Percent returned permission forms	58.8%
Students returning positive permission	735
Percent returned positive permission of total returned forms	80.4%
Yield- percent positive permission of all enrolled students	47.3%
Students receiving screening	735
Students receiving sealants	30
Number of sealants provided	113
Students receiving oral health education	735
Students with at least one decayed tooth	272
Students receiving cleaning	216
Students with at least one restored tooth	125

**UMass Memorial Ronald McDonald Care Mobile Unit**

The UMass Memorial Ronald McDonald Care Mobile Unit served fourteen schools in CMOHI during the 2007-2008 school year: Abbey Kelley Foster Charter School, Arts Magnet School, Belmont, Canterbury, Chandler, City View, Clark Street Community, Columbus Park, Elm Park, Gates Lane, Jacob Hiatt, Quinsigamond, Rice Square and Seven Hills Charter School. Service to the Arts Magnet School and Rice Square was added in 2007-2008.

The Care Mobile provided a range of preventive dental services, including: evaluation/screening, cleaning, dental hygiene education and support, x-ray, sealants, topical fluoride varnish, and referral for complex dental treatment as indicated in Table 9.

The Ronald McDonald Care Mobile remains the largest school-based program in the number of schools and students served. The yield statistic on positive permissions (45.4% of all students enrolled), however, demonstrates that there are improvements to be made in this process.

**Table 9: Ronald McDonald Care Mobile Results**

Category	Summary Statistics: 2007-2008
Schools: Abbey Kelley Foster Charter School, Arts Magnet School, Belmont, Canterbury, Chandler, City View, Clark Street Community, Columbus Park, Elm Park, Gates Lane, Jacob Hiatt, Quinsigamond, Rice Square, Seven Hills Charter School	Total schools: 14
Students given a permission form	6,549
Students returning permission form (positive or negative)	4,007 <sup>29</sup>
Percent returned permission forms	64.5%
Students returning positive permission	2,818
Percent returned positive permission of total returned forms	70.3%
Yield- percent positive permission of all enrolled students	45.4%
Students receiving screening	2,376
Student receiving sealants	1,527
Number of sealants provided	8,402
Students receiving fluoride varnish	2,621
Students receiving oral health education	2,783
Students with at least one decayed tooth	1,082
Students with at least one restored tooth	1,071

**Great Brook Valley Health Center**

The Great Brook Valley Health Center (GBVHC) served two elementary schools in Worcester during the 2007-2008 school year: Norrback Avenue School and Roosevelt School. Services were offered to students in pre-school through 6<sup>th</sup> grade. The GBVHC program provided the following dental services: exams, prophylaxis, fluoride treatment, fluoride varnish treatment, sealants, oral hygiene education. In 2007-2008, school-based dental restorative treatments were often provided by residents from the UMass residency program. Program results are outlined in Table 10.

The manager of school oral health programs at GBVHC noted that a new model for service was implemented this past year in an effort to improve services and increase personnel retention.<sup>30</sup> Each school program provided services on a specific day of the week at each school. Services continued

<sup>29</sup> Note that data for Columbus Park school did not include the number of negative returned permissions. The percentages and totals for “Total students returning form” and “Percent returned permission forms” were calculated based on the number of positive returns for that school. Other data from Columbus Park, including the number of positive permissions and services, were complete.

<sup>30</sup> Telephone interview with Lizette Yarzebski, August 27, 2008; emailed memo, *Great Brook Valley Health Center, School Based Dental Program 2007-2008. Summary Provided by Great Brook Valley Health Center Staff*, received August 29, 2008.

throughout the school year. The predictability of this schedule represented a shift from earlier efforts of longer less frequent visits to each school. The advantage of this new model is that it allows care providers to follow up with students whose permissions were incomplete or when other obstacles occurred, because the program might continue to work with that student and their family the following week.

**Table 10: Great Brook Valley Health Center Results**

Category	Summary Statistics: 2007-2008
<b>Schools: Norrback Avenue, Roosevelt</b>	<b>Total schools: 2</b>
Students given a permission form	1,374
Students returning permission form (positive or negative)	696
Percent returned permission forms	53.0%
Student returning positive permission	222
Percent returned positive permission of total returned forms	31.9%
Yield- percent positive permission of all enrolled students	16.9%
Students treated	191
Percent treated of those with positive permission	86.0%
Students needing sealants	95
Student receiving sealants	65
Number of sealants provided	112
Students with at least one decayed tooth	78
Number of cavities	273

The number of students receiving services increased to 191 in 2007-2008 from 185 in 2006-2007.

### **Adaptability and Accountability**

#### ***Obtaining support from the school superintendent***

At the outset of CMOHI, the Worcester School Superintendent was reluctant to support school-based programs that offered oral health services during the school day.<sup>31</sup> Time taken for oral health care services was assumed by the superintendent to reduce the amount of time students and teachers would have to focus on core academic subjects.

CMOHI partners and leadership overcame this reluctance by building support for the program among local stakeholders. Among these stakeholders were local politicians, such as school committee members, the mayor, and other elected officials who were supportive of CMOHI programs.

<sup>31</sup> Telephone interview with Ellen Sachs-Leicher, June 30, 2008

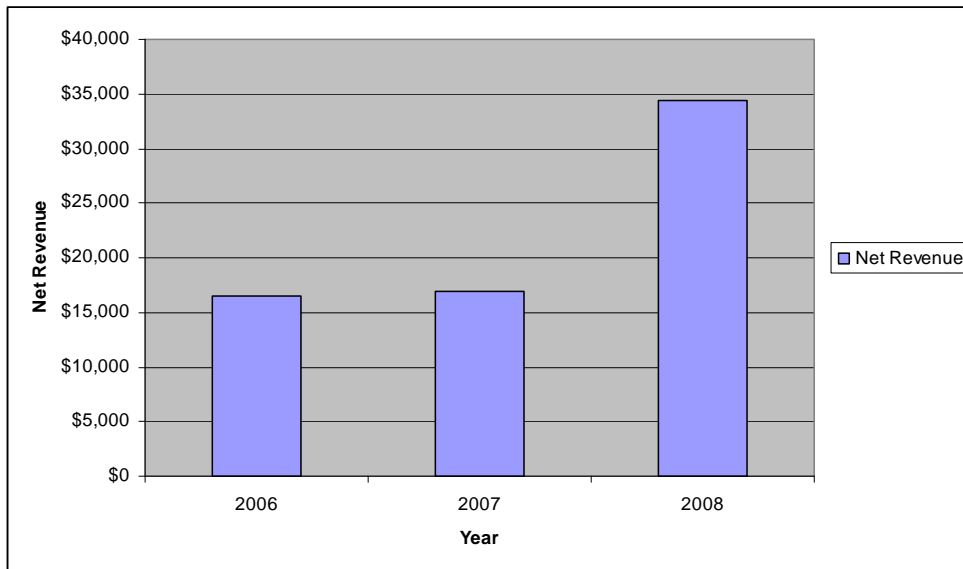
In addition, two of the four school-based programs were already present in schools and providing some level of dental services, which demonstrated that such services could be offered in coordination with the academic program.

As a result of these efforts, the superintendent allowed CMOHI programs to operate inside of the schools during the school day. The superintendent assigned oversight of the CMOHI programs to a member of the central office, which provided continuing support of the programs throughout the life of the grant.

***Efforts to attain reimbursements through MassHealth to increase program revenues***

The leadership of CMOHI encouraged school programs to take steps to increase program revenues through recouping reimbursements from MassHealth (See Figure 7).

**Figure 7: Net Revenue for QCC Sealant Program, 2006-2008.**



The QCC program is an example of the success of this strategy. In the QCC program a consulting biller was hired in 2005 at the recommendation of CMOHI leaders. The consulting biller was responsible for completing the necessary paperwork and administrative follow through to obtain MassHealth reimbursements. Since the addition of the third party biller, revenues for QCC school-based programs increased steadily, with net revenue totaling \$87,000 through 2008.

The QCC program has the additional benefit of using dental hygiene students to provide school-based services at no charge. An estimate of the

value of their labor is \$16,200 for the year in 2008.<sup>32</sup> The total of reimbursements and dental hygiene student services should sustain services in schools after the suspension of CMOHI funding.

### ***Response to scientific evidence in support of fluoride varnish application***

Recent statements and research have been produced by the Centers for Disease Control and Prevention, the National Institutes of Health, several independent researchers, and the Association of State and Territorial Dental Directors. The ASTDD published a research brief based on a review of existing evidence for fluoride varnish programs, especially in community-based settings.<sup>33</sup> Gel and varnish are believed to be as effective as, or more effective than, fluoride rinse.

Since 2004, CMOHI partners who were using fluoride rinse have dropped this form of application. Fluoride varnish requires fewer applications resulting in greater efficiency and possibly wider coverage among school children. These attributes make fluoride gel or varnish particularly suitable for programs providing services to highly transient child populations, such as those served by CMOHI partners.

One challenge that emerged in the switch to fluoride varnish, was the increased administrative burden, especially initially. Monica Lowell, of the Care Mobile program, reported that the change in service required administrators to adapt to a new billing procedure and created an increased amount of paperwork. Even given these administrative challenges, Lowell reported that it was worthwhile for the oral health advantages gained.<sup>34</sup> Pauline O'Brien, also of the Care Mobile program, noted that the change to fluoride varnish allowed students to spend more time in class than with rinse applications and reduced the burden on school and dental staff.<sup>35</sup>

### ***Efforts to increase returns of parental permissions***

Data obtained over several years of CMOHI has shown that the key bottleneck to increased service provision was the rate of parental permissions forms returned. "Permissions obtained" is a "leading indicator" because it is measurable very early in the program process. Permissions obtained is the principal element that must be controlled to maximize program efficiency. Analysis of program-level, school-level and teacher-level data indicated that there was significant variation at all levels. This is not "random" variation.

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<sup>32</sup>Email communication, Joyce Cooney, October 10, 2008.

<sup>33</sup> Summarized in CMOHI Evaluation report for 2005-2006.

<sup>34</sup> Telephone interview with Monica Lowell, August 19, 2008

<sup>35</sup> Telephone interview with Pauline O'Brien, September 4, 2008

The CMOHI continuously re-examined strategies to increase the return of parental permissions. Several changes were incorporated into the parental permission process of each service provider since the inception of the initiative.

- Until 2004-2005, the permissions process was handled by individual teachers in the schools.
- In the 2005-2006 school year, CMOHI leadership suggested a shift to centralize the process, so that each school would include the permission form in the packet of information and permissions forms distributed to parents at the beginning of the school year. The move to centralize the permissions process was not fully implemented at all sites, limiting its effectiveness, and capacity to evaluate it's effectiveness
- A review conducted by the CMOHI Evaluator suggested that a focus on the individual school and, within the school, on the coordinator or parent liaison, school nurse *and* individual teacher were key means of increasing parental permission.
- In 2006-2007, additional changes were made. These changes focused on drawing attention to the need for higher rates of parental returns and included dedicating funds to provide incentives to teachers who returned 90% or more of their permission forms.

Several factors were identified as obstacles in efforts to improve parent permission return rates. Each partnering program had its own processes and legal considerations that permissions needed to address, which made forms lengthy and difficult to complete. Also, each marketed its programs differently, and principals offered varying support. In the 2006-2007 project year, focus groups were conducted with teachers, administrators, school health personnel and parent liaisons to determine how to improve the parental permission process. Each group was facilitated by the evaluator and included six to eight participants. Focus groups were successful in identifying key factors that influence permissions and strategies for addressing these factors. Lessons learned through the focus groups are presented in more detail in the *Knowledge* portion of this section of this report.<sup>36</sup>

### ***Overcoming other obstacles for students to receive oral health care***

In addition to receiving parental permissions, other obstacles were identified during the course of the CMOHI school-based programs that threatened to limit access to dental services.

- **Transportation to dental services.** In Webster, a small city in southern Worcester County, with two participating schools, some students were unable to receive care because they lacked

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<sup>36</sup> See the CMOHI evaluation report for 2006-7 for a full account of the structure and results of the teacher focus groups,



transportation to take them to receive dental restorative treatment services that they needed.<sup>37</sup> Students would have had to travel over 20 miles to Worcester to receive care. Attempts to create a transportation program were not successful. Local funding thereupon supported the creation of a clinical site housed within a school building to provide restorative services by staff of Family Health Center of Worcester.

- **Enrolling families into MassHealth.** In Webster, not all families that are eligible for MassHealth benefits have filled out the required forms to enroll in the program. Leaders of the school-based programs investigated opportunities to enlist an in-take administrator who could partner with schools to help facilitate the enrollment process for these families.<sup>38</sup> In fall, 2008, a local agency provided specific dates and times to help residents enroll in MassHealth.<sup>39</sup>

## **Knowledge**

### ***School-based programs contribute to improved oral health of students***

The increasing number of services provided through the school-based programs is a promising indicator that more students are seeking and receiving treatment through CMOHI partners. However, assessments of the impact of school-based programs on students' oral health have not been conducted, and such longitudinal studies would be difficult due to the high rate of movement of students among schools, and confidentiality concerns of partners making it impossible to track individual students. In CMOHI partner schools, similar to other schools across the nation, many students move among schools within a district or leave the district entirely. New students arrive, compromising attempts to track the long-term outcomes of students who received treatment.

Nevertheless, there is some evidence that suggests a possible decrease in the rate of caries among students in participating schools. A comparison of student groups in one grade level to the students in the next grade in the following year (e.g., the percentage of caries of kindergarteners from 2004-5 compared to the rates of first-graders in 2005-2006) indicated that programs have had a positive effect on students' rate of caries. This comparison revealed a significant decrease in the rate of caries in the following-year grade level, which may be wholly or partially attributable to CMOHI programs.<sup>40</sup>

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<sup>37</sup> Telephone interview with Janet Scheffler, United Way of Webster/Dudley, July 15, 2008

<sup>38</sup> Telephone interview with Janet Scheffler, United Way of Webster/Dudley, July 15, 2008

<sup>39</sup> Email communication, Ellen Sachs Leicher, October 20, 2008.

<sup>40</sup> CMOHI Evaluation Report, 2005-2006.

***Importance of coordinating with school-based health clinics and working closely with school administration and other school staff***

Providers from the CMOHI programs offered insights into strategies for increasing the effectiveness of school-based service programs. These insights speak to the importance of coordinating plans for providing services with other activities and demands facing school staff. Staff from each of the four CMOHI programs perceived generally positive feedback about their presence in public schools and their provision of much-needed services to students.

CMOHI partners characterized a “top-down” effect as the most ideal adoption and efficacy of the screening, varnish and sealant programs. CMOHI programs were most firmly established as a program within the school by enlisting the support and involvement of key school staff. Schools where principals were enthusiastically receptive of the program were believed to be more likely to engage the interest of teachers and parents. In addition, close coordination with school administrators helped overcome the significant challenge of time and scheduling constraints in schools. Programs needed to be especially careful to balance program implementation with the demands of annual student achievement testing (e.g., MCAS), so as to ensure continued cooperation from administrators and teachers.

Program leaders reported that developing relationships with other key school personnel was also an important factor in program acceptance. School nurses, in particular, were noted as a valuable member of the school staff that could advocate for the dental program.<sup>41</sup> Program leaders’ access to school staff varied from school to school, so that the key stakeholders were different in different schools. Strategies need to be tailored to each school.

Martha Sullivan, of the Family Health Center of Worcester, for example, noted that flexibility and communication among partners were important assets in building relationship.<sup>42</sup> A shared willingness in making space for oral health providers was important to the success of the program. Schools provided space within their buildings, wherever possible, which could be in the nurse’s office, in an available room, or in the hallway.

***Address factors that influence the parental permission***

Ellen Sachs-Leicher noted common features that seemed to contribute to higher rates of returns of parental permissions:

- Keep the permission forms simple; avoid using technical dental and legal terms whenever possible.

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<sup>41</sup> Telephone interview with Pauline O’Brien, September 4, 2008

<sup>42</sup> Telephone interview with Martha Sullivan, August 8, 2008

- Recognize that immigrants may not want to fill out extensive paperwork due to fear of the federal government.
- Have dental permissions included in packets of other parent permission forms typically sent by schools to homes of students before the school year opens
- Organize a comprehensive marketing campaign that generates excitement and interest among students and faculty within the school. If resources are available, provide an incentive for higher returns
- Support from the principal of the school helps make the program a priority among parents and teachers<sup>43</sup>

Several of the features noted by CMOHI leadership were supported by the findings of teacher focus groups. Four separate focus groups were held with representatives of (1) QCC partner school Grafton Street; (2) Care Mobile partner school Elm Park; and (3) FHC Webster partner schools Webster Middle and Park Avenue. Each group was facilitated by the evaluator and included six to eight participants. Members of the focus group were asked to identify a variety of causal factors that may increase parental permissions:

- Student factors
- Parent factors
- Individual teacher factors
- Principal factors
- Distribution process factors
- Collection process factors
- Other factors

The results from the focus groups provided guidance to others charged with developing similar school-based programs dependent on parental permissions.<sup>44</sup> Overall, the findings from the focus group suggested key features of successful strategies for increasing parental permission:

- There is no “canned” program that will succeed in all schools and with all teachers. Each effort needs to be tailored to the needs and traditions of individual schools.
- Teachers are the agents of success or failure. If they are active in seeking out permission return, this will happen. If they are inactive, high permission-return rates will not happen.
- A successful effort will need to be a true “marketing campaign” involving all of the tools of marketing, including print and audiovisual media - some of which can be developed in student art classes. For example, one school prominently featured a larger than life

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<sup>43</sup> Telephone interview with Ellen Sachs-Leicher, June 30, 2008 and email communication October 20, 2008.

<sup>44</sup> For full report on teacher focus groups, see CMOHI evaluation report for 2006-2007.

- “toothpaste tube” visual banner, which was colored in as the rate of returns increased.
- Group incentives (e.g. special treats or privileges for success) can help, but only in the context of total involvement of teacher and administrators in the campaign. Incentives are not an easy fix and can be costly.
  - A well-organized process for retrieving, counting and storing permissions (both positive and parental refusals) is vital to the effort. We saw two other things that helped this school year: (1) giving teachers a list of their students to check off who returned permission slips and an envelope for teachers to put them in. Webster did this but Worcester did not, in most instances; (2) something attractive for the classroom that’s an incentive to the kids and teacher. FHC made a carousel that was decorative, with toothbrushes, some school supplies, etc., that sat in the classroom as a reminder.<sup>45</sup>

### **Sustainability**

All four school-based programs will continue in participating schools. Each program receives reimbursements for services delivered to school children, which will help pay for the continuing services. All children who request services will continue to receive them promptly. With the success of other CMOHI efforts to recruit additional dentists to MassHealth, more oral health providers will become available to continue to provide these services, upon referral.

Communication among care providers and schools is a key facet of sustaining the effectiveness of the school programs. Monica Lowell noted that maintaining regular meetings and communication with school administrators will continue to help programs anticipate and address challenges as they emerge, and lead to ongoing improvements.<sup>46</sup>

An important component of sustainability is educating families about how to qualify for services following the completion of CMOHI grant funding. Ongoing services will be reimbursed through MassHealth, requiring that eligible families enroll. Oral health programs are taking steps to assist families with the enrollment process and have engaged in efforts to promote and encourage enrollment. Dr. Sullivan noted that the Family Health Center has begun an “Eligibility Campaign” with its local partners to increase the number of families enrolled in MassHealth. The campaign in Webster includes public announcements through local cable television and a network of websites, and providing direct assistance to families in completing the necessary paperwork.<sup>47</sup>

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<sup>45</sup> Email communication from Ellen Sachs Leicher, October 20, 2008.

<sup>46</sup> Telephone interview with Monica Lowell, August 19, 2008

<sup>47</sup> Telephone interview with Martha Sullivan, August 8, 2008

The four programs, though similar, operated independently of one another and were organized differently. As a result, program expenses and overhead costs varied. For example, the Quinsigamond Community College program used student hygienists, who are not compensated for the services they provide. In addition, programs that were first to adopt the fluoride varnish as a treatment have benefited from the lower cost of this procedure compared to alternatives. All programs will continue to offer, and possibly expand, services in schools, but variation in program design reveals important implications for sustainability of school-based programs:

- Continuing changes and shifts in oral health reimbursements or other environmental factors may affect the four programs differently.
- A variety of programs have proven to be sustainable, suggesting that there is more than a single model to produce a viable school-based program within the initiative. <sup>48</sup>

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<sup>48</sup> Telephone interview with Ellen Sachs-Leicher, June 30, 2008

## 4. Establishing a dental residency program

**Goal:** To create a high-quality dental education program that is well integrated with the general medical curriculum and raises awareness of the need for increased oral health access, particularly among the poor or uninsured.

### **Objectives/ Strategies**

- Design a one-year post-doctoral training program in general dentistry located at a medical school.
- Create an optimal educational, clinical, and scientific environment for the training of dental residents with support from hospital, university, community, institutional, and private oral health care programs.
- Develop socially responsible professionals with a commitment to community service and life-long learning.

### **Program Development**

Impetus for the program originated in 2002, with contact between the Worcester Medical Society Chapter and CMOHI about physicians' need for emergency dental coverage for patients who do not have an identified dental provider. At the time, neither Worcester hospital had dental staff capable of handling emergencies. The residency would provide additional coverage to adequately care for patients with these emergencies.

In late 2003, CMOHI began development of a post-doctoral one-year dental residency program within UMass Medical School to address the need for increased local dental resources, particularly among underserved populations. Graduates of the residency program would be encouraged to practice locally after completing the program and the focus on community-based service was intended to encourage the residents to make a lasting commitment to serving the people in greatest need.

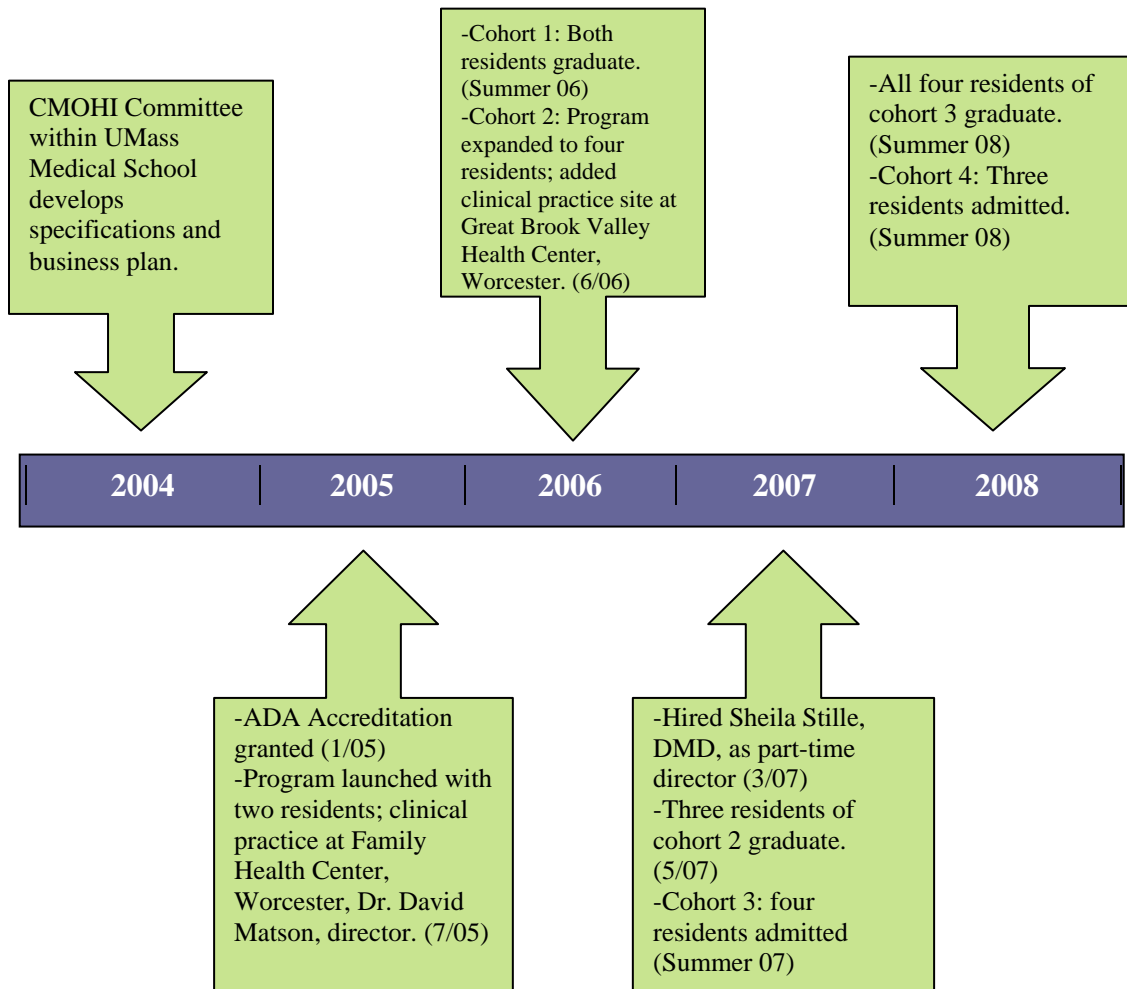
The dental residency program was intentionally housed within UMass Medical School to affirm dental health as a key factor in general health and well-being. It is one of only three programs in the nation where dental residents are integrated into a medical school.<sup>49</sup>

The collaboration brought together the experience of UMass and the willingness of the local dentistry community, which was eager to participate in a university program. A timeline of milestones within the Dental Residency Program are shown in Table 11.

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<sup>49</sup> Telephone interview with Jan Yost, June 30, 2008

**Table 11: Timeline of Dental Residency Program**



**Program Design**

***Didactic Program***

The didactic program was administered by the dental faculty in conjunction with the Tufts University School of Dental Medicine. An educational series in each of the six dental specialties (oral surgery, restorative, periodontics, pedodontics, orthodontics, and endodontics) was offered by residency program faculty. Other didactic programs included hospital organization and function, oral pathology, forensic dentistry, practice management, head and neck anatomy, and implant dentistry. Patient-care conferences covered quality assurance, literature reviews, and diagnosis and treatment planning. Alterations were made to the scheduling of the didactic program so that residents would not need to be pulled from their clinical rotations to attend.

### ***Clinical Rotations***

Residents rotated through anesthesia, physical diagnosis training, family medicine, operating and emergency rooms, and treatment of special-needs patients. The overall goal of the curriculum was to incorporate these clinical experiences into the practice of everyday dentistry.

### ***Clinical Training***

Rotations were located at the Family Health Center in Worcester, which supported the training of three residents. For cohorts entering in 2006 and 2007, clinical training was also offered at Great Brook Valley Health Center, a second federally qualified health center in Worcester. In 2008, clinical training through Great Brook Valley Health Center was discontinued due to complications in arranging adequate supervision for residents on an ongoing basis. Under the supervision of health center staff in the clinical training, residents managed comprehensive cases and collaborated with interpreters and social workers to learn about the complex social needs of patients and the impact on dental health.

### ***Adaptability and Accountability***

The dental residency program was launched with a plan for purposeful expansion, with expected growth from two residents in the initial cohort in 2005 to four residents in 2006, and training six residents on a continuing basis, beginning in 2008. The number of clinical practice sites also followed a planned expansion, beginning with a single clinical site, the Family Health Center of Worcester, joined by a second site, Great Brook Valley Health Center in July, 2006. This plan was altered in 2008 and the number of residents was reduced from four to three, due to complications in arranging for supervision of residents at the second clinical site, Great Brook Valley Health Center.<sup>50</sup> All three residents admitted in 2008 will receive clinical training at Family Health Center.

Since the inception of the dental residency program, several programmatic changes have occurred to provide residents with clinical experiences. The program increased the consultation services provided to UMass Memorial Medical Center in 2006 to include 24-hour, seven-day-per-week coverage. Previously, residents were on-call for six hours on weekdays. The program also increased emergency room coverage at the University hospital to five days per week.

Programmatic changes were made in 2007 to increase opportunities for residents to practice dentistry procedures. The operating room rotation that had previously been conducted with Tufts Dental Residency Program at Shattuck Hospital in Jamaica Plain, Boston was moved to Worcester for the

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<sup>50</sup> Telephone interview with Sheila Stille, June 27, 2008



UMass dental residents. Shattuck's distance from Worcester had limited the number of operating room experiences residents received.<sup>51</sup>

The training of the residents was set in the community health centers. At the health centers, residents would accumulate experience working with a range of oral health needs and among the population that they may continue to work with following the residency. Residents would also gain experience through participating in emergency procedures at the UMass hospital. However, the opportunity to assist in emergency care was restricted due to the separation between the health centers, where residents were based, and the UMass hospital.<sup>52</sup>

Additional efforts were undertaken to strengthen integration of the dental residency program within the medical school. Integration is an important strategy for training residents to respond to both medical and dental health needs of patients, which would alleviate the need for patients to seek additional treatment from multiple health care providers. Examples of planned efforts:

- Recruitment of additional preceptors from the community of dental experts to supervise residents at the hospital. To encourage participation, preceptors are granted faculty status as an instructor, invited to attend faculty development workshops and allowed library and other privileges at the university.
- Residents will do an interclerkship with the medical school to teach medical residents how to do a dental exam and how oral health is related to overall health.
- Residents will help to develop a new system in radiation oncology in which they will serve as specialists in head/neck anatomy and create drawings for the 3D system.
- Residents will work with transplant patients to make sure they are dentally healthy so they can stay on the transplant list.
- Improvement is sought to streamline the billing process for hospital procedures that involve both medical and dental insurance. Dr. Stille is creating a prototype case to test and improve billing procedures.

Leaders of the residency program continued to look for opportunities to enrich the program. At the Family Health Center, work has started and will continue to target these areas in the upcoming years:

- Identifying additional volunteer preceptors: In lieu of available preceptors, residents learn from the dental staff at the health center.
- Participating in the dental community: Events are designed to bring residents together with other dental care providers within the health center and also with dentists from the local community.

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<sup>51</sup> Email communication, Ellen Sachs Leicher, October 20, 2008.

<sup>52</sup> Telephone interview with Sheila Stille, June 27, 2008

- Improving communication with other healthcare providers: Residents have organized opportunities to work with medical care professionals in the community. This exposes residents to the public health system and practice management skills.

### **Knowledge:**

#### ***Graduate residents are likely to remain in the area in community health***

One of the goals for the dental residency program was to increase the number of oral health providers in the area, with the hope that residents would remain in central Massachusetts after completing the program. Of the nine residents who have graduated since 2006, five have moved into positions that allow them to continue to offer dental services in central Massachusetts (the five include a graduate in 2008 who may be offered a position at a local health center, pending an opening). Of these five, four were practicing at health centers that are part of the CMOHI.<sup>53</sup> The placement status of one resident from the first cohort is unknown.

#### ***Designing the oral health residency to match the culture of the medical school setting ensures a smoother integration***

When launching an oral health residency, it is important to assess how the existing culture at the medical university can support or constrain the new program.<sup>54</sup> The residency program needed to understand both shared goals and different goals and assets of the program and the university. UMass Medical School wanted to add dental expertise to its emergency and consultation services, which the residency would provide. But the faculty at UMass Medical School could not offer much support, because of the lack of dental skills among university staff. As a result, the program needed to be creative in finding dental experts who could serve as supervisors and instructors in the program.

### **Sustainability**

Funding for the dental residency program will be continued through federal graduate medical education (GME) funds, which will eventually cover the full cost of the program. The residency program will continue at a single site, the Family Health Center, and provide training to three residents in the upcoming year. There is interest from staff at UMass Medical School and Great Brook Valley to reopen the clinical program. A return to Great Brook Valley would allow the program to expand to six residents. The didactic program will remain unchanged.

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<sup>53</sup> Telephone interview with Sheila Stille, June 27, 2008

<sup>54</sup> Telephone interview with Mick Huppert, July 14, 2008

## **5. Educating health professionals about oral health basics**

**Goal:** To increase the knowledge of health practitioners about the importance of oral health examination and referral.

**Objectives/Strategies:**

- Educate primary care and pediatric physicians on oral health issues
- Emphasize the importance of early detection of oral health problems

**Program Development**

Educational programs for health professionals have been a feature of CMOHI since its beginning, targeting medical students, residents, pediatricians, primary care physicians and nursing staff. The program for educating health professionals was intended to increase knowledge of health screening procedures, provide educational materials to use with patients, and develop an ability to make referrals for further dental services.

**Adaptability and Accountability**

Education programs for health professionals in the first two implementation years were based on a program developed by the MassHealth Access Program (MAP). In each of these years, Dr. John Gusha delivered one training session to fourth-year UMass Medical school students on pediatric rotation. Each session was held for eight students. The training covered oral health screening procedures, providing educational materials for parents, and the importance of referring patients to a dentist at early stages of onset of dental problems. Broader oral health issues were also covered, such as access to care and the rationale for integrating oral health education into the general medical curriculum.

Beginning in 2006, education programs for health professionals expanded with the arrival of Dr. Hugh Silk, a physician on the faculty of UMass Medical School. Prior to joining CMOHI, Dr. Silk had organized other efforts to increase awareness of oral health issues among health professionals, notably with the Smiles for Life organization. Dr. Silk had also been involved in the development of MAP materials. Under Dr. Silk, the CMOHI program created and tested curriculum and physician educational materials on adult and urgent/emergent oral health issues. Dr. Silk developed and delivered a lecture series, by distribution of MD pocket cards, PDA applications of the pocket cards and office/exam room posters.

Starting in the fall of 2006 and continuing through 2008, Dr. Silk conducted dental “grand rounds” lectures at the hospital, open to all interested physicians. One half-day per week of Dr. Silk’s time was committed to oral health education. Lectures were provided to faculty and

residents in various departments at the University of Massachusetts Medical School, in addition to lectures at other health organizations.

### **2007-2008 Oral Health Lectures**

- *Oral Health Across the Life Cycle*  
Primary Care Days, Worcester, MA (March, 2008)  
25 participants
- *Oral Health Across the Life Cycle- What They Didn't Teach You in Medical School*  
Massachusetts Academy of Family Medicine, Annual Meeting, Worcester, MA (March, 2008)  
30 participants
- *Smiles for Life: The STEM Oral Health Curriculum- Child Oral Health*  
Island Health Inc. Martha's Vineyard, MA (January, 2008)  
15 participants
- *Teaching Dentists to Be Better Teachers*  
UMass Medical School, Worcester, MA (October, 2007)  
8 participants
- *Smiles for Life: The STEM Oral Health Curriculum- Prenatal Oral Health*  
Grand Rounds, UMass OB/GYN Department, Worcester, MA (October, 2007)  
40 participants

In addition, a half-day interclerkship was offered to medical students in their third year at UMass Medical School in January, 2008. Ninety-eight students attended the training, which covered topics in pediatric oral health, acute care, fluoride issues, and oral examinations.

Educational materials were distributed to all members of the family medicine department. Members were provided with posters and cards in English and Spanish.

### **Knowledge:**

#### ***Enabling health professionals to 'find' time for oral health education within the medical curriculum requires creativity.***

Enabling medical students to find time to learn is a challenge in establishing an oral health education program. Residents and medical students have many responsibilities and other learning opportunities that compete for their attention. Leaders of the oral health education program were creative in identifying times to offer workshops and to connect with interested audiences. Lectures were held during lunchtime, when students and residents were more likely to be available. Session appeal was enhanced by offering food, as well. Additional lectures were offered through student interest groups that were connected to community health. These initial offerings are expected to continue to grow as interest in oral health

and respect for oral health issues becomes more accepted as part of medical education. In addition interest may be increased as the state will now reimburse primary care physicians for fluoride varnish and oral health education provided to MassHealth members. <sup>55</sup>

***Essential features that support the launch of an oral health education program within a medical school setting***

Dr. Silk noted that the CMOHI oral health education program is currently being offered to other medical and residency programs in Massachusetts. In considering factors for launching similar programs in other universities, Dr. Silk identified factors that had been important levers for establishing the CMOHI program. The participation of a champion of the program on the medical school faculty, such as Dr. Silk, was an important factor in efforts to establish and expand the oral health education program. The use of tested and ready-made materials from the Smiles for Life organization reduced the amount of work and uncertainty in the first stages of adopting a new program. These existing materials are easy to use and to transfer into new settings, as they include annotated speaker notes and test questions that could be quickly adopted into an education program. <sup>56</sup>

**Sustainability:**

As CMOHI funding comes to an end, the oral health education program will continue to be offered.

- Lectures and workshops will be offered to applicable Student Interest Groups.
- The oral health lectures offered by Dr. Silk will continue to be offered as part of an 18 month rotation.
- The interclerkship will continue to be offered.
- The Smiles for Life materials will remain publicly available online.
- A portion of Dr. Silk's time will remain dedicated to oral health education through funding from a recently awarded grant.

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<sup>55</sup> Telephone interview with Hugh Silk, July 8, 2008

<sup>56</sup> Telephone interview with Hugh Silk, July 8, 2008