

MICHIGAN'S ORAL
HEALTH CAPACITY
BUILDING GRANTS
FOR MEDICAID
SAFETY NET DENTAL
PROVIDERS

Illinois Regional

Health

Workforce

Center

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Executive Summary

Michigan's Oral Health Capacity Building Grants were intended to improve access to dental care for Medicaid beneficiaries. Approximately \$5 million in state funds was awarded in 2000 to dental safety net providers including community health centers and local health departments. The grants provided one-time funds for expansion of dental services including developmental costs, infrastructure, and enhanced technology. The following evaluation was conducted approximately one year into funding through a written questionnaire with self-reported information supplied by each grantee. In this report we describe how grantees implemented capacity building plans, the effect of the award on dental care capacity and actual and projected dental service volume.

The 21 respondents consisted of ten community health centers or federally qualified health centers, seven local health departments, two hospitals/health systems, and two school linked providers. Awards ranged in size from \$15,000 to just over one million dollars; the average award was \$265,000. Most of the grantees had other sources of funding (local private foundations, Medicaid reimbursement, and income from operations) to supplement the MDCH award.

As a result of the funding, the number of dental sites among the grantees increased from 35 sites (1.7 sites per grantee) to 57 sites (2.7 sites per grantee). The hours that all dental sites were open increased collectively by 565 hours per week, from 1,210 to 1,775 hours per week. This reflects the creation of new dental sites, since the average hours per site declined slightly (34.5 hours to 31.1 hours). There was a substantial decrease in the waiting time for routine dental care appointments; from 48 to 36 days. The wait for emergency care declined from 1.2 to 0.9 days. The grantees increased their full time equivalent staff by more than 50%; a total of 35 dentists, 25 dental hygienists, 40 dental assistants, and 38 dental office staff were added.

The number of Medicaid dental patients receiving care at grantee clinics increased substantially. Medicaid dental encounters increased by 84% compared to an overall increase of 59% in encounters for all patients. Nearly all (82%) of the encounters reported by the five new providers were Medicaid. The six grantees reporting user data showed similar patterns; Medicaid users increased by 140% compared to a 104% increase for all insurance types.

The scope of dental services available improved for the grantee's patients. Almost one-quarter of the grantees added new preventive, diagnostic, basic restorative and emergency care. Seventy-five percent of respondents were able to expand existing services for a wide variety of services.

National and state level attention has focused on improving access to dental care for underserved populations. The Michigan grant program has succeeded in opening 22 new dental sites and has significantly increased both the scope and volume of dental services to the Medicaid population. Considerable progress has been made toward the goal of providing dental care to 90,000 additional Medicaid beneficiaries. The challenge will be sustaining the improved service when grant funds for staffing cease.

Introduction

Michigan's Oral Health Capacity Building Grants were the product of a 1999 State legislative initiative designed to improve access to dental care for Medicaid beneficiaries. The grants provided one-time funds for the expansion of dental services in Michigan, including developmental costs, infrastructure, and enhanced technology. More than \$5 million was awarded to dental safety net providers, including community health centers and local health departments. This report describes findings from a survey of grantees approximately one year after the grant awards. We describe how grantees implemented capacity building plans, the effect of the award on dental care capacity, and actual and projected dental service volume.

Background

Safety Net Providers

Safety net health care providers (SNPs) are mandated by their mission to provide health care to medically underserved and vulnerable patient populations including low-income individuals, minority groups, individuals who lack health insurance, and Medicaid recipients. The core of the nation's safety net is made up of community health centers (CHCs), local health department clinics (LHDs), public hospitals, and private organizations. This network of providers is heterogeneous and faces ongoing financial challenges.¹ Funding sources include patient care fees, federal, state and local public funds, grant awards, and philanthropy.

While SNPs are recognized as important providers of primary medical care services to low-income populations, their role as dental health care providers has been less studied. However, existing data suggest that the need and demand for dental services at these centers far exceeds the ability to supply them. A survey of CHCs conducted in 2000 cites restorative and preventative dental care as two of the three most needed but unavailable services.² Ninety-two percent of responding CHCs reported that lack of funding was the reason that services were not available; 88% reported that the shortage of funds interfered with their ability to recruit new staff. These themes were identified in a recent report that discussed the role of CHCs in providing dental care to low-income individuals.³ The GAO report described the challenges facing organizations trying to increase dental care, including the cost of equipment, difficulty recruiting and retaining dental practitioners, and problems generating revenue.

A recent study of Illinois dental SNPs illustrated the financial and workforce challenges facing these organizations. Only eight of the 94 clinics responding to a survey reported being able to meet all patient needs. Approximately half of the clinics employed one full-time dentist, while one-quarter had a dentist available only part-time. The ability to offer a more competitive salary was cited as a barrier to recruiting dental professionals. Workforce and resource shortages resulted in waiting times for routine care of five weeks and difficulty referring patients in need of more extensive care.⁴

There has been an effort at the Federal level to expand the capacity of dental safety net providers. The Healthy People 2010 program has set a goal of increasing the number of CHCs offering dental care from about 34% in 1997 to 75% by the year 2010.⁵ The Department of Health and Human Services has funded an expansion of dental services; between 1994 and 1998, 25 new

dental programs were established nationally. The effect of these initiatives has not yet been studied.

Michigan's Safety Net Providers

Michigan's medical SNPs include 31 community health centers with 88 clinical care sites. In 1999, about 249,000 of Michigan's 9.6 million residents (3%), and 73,000 of Michigan's 1.2 million Medicaid beneficiaries (6%) received health or medical services at CHCs.⁶ Michigan has 45 local health departments that serve all 83 counties. Most of the LHDs (30) serve single counties, while the remaining 15 serve two or more counties based on population. The largest geographic area served by a single LHD is 10 counties. There is one city health department.⁷

In 2000, Michigan's Department of Community Health published a directory of oral health programs in the state. An estimated 51 SNPs offered dental or oral health care programs, most of which were located in or affiliated with local health departments (22), CHCs (11), schools (9) or hospitals (3). The remaining six programs are divided among the Indian health service (3), referral services (2), and one not-for-profit organization.⁸ In 1998, there were 14 CHCs offering dental services. These centers employed 27 full time equivalent dentists, and produced 70,396 dental encounters for the year.⁹

Michigan's Oral Health Grants to Expand Access and Increase Medicaid Service Delivery

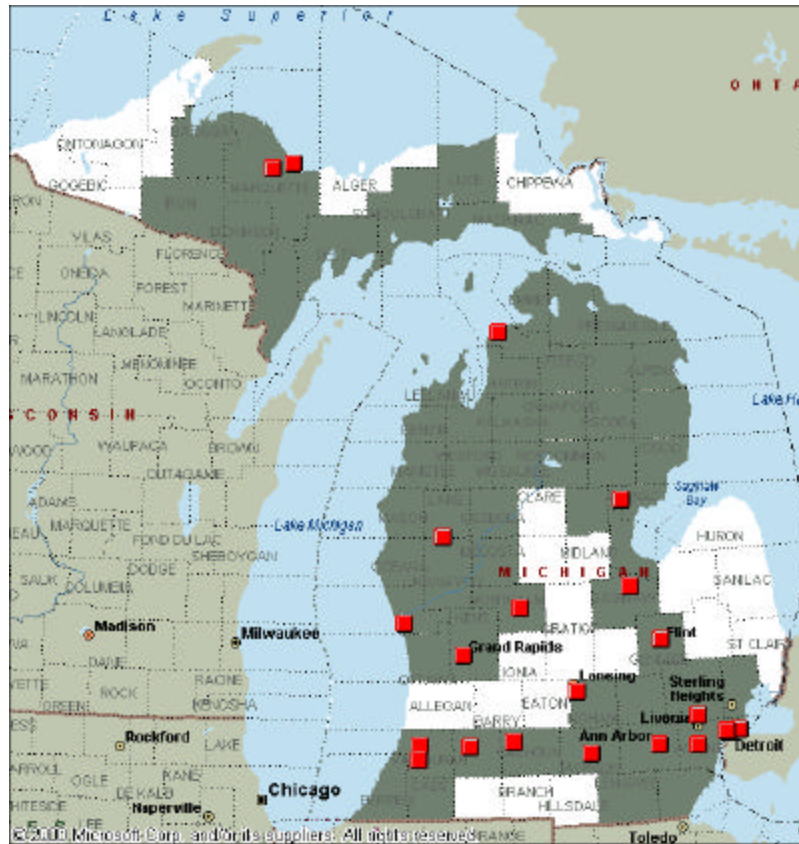
The Michigan Legislature addressed the Medicaid population's difficulty in obtaining access to dental care by appropriating \$10 million for two pilot programs. Half of the funds were earmarked for a demonstration program offering a private insurance look-alike to beneficiaries under the age of 21 years in selected counties. This program has been described in a previous report.¹⁰ The remainder of the appropriation funded capacity building projects among the State's safety net dental providers and is the subject of this report.

In December 1999, the Michigan Department of Community Health (MDCH) issued a request for proposal for the \$5 million program of oral health grants to increase dental capacity among safety net dental care providers. Proposals were due January 2000 with funding for FY 2000. A December 1999 conference call was held with MDCH staff to answer questions potential applicants might have. The funds were to be used to directly increase the number of Medicaid beneficiaries receiving dental care in Michigan; for example, projects might involve capital improvements, staffing, and development costs. Funds could be used for administration and start-up costs related to the project, but could not replace any existing federal state or local dollars or to be used to supplant the present Medicaid reimbursement fee schedule.

Applicants were asked to include seven sections in their proposals and each section was evaluated and scored individually. These scores were tabulated to give a final proposal score. The maximum possible was 100 points. The MDCH gave additional consideration to proposals covering dental underserved areas, and an attempt was made to distribute awards across the regions of the state. The number of proposals awarded was determined by the number received and the amounts requested. The seven priority areas and relative scores are described in Appendix A.

The Grant Awards and Recipients

Figure 1. Location of Grantees with Surrounding Service Areas Shaded



The MDCH received 32 grant applications in response to the RFP and funded 22 projects. Recipients of these funds represented various types of dental providers, including 11 federally qualified health centers or community health centers, seven local health departments, and four hospital, university, or school-affiliated organizations. Recipients were located across the state, in the Upper and Lower Peninsula, and in both urban and rural areas. Fifty-nine of Michigan's 83 counties were served by the grantees; one county had four grantees, while six counties were served by two grantees each. (Figure 1) Grant recipients are listed in Appendix B.

The awardees' proposed projects varied in scope of work and funding requested. The most ambitious project involved collaboration among six LHDs to construct four new dental clinics in a 20 county service area. Examples of more modest projects include installation of a handicap-accessible door and purchase of an X-ray machine.

In general, the MDCH funded dental equipment costs, construction and remodeling costs and staff salaries for a start-up period of one year. Grant awards could be less than the amount requested. MDCH reduced awards to reflect the capacity expansion expected to be used by Medicaid beneficiaries. For example, if an applicant requested \$50,000 for a piece of equipment for general patient use and had a 50% Medicaid patient population, then the MDCH would approve 50% of the equipment cost, or \$25,000.

Evaluation Methodology

This study of the impact of the grant award program was performed at the request of the MDCH. The evaluation was conducted approximately one year into funding through a written questionnaire with self-reported information supplied by each grantee. The 40-item questionnaire was developed following discussions with stakeholders, review of the original grant applications and project descriptions provided by the MDCH, and pilot testing. Survey questions included the following:

- Introductory questions about the nature of the project, degree of completion at the time of survey, and the target patient population.
- Pre- and post-implementation information, including the number of dental sites and dental operatories (dental chairs), dentists, dental hygienists, and other staff, the number of patients seen on a monthly basis, hours the clinic was open, and appointment waiting times.
- Open-ended questions about the grantee's overall experience with the MDCH grant process and the implementation of the expansion projects.

At the time of survey the completion status of the projects ranged from 50 to 100% complete. For those grantees whose projects were either incomplete or very recently completed, an estimate of the post implementation information (including projected dental care volume) was accepted. The survey document is included as Appendix C.

Surveys were mailed to each of the 22 grant award directors in May 2001; non-respondents were contacted via email or telephone and encouraged to complete the questionnaire. In some instances, the MDCH and the Michigan Primary Care Association contacted non-respondents to encourage response. All survey responses were entered into a MS Excel spreadsheet and tabulated. Informal content analysis was used to assess the responses to open-ended questions by identifying common themes.

Results

Twenty-one of the 22 grantees returned completed surveys. Respondents included ten CHC/FQHCs, seven LHDs, two hospitals/health systems, and two school linked providers. Five of the respondents served schools. In aggregate, the respondents requested over \$8.2 million and were awarded \$5.6 million. Four recipients received 100% of their grant request, eight received 69-95%, and nine received less than 60%. Awards ranged in size from \$15,000 to just over one million dollars; the average award was \$265,000. Most of the grantees had other sources of funding (local private foundations, Medicaid reimbursement, and income from operations) to supplement the MDCH award.

At the time of survey, 13 respondents had completed their projects, four were 75% or more complete, and the remaining four were in lesser stages of completion. The projects took or were expected to take on average 11 months to complete (range of 4 to 21 months). The projects proposed by the grantees were quite diverse. Five grantees planned to construct new facilities and thirteen were expanding or otherwise improving existing facilities. Nearly all grantees purchased new equipment and many hired additional staff. (Table 1)

Table 1. Uses of Funds by Grantees

| <u>Use of Grant Funds</u> | <u>No. of Grantees</u> | <u>% Grantees</u> |
|------------------------------------------------|------------------------|-------------------|
| Construction of new facilities | 5 | 24% |
| Improvement / expansion of existing facilities | 13 | 62% |
| Purchase / upgrade of equipment | 20 | 95% |
| Hire new staff | 11 | 52% |

Expanding Dental Care Resources and Capacity

Grantees were asked to provide data regarding the staffing, operations, and monthly patient volume both before and after completion of their project. These numbers were intended to provide a measure of the effect of the program and the financial support on the 21 responding grantees.

The data are presented in three ways to examine 1) the impact of the total program (aggregate data for all 21 responding grantees); 2) the impact on the SNP grantees; and 3) the characteristics of dental sites. The dental site data can be compared to dental provider data from other safety net dental clinics or to private dental practices. For example, the “average” dental site prior to funding expansion had 3.7 dental operatories or dental chairs, 1.4 dentists, 1.1 dental hygienists, 2.2 dental assistants, and was open about 35 hours per week.

Dental Sites: Twenty-two new dental sites were added, increasing from 35 sites (1.7 sites per grantee) to 57 sites (2.7 sites per grantee). Eight grantees reported no change in the number of sites, seven added one site, five added two sites, and one grantee added five sites. The number of dental operatories increased by 105 dental chairs overall. Five respondents reported no increase in the number of chairs, five reported an increase of one to three chairs, nine reported an increase of four to seven chairs, and three reported changes of greater than 11 chairs (the maximum change by a respondent was 21 chairs). (Table 2)

Table 2. Changes in Dental Care Resources and Outcomes, Before and After Grant Awards

| | Before Funding | | | After Funding | | | Change | |
|-----------------------------------|----------------|--------------|----------|---------------|--------------|----------|--------------|--------------|
| | all grantees | per grantee* | per site | all grantees | per grantee* | per site | all grantees | per grantee* |
| Resources | | | | | | | | |
| Dental sites | 35 | 1.7 | - | 57 | 2.7 | - | 22 | 1.0 |
| Operatories | 130 | 6.2 | 3.7 | 235 | 11.2 | 4.1 | 105 | 5.0 |
| Dentists (FTE) | 49 | 2.4 | 1.4 | 84 | 4.0 | 1.5 | 35 | 1.6 |
| Dental Hygienists (FTE) | 38 | 1.8 | 1.1 | 63 | 3.0 | 1.1 | 25 | 1.2 |
| Dental Assistants (FTE) | 77 | 3.7 | 2.2 | 117 | 5.6 | 2.1 | 40 | 1.9 |
| Dental Office Staff (FTE) | 46 | 2.2 | 1.3 | 84 | 4.0 | 1.5 | 38 | 1.8 |
| Outcomes | | | | | | | | |
| Hours open weekly | 1,210 | 57.6 | 34.6 | 1,775 | 84.5 | 31.1 | 565 | 26.9 |
| Ave wait for routine appt (days) | 48 | - | - | 36 | - | - | -13 | - |
| Ave wait for emergent appt (days) | 1.2 | - | - | 0.9 | - | - | -0.3 | - |

* For the 21 responding grantees (22 total grantees total)

Operations: The aggregate number of hours that all dental sites were open increased by 565 hours per week, from 1,210 to 1,775 hours per week. This reflects the addition of new dental sites, since the average hours per site declined slightly (34.5 hours to 31.1 hours). There was a substantial decrease in the waiting time for routine dental care appointments; from 48 to 36 days. The wait for emergency care also declined from 1.2 to 0.9 days.

Staff: In aggregate, the grantees increased their full time equivalent (FTE) staff by more than 50%. A total of 35 dentists, 25 dental hygienists, 40 dental assistants, and 38 dental office staff were added. It appears that the new personnel were added to staff the new clinic sites since per site staffing levels remained at pre-funding levels. (Table 2)

Changes in Patient Volume and Services

Patient Care Volume

The survey gave grantees the option to report monthly patient volume as either “encounters” or “users.” An encounter generally refers to a single dental service visit; a patient may have multiple encounters over a period of time. Thus when one examines dental encounters over a long period (such as many months or a year), the number of encounters may be, on average, two or three times as high as the number of users (depending on the encounter per user rate within the time period). Over the shorter period of one month, the number of encounters can be expected to be closer to the number of patients.

Of the 21 respondents, 13 reported pre- and post-implementation data in terms of patient encounters, and six reported users. Two of the respondents did not report data for both time periods and could not be included in the analysis. Grantees that had not fully implemented their program at the time of survey were allowed to forecast expected post-implementation activity. Of the eight grantees reporting estimated patient care volume, three were new providers (five new providers total), three were established providers reporting encounter data (eight total), and two were established providers reporting user data (six total).

Prior to funding, the “average” dental site reporting encounters provided 366 dental encounters per month, 238 of which were Medicaid sponsored. The average dental site reporting users provided dental care to 279 individuals, including 157 with Medicaid coverage. After funding, per site patient volume was comparable to pre-funding levels, a significant finding since 22 new dental sites were added. Monthly patient volume increased by 314 encounters per grantee (respondents reporting encounters) and 675 users per grantee (responders reporting users). (Table 3)

By insurance status, the monthly volume measures show that increases were highest among the Medicaid population. Encounter data show that Medicaid volume increased by 84% compared to an overall increase of 59% in encounters for all patients. Nearly all (82%) of the encounters reported by the five new providers were Medicaid. Of the established providers reporting encounter data, Medicaid volume increased by 50% compared to a 36% increase by all insurance types. Respondents reporting user data showed similar patterns; Medicaid users increased by 140% compared to a 104% increase for all insurance types.

Table 3. Monthly Patient Care Volume Before and After Grant Awards

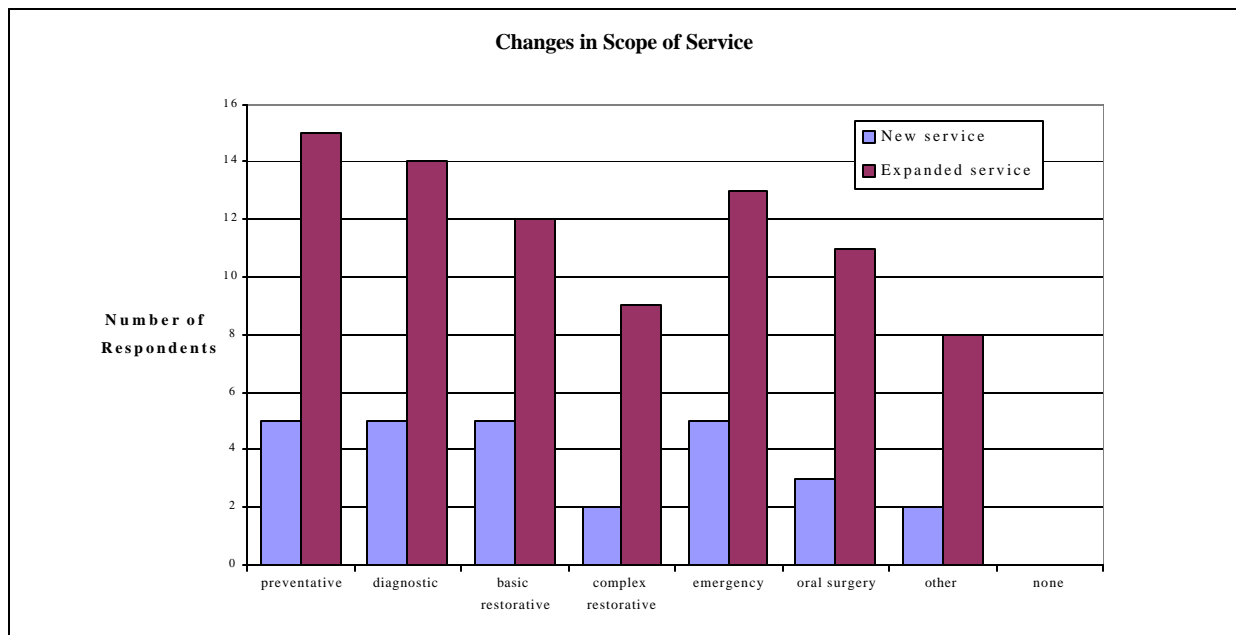
| Utilization Data by Patient Payer Source | Before Funding | | | | | After Funding | | | | | Change | |
|------------------------------------------|----------------|--------------------|-------------|-------------|----------|----------------|--------------------|-------------|-------------|----------|-------------|-------------|
| | n ¹ | sites ² | total count | per grantee | per site | n ¹ | sites ² | total count | per grantee | per site | total count | per grantee |
| Encounter Data | | | | | | | | | | | | |
| All Patients | 13 | 19 | 6,947 | 534 | 366 | 13 | 33 | 11,035 | 849 | 334 | 4,088 | 314 |
| Medicaid | 12 | 16 | 3,812 | 318 | 238 | 12 | 29 | 7,016 | 585 | 242 | 3,204 | 267 |
| Uninsured | 12 | 16 | 2,121 | 177 | 133 | 11 | 24 | 2,539 | 231 | 106 | 418 | 54 |
| Private | 12 | 16 | 597 | 50 | 37 | 11 | 24 | 611 | 56 | 25 | 14 | 6 |
| User Data | | | | | | | | | | | | |
| All Patients | 6 | 14 | 3,909 | 652 | 279 | 6 | 22 | 7,961 | 1327 | 362 | 4,052 | 675 |
| Medicaid | 6 | 14 | 2,196 | 366 | 157 | 6 | 22 | 5,267 | 878 | 239 | 3,071 | 512 |
| Uninsured | 5 | 9 | 798 | 160 | 89 | 5 | 12 | 1,551 | 310 | 129 | 753 | 151 |
| Private | 5 | 9 | 925 | 185 | 103 | 5 | 12 | 1,143 | 229 | 95 | 218 | 44 |

¹ = number of grantees responding

² = number of sites corresponding to respondents

Scope of Services: Grantees were asked if they were able to add or expand specific types of dental services. Almost one-quarter of the grantees added new dental services in each of the following categories: preventative, diagnostic, basic restorative and emergency care. Oral surgery was added by 14 %, and complex restorative and “other services,” such as endodontics, periodontics, and prosthetics, were added as a new service by 10% of grantees. A majority of respondents were able to expand existing services over a wide range of service types. Seventy-one percent were able to offer more preventative care, 67% expanded diagnostic care, 57% increased basic restorative care, 43% expanded complex restorative, 62% expanded emergency care, 52% expanded oral surgery, and 38% expanded other services. (Figure 2.)

Figure 2



Implementation of Projects

All respondents reported that the grant funds had helped expand their capacity to offer dental care to Medicaid beneficiaries. Fourteen respondents reported that the most significant accomplishment from the project was an improvement in services, including the addition of dental providers and exam space, and the availability of more comprehensive dental care. Three grantees mentioned the formation of coalitions and partnerships to address the issue of access to dental care for Medicaid patients.

The most common obstacle or challenge during project implementation, cited by seven respondents, was in recruitment and retention of staff. Difficulty in hiring both dentists and dental hygienists was specifically mentioned. Five respondents cited problems such as lack of funds and delays in obtaining funds. Other obstacles mentioned were the lack and/or inexperience of construction personnel.

The resources found most helpful by grantees, mentioned by two to four respondents each, included the involvement of a dentist in the planning and implementation of the project, the use of architects and dental consultants in the design of facilities, state agency personnel and resources, and past experience of the grantee in the grant process.

Estimation of Project Impact

At the onset of this program, the MDCH projected 90,000 new Medicaid beneficiaries would receive care due to this investment in dental capacity. In order to compare study findings to the stated goal, we need to extrapolate a number of annual users for all grantees from the encounter data collected.

Estimated Annual Increase in Dental Encounters

Using the monthly dental care encounter data, we have estimated a twelve-month encounter volume before and after funding by simply multiplying the monthly data by twelve (Table 4). This allows for assessment of the grant program impact over a year-long time period. It also allows for comparison of data from this study to other reports. The total program increase for the 13 reporting grantees was 49,056 encounters per year for all patients and 38,448 for Medicaid patients (12 grantees reporting). The annual estimated dental encounters per grantee increased by 3,774 to 10,186 per grantee from 6,413. The estimated annual encounters per dental site were 4,388 before funding and about 4,013 after funding (encounters per site did not increase, as noted above). We have not estimated dental users in this way as it would overestimate user volume since many patients would be expected to make return visits and consume available appointment slots.

Table 4. Projected Annual Data for Grantees Reporting Encounters

| Projected Annual Dental Care Volume | Before Funding | | | After Funding | | | Change | |
|-------------------------------------|----------------|-------------|----------|---------------|-------------|----------|-------------|-------------|
| | total count | per grantee | per site | total count | per grantee | per site | total count | per grantee |
| Encounter Data | | | | | | | | |
| All Patients | 83,364 | 6,413 | 4,388 | 132,420 | 10,186 | 4,013 | 49,056 | 3,774 |
| Medicaid | 45,744 | 3,812 | 2,859 | 84,192 | 7,016 | 2,903 | 38,448 | 3,204 |
| Uninsured | 25,452 | 2,121 | 1,591 | 30,468 | 2,770 | 1,270 | 5,016 | 649 |
| Private | 7,164 | 597 | 448 | 7,332 | 667 | 306 | 168 | 70 |

*The number of Medicaid, uninsured and private encounters do not sum to the number of all patients due to the difference in the number of respondents. See Table 3.

Conversion of Annual Encounter Data to User Data to Evaluate MDCH Program Goal

In Table 4, we estimated that 38,448 new annual Medicaid encounters occurred among 12 reporting grantees. These grantees received \$2.8 million of the total \$5.7 million awarded to all 22 grantees. If all grantees achieved comparable patient volume increases per dollar awarded, one could estimate that all grantees would produce 78,269 new encounters over the year. ((38,448 encounters*\$5.7 million)/\$2.8 million = 78,269 encounters) Another approach is to simply multiply the average annual change in encounters per grantee by 22 grantees. Both calculations are presented for all insurance types in Table 5. The result is a range of possible annual encounters for all grantees for each of the insurance types.

Table 5. The Impact of Funding: Extrapolation of Encounter Data to All 22 Grantees

| | Average Annual Change in Encounters per Grantee ¹ | Total Encounters for All 22 Grantees ² | Total Change in Encounters ¹ | Dollar Adjusted Change in Encounters for All Grantees ³ |
|--------------|--------------------------------------------------------------|---------------------------------------------------|-----------------------------------------|--------------------------------------------------------------------|
| All Patients | 3,774 | 83,018 | 49,056 | 96,420 |
| Medicaid | 3,204 | 70,488 | 38,448 | 78,269 |
| Uninsured | 649 | 14,274 | 5,016 | 10,997 |
| Private | 70 | 1,530 | 168 | 368 |

¹ from Table 4

² average annual change in encounters per grantee x 22

³ (total change in encounters x \$5.7)/ the amount of grant dollars awarded to respondents for each insurance type; \$2.9 million for all patients, \$2.8 million for Medicaid, \$2.6 million each for uninsured and private pay.

In order to convert the number of annual encounters to patients or users, we can apply a utilization rate for dental services. Table 6 presents the calculation for the Medicaid data for a range of utilization rates; from 1 to 2.5 encounters per user per year. If all patients having a dental encounter have one visit per year, the number of users equals the number of annual encounters, and ranges from 70,488 to 78,269 (the range comes from the different methods used in Table 4 to calculate encounters for all 22 grantees). If these patients instead have two encounters per year, then the range becomes 35,244 to 39,135 annual encounters. These estimates can be compared to the original program goal of 90,000 new Medicaid users.

Table 6. Conversion of Projected Annual Medicaid Encounters to Annual Users

| Range of Adjusted Medicaid Encounters | Encounters per User per Year | Estimated Range of Annual Users |
|---------------------------------------|------------------------------|---------------------------------|
| 70,488 to 78,269 | 1 | 70,488 to 78,269 |
| 70,488 to 78,269 | 1.5 | 46,992 to 52,179 |
| 70,488 to 78,269 | 2 | 35,244 to 39,135 |
| 70,488 to 78,269 | 2.5 | 28,195 to 31,308 |

Discussion

Michigan’s capacity building grant program was successful in helping dental providers expand capacity through the addition of operatories, staff, and working hours. Before implementation the grantees comprised 21 organizations offering dental care at 35 sites with 130 operatories. Employed in this group were 49 dentists, 38 dental hygienists, 77 dental assistants, and 46 office staff. After implementation of the projects, staffing increased to 84 dentists, 63 dental hygienists, 117 dental assistants, and 84 office staff. The increase in personnel combined with the addition of 105 new operatories in 22 new sites, resulted in similar per site staffing levels before and after funding; 1.4 vs. 1.5 dentists, 1.1 vs 1.1 dental hygienists, 2.2 vs 2.1 dental assistants, and 1.3 vs 1.5 office staff.

Beyond the increase in dental infrastructure, the scope of services available to dental patients also expanded. Most respondents added or expanded basic restorative dental care, helping meet an important need. They were also able to help secure more complex dental care services such as emergency care and oral surgery for their patients.

Recruitment and retention of qualified dental staff remained a problem for grant recipients. The typical patient population includes only a small proportion of insured or paying patients, making it very difficult to offer a competitive wage without subsidy. A national survey found that the lack of funding for salaries was reported by 88% of center managers as the primary reason for recruiting difficulties.²

Comparison of Findings with Other Studies

In order to assess the practicality of grant recipient estimates of staffing levels and patient care volume, we compared findings of this study to two other recent dental provider reports. A survey of Illinois safety-net providers was conducted in 2001, and reported data for many of the same parameters studied here.⁴ The American Dental Association also published a detailed study of private dental practice in 1998.¹¹

By annualizing the productivity data collected for this study, we are able to compare levels of patient care volume with the 1998 ADA Survey of Dental Practice.¹¹ The ADA data show the average dental practitioner produced approximately 3,700 visits per year including dental hygienist visits. Our survey respondents reported the equivalent of 4,388 annual visits per site before implementation. Adjusting for 1.4 dentists per site, we get an average 3134 visits per dentists annually. The post-implementation calculation yields 2,675 visits per dentist annually. Lower levels of productivity for safety net dental providers versus dentists in private practice are

not unexpected. Dental providers in safety net settings are usually salaried while private practitioners operate as small businesses with income directly related to patient volume. Also, patients at dental safety net clinics have often experienced a delay in receiving dental care and tend to present with more complex and time consuming needs than the insured patients of private practitioners.

Comparison of respondent data with a similar but broader study of SNPs in Illinois (4) shows that the Michigan respondents are similar in terms of waiting time for routine and emergent care, and weekly operating hours. Illinois dental clinics were open, on average, 31 hours per week. This compares to 35 hours per week pre-implementation and 31 hours per week post implementation for our respondents. Waiting times for routine care for the Michigan group were 48 days before project implementation and 36 days after. The Illinois providers reported a 36-day wait for routine care. Emergency care waiting times were 1.2 days before and 0.9 days before and after implementation respectively compared to 2 days for Illinois.

Staffing level comparisons between the Michigan grantees and Illinois SNPs also yielded some interesting observations. The dentist staffing levels were nearly identical; 1.4 FTE dentists per clinic in Illinois compared to 1.5 FTE dentists per site among the grantees. Staffing of dental assistants was also similar; 1.3 per clinic in Illinois to 2.1 in Michigan. A notable difference is in the number of hygienists per clinic. Our survey respondents employed, on average, 1.1 hygienists per site both before and after implementation; 25 hygienists were added to staff the 22 new dental sites. Of the 16 respondents who were established providers, 14 had at least 1 FTE hygienist and two had a part-time hygienist before project implementation. After implementation, four of the five new providers added at least 1 FTE hygienist per site. These numbers compare favorably to the Illinois study that found 0.5 hygienists per clinic and half of all SNP dental providers with no hygienist at all. These staffing levels are important because dental hygienists can provide basic preventative care, patient education, and help alleviate some of the stress on the SNP dental system caused by the shortage of dentists.

Impact of Capacity Building Program on Medicaid Dental Care

At the onset of this program, the MDCH projected 90,000 new Medicaid beneficiaries would receive care due to this investment in dental capacity. We have estimated the impact of this program using data supplied by grantees. These data show substantial projected increases in new Medicaid encounters and users. However, these findings should be considered preliminary due to survey timing (so close to project completion). Also, data was collected as monthly estimates rather than in actual 12-month figures. Nonetheless, these findings show considerable progress toward the program goal.

Study Limitations

This study was performed to assess the effectiveness of grants provided for dental capacity expansion. In most cases, the time frame of the project did not allow for optimal post-implementation time lapse for data collection. In some instances, the survey was completed in advance of, or just a few months after, project completion. New dental sites require anywhere from several months to a year to reach a steady patient volume, so there may have been aspects of the process that the survey failed to capture. A consequence of this limitation is that some of

the data were forecasts, as opposed to actual, for staffing and patient volumes. The method of forecast and the reliability of assumptions by the grantees have not been verified.

Patient volume data was accepted in both encounter and user form in order to make data reporting easier for the survey respondents. This necessitated division of the grantees into two groups, and compromised our ability to report findings for the group as a whole.

Conclusions

National and state level attention has focused on improving access to dental care for underserved populations. Michigan has responded with a grant program that has resulted in the opening 22 new dental sites, significantly increasing both the scope and volume of dental services to the Medicaid population. The challenge will be to sustain the improved service when grant funds for staffing cease. Continued evaluation is needed to see if the recipients are able to generate sufficient revenue to continue operations.

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Appendix A

Proposal Requirements and Scores

1. *Community involvement, collaboration and coordination – 10 points* Applicants were encouraged to demonstrate, through letters of support, relationships with other community groups such as local health departments, healthcare providers, schools, and other government agencies such as the Family Independence Agency.
2. *Innovative methods of increasing oral health services – 20 points* The MDCH asked applicants for original approaches to meeting the dental needs of Medicaid children in underserved areas; specifically mentioned were developmental costs for oral health clinics.
3. *Experience and qualifications – 10 points* Applicants were asked to demonstrate their ability to complete the proposed project, and include their past experience with Medicaid beneficiaries.
4. *Outcome measures and objectives – 10 points* Applicants were asked to discuss the goals of their projects, and explain how the results will be evaluated. Reporting numbers of Medicaid beneficiaries served and changes in the oral health status of the population served were mentioned as acceptable measures.
5. *Plan of sustainability – 20 points* Applicants were required to have a plan to continue the increased service(s) to Medicaid beneficiaries beyond the project period.
6. *Overall quality of proposal – 10 points* The ability of the proposed project to further the MDCH's objective of increasing dental services to Medicaid beneficiaries in dental underserved areas was the central measure by which the proposals were to be evaluated. Also critical was the clarity and sustainability of the applicants' plan.
7. *Cost of proposal and financial plan – 20 points* An estimate of the number of new Medicaid recipients receiving dental care as a result of the grant was required. The MDCH calculated the cost per beneficiary for each proposal (dollars requested/number of new Medicaid beneficiaries served), and this measure was used in the evaluation process. Also considered was whether the budget was cost efficient and realistic.

Appendix B

Grant Recipients

Baldwin Family Health Care, Inc.
Center for Family Health, Inc.
Cherry Street Health Services
Children's Hospital of Michigan
Community Dental Center
Detroit Community Health Connection, Inc.
Family Health Center of Battle Creek
Hackley Community Care Center
Hamilton Family Health Centers, Inc.
Health Delivery, Inc.
Henry Ford Health System
Ingham County Health Department
Intercare Community Health Network
Kalamazoo County Human Services Dept.
Marquette County Health Department
Mid-Michigan District Health Department
Mobile Dentists
Northwest Michigan Community Health Agency
Sterling Area Health Center
Upper Peninsula Association of Rural Health Services, Inc.
VanBuren/Cass County District Health Department
Wayne County Department of Public Health

Appendix C

Oral Health Grants to Expand Access and Increase Medicaid Service Delivery
Medical Services Administration, Michigan Department of Community Health

Grant Recipient Survey
May 2001

1. Name of organization awarded grant funds:

2. Project director:

Name and title _____ ph # _____ email _____

3. Survey completed by:

Name and title _____ ph # _____ email _____

Date completed ____/____/____ (dd/mm/yy)

BACKGROUND INFORMATION

4. Please list the goals of your project:

- 1) _____
- 2) _____
- 3) _____

5. Nature of proposed project: *(check all that apply)*

- Construction of new facility
- Improvement / expansion of building
- Purchase / upgrade of equipment
- Hiring new staff
- Other _____

6. What population(s) have you targeted? *(check all that apply)*

- Medicaid adults
- Medicaid children
- Other _____

7. Amount of grant requested \$ _____

8. Amount of grant awarded \$ _____

9. Percent of the total project cost that the grant monies cover:

- 0 to 20%, 21 to 40%, 41 to 60%, 61 to 80%, 81 to 99%, 100%

10. Please list other sources of funds for this project (general categories of sources are sufficient)

- 1) _____
- 2) _____
- 3) _____

11. Type of dental clinic: *(check all that apply)*

- Federally funded community health center
- Federally Qualified Health Center (FQHC) or look-alike community health center
- Local public health department
- Hospital based
- School-based/School-linked
- Dental school
- Dental hygiene school
- Private, non-profit organization
- Other _____

12. Geographic area served by your organization (list counties) _____

13. Number of sites in your organization that provide dental care _____

14. Number of dental sites benefiting from this grant _____

15. What other (non-dental) services are provided at the site where your dental clinic operates?

- None (stand-alone dental clinic)
- Medical care
- Other _____

16. Date project commenced ___/___ (mm/yy)

17. Date project completed ___/___ (mm/yy)

If project not complete:

Current percent completion _____%

Expected completion date ___/___ (mm/yy)

BASELINE / PRE-IMPLEMENTATION INFORMATION

18. How many dental staff (FTE) were employed at your clinic(s) before implementation?

| | | | |
|------------|-------|-------------------|-------|
| Dentists | _____ | Dental assistants | _____ |
| Hygienists | _____ | Office staff | _____ |

19. On average, how many dental patients (users) were served **on a monthly basis** before implementation? Counts reported represent number of **users** or number of **encounters**.

| | | | |
|----------|-------|-------------------|-------|
| Total | _____ | Uninsured | _____ |
| Medicaid | _____ | Private insurance | _____ |
| Medicare | _____ | | |

20. What was the scope of services offered to dental patients before implementation?

- Preventive (e.g., cleanings, fluorides, sealants)
- Diagnostic (e.g., oral exams, x-rays)
- Basic Restorative (e.g., fillings)
- Complex Restorative
- Emergency
- Oral Surgery
- Other (e.g., endodontics, periodontics, prosthetics) _____
- None (this project will result in new service offering)

21. Number of operatories / chairs before implementation _____

22. Number of sites where dental / oral health care were delivered before implementation _____

23. Average number of hours your dental clinic(s) operate(s) **per week** before implementation _____

24. Average waiting time in **days** for an appointment for **routine** dental care before implementation:

All patients: _____ Medicaid patients: _____ Other patients: _____

25. Average waiting time in **days** for an appointment for **emergency** dental care before implementation:

All patients: _____ Medicaid patients: _____ Other patients: _____

POST-IMPLEMENTATION INFORMATION

26. Have you been able to increase the number of Medicaid patients seen? Yes No If so, by how many? _____ Please comment.

27. How many dental staff (FTE) are / will be employed by your clinic after completion of the proposed improvement?

| | | | |
|------------|-------|-------------------|-------|
| Dentists | _____ | Dental assistants | _____ |
| Hygienists | _____ | Office staff | _____ |

28. On average, how many dental patients (users) have been served monthly following completion? If your project has not been completed, check here , and enter expected monthly volume.

Counts reported represent number of users or number of encounters.

| | | | |
|----------|-------|-------------------|-------|
| Total | _____ | Uninsured | _____ |
| Medicaid | _____ | Private insurance | _____ |
| Medicare | _____ | | |

29. How has the scope of services changed since improvements were implemented? (Or, how will they change once the project is complete?)

| <u>new service</u> | <u>expanded service</u> | Please check the appropriate box. |
|--------------------------|--------------------------|------------------------------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | Preventive (e.g., cleanings, fluorides, sealants) |
| <input type="checkbox"/> | <input type="checkbox"/> | Diagnostic (e.g., oral exams, x-rays) |
| <input type="checkbox"/> | <input type="checkbox"/> | Basic Restorative (e.g., fillings) |
| <input type="checkbox"/> | <input type="checkbox"/> | Complex Restorative |
| <input type="checkbox"/> | <input type="checkbox"/> | Emergency |
| <input type="checkbox"/> | <input type="checkbox"/> | Oral Surgery |
| <input type="checkbox"/> | <input type="checkbox"/> | Other (e.g., endodontics, periodontics, prosthetics) _____ |
| <input type="checkbox"/> | <input type="checkbox"/> | None (please explain) _____ |

30. Number of operatories / chairs after completion _____

31. Number of sites where dental / oral health care are delivered after completion _____

32. Number of hours your clinic(s) operate(s) per week after completion _____

33. Average waiting time in days for an appointment for routine care after completion:

All patients: _____ Medicaid patients: _____ Other patients: _____

34. Average waiting time in days for an appointment for emergency care after completion:

All patients: _____ Medicaid patients: _____ Other patients: _____

GRANT PROCESS EVALUATION

35. Did the grant funds help you to expand your capacity to offer dental care to Medicaid beneficiaries? Yes No Please explain.
36. What has been your most significant accomplishment regarding this project?
37. What obstacles / challenges were encountered during the implementation of this project?
38. What resources or information did you find helpful?
39. What changes in the external environment helped or hindered the project? (for example, new dentists or employers entering or leaving the area, etc.)
40. What changes in the internal environment helped or hindered the project? (for example, changes in management or availability of support staff, etc.)

Thank you for your time and effort in completing this survey.

Surveys should be returned by **JUNE 22, 2001** to:

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The Illinois Regional Health Workforce Center And the Michigan Primary Care Association Partnership

The Illinois Regional Health Workforce Center (IRHWC) at the University of Illinois at Chicago was established in 1998 through funding from a three-year cooperative agreement from the U.S. Health Resources and Services Administration (HRSA), Bureau of Health Professions (BHP), which was renewed for an additional five years beginning in 2001. The Center is one of five state level health workforce study centers located at universities in Illinois, New York, California, Texas, and Washington State. The Illinois Center's mission is to conduct state and national policy related research on the supply, distribution, demand, competency, and diversity of the health professions workforce (physicians, dentists, nurses, pharmacists, allied health, and public health). The IRHWC is particularly active in the dental workforce arena, and has studied the dental workforce and access to dental care for low-income children in Illinois.

The Michigan Primary Care Association (MPCA) is a non-profit organization whose mission is to "promote, support, and develop comprehensive, accessible, and affordable quality primary health care services to everyone in Michigan, especially those traditionally underserved." The MPCA accomplishes this goal through network development, information sharing, and advocacy. MPCA members include primary care providers, both individual and organizational, who support the MPCA mission. The MPCA collaborates with a variety of organizations at the local, state, and national level, including partnership with the US Department of Health and Human Services, and the Michigan Department of Community Health.

In July of 1999, two Bureaus within HRSA, the BHP and the Bureau of Primary Health Care (BPHC) initiated a partnership program to provide funding for eight projects between workforce study centers and state primary care associations (PCAs) or primary care organizations (PCOs). The goal was for the workforce study centers to lend their expertise to the study of workforce issues of interest in the PCA / PCO's state. As a result, the MPCA contracted with the IRHWC to study Michigan's 1999 two-part legislative initiative to increase access to dental care for Medicaid beneficiaries.

This project is the second of two undertaken by the Illinois Regional Health Workforce Center (IRHWC) / Michigan PCA partnership. Both projects were designed to assist Michigan stakeholders in the assessment of the 1999 initiative programs. Our first report described the Healthy Kids Dental demonstration program's design and implementation. (The Michigan Healthy Kids Dental Program: Background, Program Design, and Baseline Assessment, Illinois Center for Health Workforce Studies, December, 2000.)