

CHARACTERISTICS OF SUCCESSFUL DENTAL PROGRAMS

In Community and Migrant Health Centers

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES
Public Health Service
Health Resources and Services Administration



ACC No:

316

VF AMHS U5622*

Characteristics of Successful Dental Programs In
Community and Migrant Health Centers

DHHS

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FINAL REPORT

July 1988

Contract No. HRSA 240-86-0070

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U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES
Public Health Service
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Bureau of Health Care Delivery and Assistance

Identifying and Evaluating Characteristics of Successful
Dental Programs in Community and Migrant Health Centers
(C/MHCs); and Assessing the Current Status of Prepaid
Programs for Dental Care in C/MHCs

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FINAL REPORT

INTRODUCTION - PURPOSE OF CONTRACT

It has been over 20 years since the first community and Migrant health centers (C/MHCs) were established. Although dental services were included in some of the first federally funded programs, no specific policy had been established for federally-funded C/MHC dental programs until 1987, however program guidelines and regulations did exist. The system to evaluate the efficacy of C/MHC programs, is moving to a cost center Zero Based Assessment (ZBA) analysis, thus this report should prove useful in clarifying dental program objectives and defining merits to communities of C/MHC services.

The purpose of this contract included a number of objectives: (1) As a "best practices" contract, the major objective was to examine nine representative facilities with dental components considered to be providing high quality services at a reasonable cost. It was anticipated that a careful analysis of these programs would identify elements common to all successful programs, and further, it was believed that some unique characteristics would be present which could be adapted to programs in other centers. Finally, it was thought that indicators would exist that would identify more objectively the efficiency and effectiveness of dental programs. The information obtained through this process would then be transmitted to C/MHCs with dental components, with the hope that the information could then be used to strengthen all programs.

(2) Another component of the contract was to establish a Dental Ad Hoc Advisory Committee, composed of dental directors representative of all regions of the country, experienced, and considered to be directing exemplary programs. The Committee's purpose was to advise the project director regarding direction and findings, and to serve as advisors regarding dental policy issues.

(3) Finally, the methods of payment for dental care, as well as dental disease patterns, has significantly changed during the past 20 years. These changes raise questions concerning the role of C/MHC dental programs in prepayment, and financing of care. The contract specifically required an analysis of any prepaid contracts in the sites visited, and a literature review of the changes in dental disease patterns and in financing dental care. It was anticipated that recommendations would be made regarding direction of care and innovative financing mechanisms.

METHOD

The literature review was conducted primarily by an associate professor at the Oregon Health Sciences University, whose background ensured a document that was extremely comprehensive, with well over 100 citations. Revisions were made, with input from both the coproject officer and the Dental Advisory Committee. These methods resulted in a review with an easy-to-understand executive summary accompanied by extensive supporting documents.

The Dental Ad Hoc Advisory Committee was assembled from a list of C/MHC dental directors who were nominated by Public Health Service (PHS) regional dental consultants. Nine members were selected, representative of as many regions as possible, with a balance among rural, urban, and migrant programs. The selection was made jointly by the project director and the coproject officer. Committee members are as follows:

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The sites were selected through a process similar to the selection of Committee members. Dental programs were nominated by PHS Regional Dental Consultants. Nine sites were selected, with a balance among rural, urban, and migrant centers, and with representation from as many different regions as possible. As many prepaid sites as possible were also included.

Site visits were made by project staff who interviewed the executive director, the dental director, the medical director, a community board member, fiscal staff member, and other staff as necessary. An unstructured interview guide was used, with some information collected, or requested, in advance of the site visit. Each piece of data was checked with as many sources as possible. Manual counts were made to verify computer data. For example, during the chart audits, productivity data were gathered to compare with computer printouts. Usually, two days were spent on site.

Case studies were prepared following each site visit. These were sent to the sites for corrections and comments. The final version was sent to the C/MHC executive director, the dental director, the project officer and the regional dental consultant.

The collected data, its analysis, and presentation were reviewed by the Dental Advisory Committee as was the format for writing the case studies. All suggestions made by Advisory

Committee members were considered.

The draft final report and recommendations were all reviewed and had the approval of the Advisory Committee.

Communication between project director and coproject officer was frequent enough so that at each step there was concurrence with the approach and the interpretation of data.

RESULTS

Dental Advisory Committee.

The Dental Advisory Committee consisted of all contract principals previously listed. The two non-C/MHC dentists participated in two meetings held in the D.C. area. Some of the meetings benefited from the participation of Regional Dental Consultants, and other observers attending national meetings, where two advisory committee meetings were held.

The Committee made significant contributions in a number of areas. In regard to the contract specifically, the Committee provided specific suggestions regarding indicators to be reviewed and data to be collected. The interpretation of the data was reviewed by the Committee as was the literature review and the draft final report and recommendations.

The Committee expanded its role into several other areas, however. One of the first items addressed was a review of the BHCDA draft dental policy. Initially, the draft had been received by C/MHC dentists with less than enthusiastic endorsement. The Committee worked closely with BHCDA staff, negotiated significant changes, and ended up with a document all parties thought fair and reasonable. Little criticism was heard when the document became policy on March 19, 1987. Members of the Committee have expressed support of this policy at National Association of Community Health Centers meetings.

A third major area of involvement was a continuing education program for C/MHC dentists during the NACHC clinical conference in Denver. The Committee met in conjunction with NACHC's Clinical Conference, and a majority of the dental sessions included Committee members as speakers.

The last area addressed by the Committee was the process of upgrading management skills of C/MHC dentists. The problems include the following: 1) Complex management issues with few, if any, avenues for continuing education to address them. 2) PHS Regional Dental Consultants generally not being available to provide assistance to C/MHC dental programs, due to placement in organization structure with little influence, other duties and lack of travel funds. 3) Relatively low salaries and limited funds available for continuing education programs, making attendance at these programs difficult. 4) Lack of program expertise and resources in the necessary training areas.

The Committee is working toward establishing a network to address the need for management skills. Through the efforts of

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some members, a network is being established for Regions VIII, IX, and X. It is hoped that this will continue beyond the contract period.

LITERATURE REVIEW

The literature review revealed two trends. Dental caries prevalence in the pediatric population has decreased dramatically over the past two decades with the largest percentage of this decrease taking place in smooth surface lesions. This has resulted in a greater percentage of all remaining lesions being pit and fissure lesions. For the pediatric population, with the combined use of systemic and topical fluorides and pit and fissure sealants, it is theoretically possible to eradicate dental caries.

Data and literature on caries epidemiology in adults are sparse. The small improvement in rates of decayed teeth presented by the National Center for Health Statistics (NCHS) data is hardly as dramatic as the corresponding pediatric data.

Fewer adults, however, are losing teeth to decay. Therefore, an increased number of teeth and tooth surfaces are present in later years to experience decay. This is especially significant in view of the many xerostomia-producing medications commonly prescribed for geriatric patients. These medications, in combination with exposed tooth roots and decreased ability to perform oral self-care, place elderly individuals at a greatly increased risk for caries.

The decrease in decayed surfaces in all age groups is due in large part to the use of fluoride in many forms. From what is known about the mechanism of fluoride's caries-reducing action, adult teeth as well as pediatric teeth should benefit due to the topical effects of fluoride.

More children retaining more decay-resistant teeth throughout childhood and young adulthood results in fewer teeth being extracted due to decay. As this population ages, dentistry is presented with older individuals who have more natural dentition remaining than in past decades. Over time new problems can be expected to arise and indeed, are documented in current literature. Root caries is an example.

Regarding periodontal disease, the situation is not the same as that for caries. Some groups have experienced slight improvements due to advances in diagnosis and surgical treatment techniques, while the national average data indicate no real improvement for the population in general over the past 20 years.

This is not surprising in view of the fact that prevention of periodontal diseases depends entirely on active means. There is no practical passive preventive measure for periodontal

diseases that correlates with the use of fluoridation for the prevention of caries. Periodontal disease incidence has increased in many groups, which may be due to the increased number of teeth retained into later years.

The United States has the means and the manpower to address the periodontal disease incidence problem. However, additional research is needed to develop passive and less mechanical measures to control this disease process. Chemical methods, vaccines, and other nonsurgical, nonmanipulative methods will probably meet with the best success.

Periodontal disease is episodic in nature. This presents a disease model in which those affected are never really cured, but may have periods of exacerbation and remission. It is this type of disease that requires intense and constant monitoring to prevent periods of exacerbation from destroying the gains made through treatment.

This is manpower intensive. Ample dental manpower exists at the present time; however, it needs to be redirected in its intent.

IMPACT OF DENTAL DISEASE TRENDS ON C/MHC PATIENTS

There has been very positive movement towards decreasing the major dental disease--dental caries. It has been thought by many that periodontal disease is the major cause of tooth mortality. This is now regarded as doubtful and dental caries is likely the major disease. Irrespective of that debate, C/MHC patients are younger than the general population and certainly for this population, dental caries is the major problem. Further, the success enjoyed by the general population regarding tooth decay reduction is not shared by the C/MHC population. The literature review shows that underserved and disadvantaged populations, the very people who are C/MHC clients are still very much at risk for dental decay.

DENTAL DELIVERY TRENDS

There is no question that the traditional mode of dental practice, fee for service solo private practice, is rapidly changing. Fee for service solo private practice will remain the predominant mode of dental health delivery in the near future; however, Preferred Provider Organizations (PPO)s, capitation, network capitation, group practice, franchise practices, and

retail practices all have emerged. Further, the impact of third-party payment, which is growing at a steady rate, is expected to increase.

Many of the alternative delivery systems are not expected to be a significant factor in the future. PPOs, franchise practices, and retail practices are all declining. However, group fee for service and capitation programs, including network capitation, a system whereby carriers allow individuals enrolled in this plan to choose fee for service practices willing to provide care on a capitation basis, are growing and are expected to continue to grow.

IMPACT ON C/MHCS

The only trend that might impact on C/MHCS is the involvement in capitation programs.

The two likely methods for C/MHCS are network capitation and Title XIX capitation plans. Due to changes in Title XIX legislation, many C/MHCS must participate in Medicaid capitation programs to remain competitive and to continue to serve their low income clients. Participation in dental Medicaid prepaid programs can be financially advantageous to C/MHCS if arrangements are handled properly. It is premature to expect C/MHCS to be involved significantly in other types of capitation or prepayment programs.

OVERVIEW OF CASE STUDIES

The presumption was that the sites studied would be "best" or "better practices." We were looking to find creative practices, delivering cost-effective services which would have a favorable impact on the oral health status of the community. It is probable that such programs exist even among those studied, however, the data base to support such a finding did not exist. Basic problems, which inhibit either existence of "best practices" or the documentation of "best practices" follow.

DATA QUALITY

Clearly, there is information not collected, that would be helpful to both programs and BHCDA. Later in this report, this potential data base is described. It cannot be emphasized strongly enough, however, that current zero based assessment (ZBA) data and Bureau Common Reporting Requirements (BCRR data), if accurate, would provide enough information to evaluate the dental programs.

The ZBA has two major flaws. The first is that comparative analysis is difficult due to lack of consistency in assigning charges. Some programs prorate dental charges based on square footage, others based on budget. Some programs apportion administrative charges, others do not.

The other problem is that much of the data presented are totally inaccurate. The figures can be explained and the source described, however, the data are simply not accurate.

The expense data are reasonably accurate. If there were adequate explanations available, it would be acceptable. The income data were inaccurate for each site visited, however, since it is not separated by department. As an example, in every program visited, specific dental procedures (such as dentures) required payment prior to providing the service. In those cases, when payment was made for specific dental procedures, if bills were due for medical, lab, or pharmacy services, the payment would be prorated among all the services. There might be a tendency to believe that this would equal out over time. Most sites, however, acknowledged a disproportionate collection rate between medical services and dental services, yet all programs failed to account for income accurately. This made evaluating the actual cost (revenue less expenses) for services impossible.

Accurate income data would allow programs to develop the

following information:

1. Income/expenditures for dental compared to other services.
2. Percent grant support for dental compared to other services.
3. Support for dental from each payor source.
4. Marginal (cost for the expansion of a dental program) cost of dental services.

BCRR data were better than ZBA data. However, BCRR data were inaccurate in one-third of the sites, despite rather clear-cut definitions of encounters.

In summary, the lack of accurate ZBA and BCRR data makes an accurate financial analysis of dental cost centers impossible.

REGIONAL DENTAL CONSULTANTS

A system of experienced and trained regional dental consultants, with adequate time to provide technical assistance and to review dental programs, would be very cost effective. Millions of dollars of grant funds are spent inefficiently due to lack of oversight and technical assistance. Many sites visited had not had a review or site visit by the regional dental consultant. Many of the "best" sites had serious problems that could be resolved with help from the regional dental consultant.

Unfortunately, the Regional Dental Consultants are generally unavailable and no system exists to fill that void. Under the technical assistance contracts in some regions, technical assistance is provided by dental consultants who lack the necessary experience to offer assistance to C/MHC dental programs. A vast number of C/MHC dental directors exist who have the expertise to provide help, and this group, under the direction of Regional Dental Consultants, should be available to provide the technical assistance needed. Some regions have so many C/MHC dental programs that the Regional Dental Consultant would be unable to review the sites even if unlimited travel funds were available and that was their only task. More such help is needed.

Clearly the existence of the new policy will help structure programs and provide direction. However, leadership needs to be in place to help programs comply with the policy and to develop innovative programs.

CASE STUDIES

The individual sites were visited over a two-day period. Each site review resulted in an analysis of the financial data, production information, clinic management, and statistical data.

Each site was written in a case study format, and the drafts were forwarded to the dental director and executive director. The case study findings were discussed with the Regional Dental Consultant and the project officer. The draft case studies were then modified, with input from the sites, and prepared in a final format.

The report format allows for the gathering of data and presentation of findings for each site, as well as comparisons among sites.

The case study results constitute the basis for the findings and recommendations of this report.

The data collected fell into two categories. The first was data that could be verified, e.g., productivity data. There were other data that were not valid; for example, some of the data used for ZBA, such as allocation of income by departments. The information was reported; however, it was usually reported by taking the same proportion of charges among departments and assuming that collections would be allocated accordingly. This was clearly not the actual collection amounts for six of the sites and may not have been the actual amounts in the other three sites, as dental fees were usually more likely to be collected than medical fees due to the elective nature of most dental procedures and many sites requiring payment before procedures were started.

PREVENTIVE SERVICES

TABLE I
Preventive Services

Sites	Hygienist FTE	Protocol Followed	Sealants Placed
1	0	No	No
2	1.0	Yes	Yes
3	1.0	Yes	Yes
4	0.6	Yes	Yes
5	0.2	Yes	Yes
6	0.8	Yes	Yes
7	3.0	Yes	Yes
8	0	Yes	Yes
9	3	Yes	Yes

Almost all programs responded to the initial draft policy documents and established some sort of prevention program--at least on paper. In all but four programs the follow-through was not comprehensive. Many sites developed a program simply to satisfy BHCDA policy, then was lax about implementation.

The elements of the prevention program almost always included the following:

1. Oral hygiene instruction, using assistants and hygienists and reinforced by dentists.
2. Professional prophylaxis, followed by topical fluoride treatments.
3. Placement of sealants in newly erupted teeth.
4. Testing fluoride content in the water supply and

providing fluoride prescriptions in fluoride deficient areas.

5. Training medical staff to provide oral health information.

The policy regarding prevention is clear, but too new to evaluate the impact or compliance at the centers.

Among expected preventive activities, sealant placement was less than expected in nearly every site, and fluoride prescriptions were almost nonexistent in communities without optimally fluoridated water supplies.

Most programs are adopting innovative systems to provide for the provision of oral health information by medical staff.

PERSONNEL -- STAFFING

TABLE II

Dental Director Characteristics

Site	Years at Center	Special Qualifications	Years as Director	Part-time Private Practice	Faculty Appointment
1	8	None	5	Yes	Yes
2	11	Retired military	11	Yes	No
3	3	None	1	No	No
4	3	Hospital experience	1	Yes	Yes
5	2	M.P.H.	1	No	No
6	2	None	2	No	No
7	18	M.P.H.	18	Yes	Yes
8	3	None	2	No	Yes
9	6	Private Practice	6	No	No

The stability of the dental directors in sites of this study is commendable. Almost half have been at their site more than five years. Almost half started as dental director, but often, a dentist started with a NHSC obligation and then was promoted to dental director when the former director left.

Recruitment and retention of dental directors, and of dentists, did not seem to be a problem. Sites 4 and 6, which have relatively inexperienced directors, have had other dentists on site for extended periods. Site 5 does have staff turnover and retention problems because salary levels at that site are low.

Faculty appointment was considered as a factor for review due to advantages for the center in having a university affiliation. This relationship generally brings students to the site and adds patient care services. In addition to raising the satisfaction level for all staff, the university tie tends to upgrade staff skills.

In facilities where the dental director also saw patients full-time, that individual usually had the largest patient load. A dental director should be appointed to that position on the basis of management and leadership expertise, together with obvious clinical skills. Appropriate distribution of the patient load and the application of proper management techniques should dictate that staff dentists see the bulk of the patients. A dental director simply does not have time to administer a program, and also carry the largest patient load. Also, all dentists at site studied, except for site 7, are paid on a strict salary basis with no incentives for patient load or production. Each center should give serious consideration to compensation based on a combination of base salary and incentive based on visits or production tied to RVU's.

The issue of dentists practicing at C/MHCs having private practices needs to be addressed. Two problems surfaced. There were instances of conflict of interest in which patients with a source of income were referred to private offices employing center staff. This results in a loss of income for the center and the center has the burden of providing care for patients without any income. Secondly, the coverage for center patients was inadequate in all but two sites due in many cases to a conflict with private practice.

Auxiliary utilization was less than optimum. Dental assistants were often not qualified and expanded duties were not incorporated to the maximum extent allowed by law. This was

often due to a lack of understanding by center administrators of the qualifications for dental auxiliaries and a lack of available trained personnel to provide expanded duties functions. In some sites visited, the assistants could not take radiographs of diagnostic quality. The issue is one that affects not only quantity of services provided, but quality as well.

Many programs are now reporting difficulty recruiting and retaining hygienists. There has been a drop in enrollment in hygiene schools while demand for hygienists remains high. The net result is that starting salaries, which are usually budgeted at \$18,000-\$22,000/year, are now \$25,000-\$30,000/year. Salaries for dentists average about the same (\$30,000) or only slightly more. Further, there is an oversupply of available dentists. Thus, it is possible to hire dentists at salaries that hygienists now demand although it may be difficult to retain them.

There is a distinct advantage in hiring a dentist rather than a hygienist. The dental hygiene no-show rate ranges from a low of 13 percent to a high of 55 percent. Hygienists who experience a cancelled appointment are almost totally unproductive during their down time. Dentists, on the other hand, can provide emergency care if a regularly scheduled patient doesn't show. Nearly every site had an abundance of emergency patients and down time was at a minimum; thus, it would be more cost-effective to hire dentists to do the work of hygienists, even if the cost was slightly higher.

The skills, experiences and interest of the dental director are critical to the success of the dental program. Excellent programs often deteriorate when a good dental director leaves.

It is difficult to characterize dental directors. However, those few that had either training in public health or private practice experience seemed better organized. It appears that for programs with four or more FTE dentists, organizational skills, such as those learned in a master's of public health program, are essential. Although it might not be practical to have such training in one-person clinics, some skills, or support from an executive director who has such skills, appear important, as is the need for assistance from a regional dental consultant or comparable person.

DENTIST COMPENSATION

TABLE III

Compensation Packages

Site	Dental Salaries	Dental Director Salaries	Retirement	Fringe Benefits	Continuing Education
1	\$40,000	\$44,000	None	Comprehensive	\$500
2	52,500	57,500	None	None	\$700
3	35,000	40,000	None	Comprehensive	40 hrs. pd. educ. lv./yr.
4	45,000	48,000	None	Comprehensive	\$1000
5	34,000	34,000	Yes	Comprehensive	\$100 + 8 days pd. educ. lv.
6	36,000	40,000	None	Comprehensive	\$800
7	46,000	87,000	Yes	Comprehensive	5 days pd. educ. lv.
8	35,000	40,000	Yes	Comprehensive	\$300
9	53,000	62,000	Yes	Comprehensive	7 days + \$1200

The salary levels are lower than salaries reported for dentists in private practice. In 1983 the American Dental Association (A.D.A.) and Dental Management both reported dentist net incomes of slightly over \$60,000/year. Comparing this figure to dentist salaries in the above table is misleading, due to the lack of a control for experience or age. With only a few exceptions, the age of dentists employed at the centers was considerably lower than the average age of dentists in private practice. Thus, any salary "gap," when compared to private practice, is certainly less than "average" figures would lead one to conclude.

The fringe benefit packages varied, but almost always included medical insurance, life insurance, and malpractice

insurance. The fringe benefit packages were competitive, with one glaring exception. Over half the sites offered no retirement benefits. This might be expected to affect recruitment and retention. It would seem difficult to attract dentists to a career in a C/MHC, given the low salary and lack of retirement benefit. The actual experience is difficult to document. One site, with no retirement, hired an individual who had already retired from a previous career that provided a retirement plan. Several sites had retirement plans, then eliminated them when budget crises occurred in 1980-1982.

STAFFING PATTERNS

TABLE IV

Staffing

Site	Staff/FTE Dentist	# Dentists	Dental Director Reports To	Expanded Functions
1	2	1.5	Medical Director	No
2	1.8	3.4	Executive Director	No
3	1	3.3	Executive Director	No
4	2.5	1.6	Executive Director	Yes
5	2.3	2.6	Executive Director	No
6	2.6	2.4	Dental Manager	No
7	1.3	16.6	Executive Director	No
8	1.5	4	Executive Director	No
9	2.2	4.6	Executive Director	Yes

The number of dentists and support staff per dentist varied. Generally, there were more than one assistant/dentist and productivity seemed to be directly affected by the lack of more than one assistant/dentist. The two programs with only one assistant/dentist had the lowest productivity. Program size was from two to five dentists, making it difficult to conclude

anything based on size. The one large center included a residency program, which precluded direct comparison. There is no economy of scale for the largest program. Based on this one large program in the sample, a conclusion could be that large programs are not as efficient as small ones. This should not be the case.

A reporting system that provides a direct line between the executive director and the dental director rather than the dental director reporting to the medical director appears to be more in favor. Arbitrary dental program reductions were less likely to occur when the dental director reported directly to the executive director. It should be noted that there was almost no communication between dental director and executive director in a number of sites. Several dental directors were not aware of their own budget. Others had not read the portions of the grant application pertaining to dental programs.

The use of expanded duties assistants is allowed by the State Practice Act at four sites visited. Interestingly, only two sites of the four took advantage of that. The other two sites had firm policies regarding hiring from the community, but no qualified expanded duties assistants were available in the community. Productivity would be expected to be higher when expanded duty dental assistants were used; however, no statistical relationship between productivity and the use of expanded duties existed in this study. No conclusion should be drawn from that finding since it is highly probable that were the expanded auxiliaries used appropriately, there probably would have been a higher level of productivity. As many studies have shown that productivity can be increased by the use of expanded duties assistants, their use should be encouraged. In a C/MHC program, their use also has cost implications, i.e., cost per unit of service can be reduced considerably.

CLINIC OPERATIONS

TABLE V
Basic Clinic Operations

Site	Eve./Sat Hours	Proc. Manual	Goals	After Hours Coverage	Completion	Recall
1	No	Yes	Yes	No	Low	No
2	No	No	No	No	High	No
3	Yes	Yes	Yes	No	Ave.	Yes
4	No	Yes	Yes	No	High	Yes
5	Yes	Yes	Yes	No	Ave.	Yes
6	Yes	No	No	No	High	Yes
7	Yes	Yes	Yes	Yes	High	Yes
8	Yes	Yes	Yes	No	High	Yes
9	No	Yes	Yes	Yes	High	Yes

The issue of evening and Saturday hours is interesting. The programs that discontinued Saturday and evening appointments all claim that the hours were never utilized. The programs with such hours claim that they are the most difficult to fill. It appears that the policy to encourage this practice may not be based on patient demand.

After-hours coverage is generally unavailable. This is not thought by programs to be a serious deficiency, yet many states regard lack of availability to be a violation of the State Practice Act and could be considered a violation of C/MHC legislation. This is a very difficult issue. There are one-dentist programs that could hardly be expected to attract employees if they were expected to be on call 24 hours/day; however, all programs should devise some means of "taking dental emergency calls."

The recall programs are all similar and are fairly

successful. Completion rates are highly dependent on the community but could also indicate a negative reflection on the dental program.

Most programs have procedures manuals which are both out-of-date and not used. Most programs have goals and objectives which are not measurable. The use of quantitative objectives with periodic management assessment would allow necessary accountability and document program success.

FACILITIES

TABLE VI
Facilities

Site	Sq. Ft./FTE	Panoramic Machine	Units/FTE
1	550	No	4
2	825	Yes	2
3	900	No	1
4	562	Yes	2
5	1000	No	2
6	575	No	2
7	323	Yes	1
8	450	Yes	2
9	520	Yes	3

Equipment was generally satisfactory although budget reductions have prevented some replacements. There was one facility, Site #1, that had equipment that was unusable; however, there were enough other units that were functional.

The space was adequate in nearly every site. Only two facilities had fewer than two units/FTE and in both cases, sufficient auxiliary help did not exist to utilize more units.

Only one program had no panoramic machine and no arrangement to take such films. Other sites made arrangements with private practitioners. There is not, necessarily, a need for a panoramic machine in every site.

LEVELS OF SERVICE

The BHCDA dental policy defines all dental care into levels: Level I emergency, Level II primary prevention, Level III restorative and basic treatment services, and Level IV rehabilitative

services such as prosthetic appliances.

TABLE VII

Services by Levels (Percent of Relative Value Units (RVUs))

Site	Level I	Level II	Level III	Level IV
1	30	31	27	12
2	27	6	50	17
3	24	12	37	27
4	7	30	52	12
5	37	22	37	4
6	10	19	54	18
7	14	31	40	15
8	9	17	49	25
9	5	22	58	15

An RVU system is a means of counting all services on an equivalent basis, rather than counting the various types of dental services. One RVU equals 10 minutes of dental treatment time. As an example, a simple filling would be expected to take 20 minutes. Thus, two RVUs are assigned to that service. Many programs grouped data, such as "exams," making it difficult to tell if it was an emergency (Level I) or routine services (Level III). Further, endodontic procedures could be Level I or Level III. Level IV service data are very easy to distinguish, thus, there are few if any questions regarding that level of assignment. Almost all programs are concentrating their efforts on Levels I, II, and III. Those programs providing Level IV services almost always charge patients and collect enough revenue so that grant support is not used for this service.

Federal legislation and policy require programs to provide Levels I and II. If Level IV services are expected to be provided, funding must come from other than grant support. Table VI demonstrates that the sites visited are in compliance with the policy.

PRODUCTIVITY

TABLE VIII
Production

Site	Production Costs	Costs/ FTE	Production/ FTE	Enc./ FTE	No-Show
1	1.23	174,000	223,100	3491	55%
*2	1.70	125,758	214,045	2211	15
3	1.02	130,660	136,750	2448	17
4	1.00	172,000	182,760	2000	16
5	1.67	110,670	160,480	3848	33
6	1.35	184,420	247,658	2500	14
7	0.65	147,304	97,901	1684	20
8	1.42	155,244	219,790	2350	50
9	1.16	175,316	203,275	2466	13

TABLE VIII (CONTINUED)
Production

Site	RVUs/ FTE/ Month	Fill/ Extract	Users/ FTE	Costs/ User	Costs/ Encounters
1	760	0.55	2076	83.82	49.84
*2	893	0.85	908	138.50	58.88
3	490	1.32	1147	113.91	53.37
4	554	8.13	778	221.08	86.00
5	666	0.84	1360	81.38	28.76
6	749	4.28	675	273.21	73.77
7	369	4.36	628	234.56	87.47
8	673	4.58	809	191.90	66.06
9	585	5.96	897	195.45	71.09

*The production data for this site was supplied by the site and was not in a format that could be compared with computer-generated data.

All the programs visited, except Site 7, were both productive and cost-effective. That is, there were a significant number of RVUs/dentist provided, and the value of the services provided was more than the cost of the services. The most significant numbers are the production/costs and the RVUs/FTE/month. All but Site 7 were at or near the goal of 500 RVUs/FTE/month, a reasonable expectation. The median was significantly above that figure. In addition to provider skills motivation and availability, factors affecting production are scheduling, no-show rate, availability and skill of assistants, patient demand, and facilities. Clearly, most of the sites were productive.

All but Site 7 were cost-effective. That is, the value of the production, divided by costs, was greater than 1.0, or the value of the services provided exceeded the costs. Given that C/MHCs frequently treat elderly patients, AIDS patients, and medically compromised patients, and that these patients require extra time and more auxiliary help, it is a challenge to be productive.

The cost/FTE dentist varies, but the production should be related to that cost. As auxiliaries are added, costs increase, although there should also be an increase in production. The costs/FTE are all in a fairly small range. The production value, however, varies tremendously, from a low in Site 7 of 97,901 to a figure 250 percent higher in Site 6.

One figure that needs to be calculated by every site is the marginal cost of adding another dental team and the marginal production and income another dental team would produce. Often, the addition of dental personnel to an operating unit, significantly reduces the cost per unit of service.

The encounters/FTE, except for Site 7, were all in an acceptable range. The users/FTE were all reasonable. The fill/extract ratio, combined with the encounters/FTE, the no-show rate, the users/FTE and the RVUs/FTE/month together describe the type of dental services provided. High no-show rates and high users/FTE generally show that the program is oriented towards Level I (emergency) services. The low fill/extract ratio also demonstrates a high percentage of Level I services, with little emphasis on complete care and the preservation of teeth.

The costs/user and costs/encounter, are dependent upon the character of the program. As an example, a program oriented toward emergency services (Level I), would have more patients, with fewer visits/patient. The effect would be to have more encounters and more users/FTE. Further, such a program would have lower costs/user. Conversely, a site providing compre-

ensive services would have higher costs/user and costs per encounter but would be making a notable contribution in terms of improving the patient's oral health status.

The more Level I (emergency - episodic) services provided, the lower the cost/user and cost/encounter should be.

Compared to the other eight sites, Site 7 was not productive. Thus, it was difficult to characterize Site 7 on this criteria.

TABLE IX
Fee Schedules

Site	2-Surface Amalgam	Extraction	Complete Denture
1	48	32	240
2	27	25	330
3	25	17	300
4	30	20	400
5	30	25	350
6	30	25	350 (referred out)
7	40	30	350
8	25	20	300
9	35	25	350

The fees varied, as would be expected. Some programs assigned fees too high for some services and too low for other services. There were programs which did not base their fees on actual cost or prevailing fee schedules. C/MHC regulations indicate fees should be based on the costs of providing the service. In some cases, the fees were unusual enough to conclude that there was no rational basis for them. The sliding fee scale was generally based on the amount an individual could afford to

pay. Sites 1, 3, and 8 had relatively low fee schedules. A low fee schedule decreases income from third parties and is discussed in Recommendation #6.

FINANCIAL DATA

One of the objectives of this study was to analyze financial and related accounting data of the various dental cost centers, however, it was apparent that accurate and useful financial information concerning dental performance was not readily obtainable. A significant amount of financial data were available, though, and that was used in the findings and recommendations regarding costs/users, costs/encounter and other items in this report.

In most instances, dental revenue and expense data were not kept separate from medical and overall financial information. This lack of dental record keeping as a separate unit was, and will continue to be, a major obstacle in attempting to compare and/or evaluate dental programs. In addition, each facility examined seems to have different methods of allocating general administration costs between medical and dental, making it difficult to assess actual costs for dental care.

Attempting to reconstruct a zero based cost center analysis from the information that exists provides questionable estimated results. A more reliable financial analysis could have been performed with the extensive participation of each facility's accounting staff. However, it would have required an expenditure of time and effort comparable to that required to prepare yearly audits by the respective certified public accounting firms, approximately \$5,000 to \$25,000 depending on the facility size.

A. Accounts Receivable

A comparison of dental patient accounts receivable is almost impossible and is an example of general problems in assembling financial data. Most C/MHCs do not keep medical and dental patient accounts separate, making a comparison impossible. Even if the information were obtainable, a comparison between centers would have questionable value because each organization's percentage of patient participation in dental bills varies. Some centers write off balances very soon, making little effort to collect, while others leave balances on the books for long periods of time, spending far too many resources in collection attempts.

A site that writes off balances with little effort to collect after a short period appears to look as if their aging and collection was much superior, but actually revenue collection opportunities were diminished, whereas lengthy involved

collection attempts done by other centers were not cost effective. Most facilities do not set up a separate bad debt reserve for dental and various other cost centers, thus equalizing the figures on this basis is impossible.

At some centers, it was found much postage and time was consumed by sending out statements for small balances long past due. We strongly suggested that those centers currently billing patients for small balances reexamine this policy. It is often much more cost-effective to install a visit charge to be paid by the patient at the time of appointment, prior to or after seeing the dentist.

B. Revenue Collection

Revenue collection is also a problem. Generally all funds collected are credited to one general account. As a result, it is impossible to identify total dental revenue received and to identify the various sources of dental revenue.

We would strongly recommend a uniform cost center statement be developed to be completed and submitted at the end of each grant's fiscal year. Only in this way can a proper ZBA analysis be performed and cost centers be analyzed and compared. We have designed a suggested form for consideration (see Appendix A).

C. Cost Center Budget Management

Anyone given the title "dental director" should play a direct role in establishing and overseeing the departmental budget. In most instances, the dental directors have not been given any role in the budgeting process at the facilities examined. The effectiveness of the dental program depends on the dental director being involved in the budget process.

When examining the procedures for purchasing dental supplies and lab services, it was found that many of the facilities had no formal standard procedures. Each facility should adopt procedures to formally negotiate with vendors and dental laboratories and to enter into contractual arrangements for supplies and services. Savings through these procedures would be between 10 and 20 percent.

D. Broken Appointments

We suggest that all facilities establish a charge for appointments not kept. Patients will value the doctor and staff

time when they themselves put a value on it. It is understood that usually the amount charged for broken appointments will be relatively small (\$3 to \$5). However, this is not viewed as a revenue producer but as a method to instill in the patients the value of keeping their dental appointments.

No-show rates almost always decrease when patients are charged for not keeping appointments. No-show rates exceeding 20 percent create havoc with schedules. It is important that there is an educational program to decrease no-shows. Every study of no-shows demonstrates the fact that only a few patients, who continually do not keep appointments, cause this problem. The issue usually comes down to whether or not programs will allow this to continue or will prohibit such patients from making scheduled appointments.

Some centers report that when dentists' salary is dependent on production, no-show rates drop significantly.

UNIQUE FINDINGS

The program reviews of this study revealed certain information, which generally did not fit the categories discussed thus far. These items are too important to omit, but not significant enough to merit their own section, thus they are discussed as "Unique Findings."

1. To comply with the recently issued dental policy, a dental assistant might be assigned to the medical clinic to provide oral health instruction, orient the medical staff on dental prevention and to coordinate referrals. Paramedical personnel could also be trained to do this. A specific protocol for prevention, including fluoride histories, as part of the medical chart, to be done by allied health personnel is another means of implementing cost-effective dental prevention as required by the policy.
2. Some equipment, such as panoramic machines, can be rented on a per use basis, saving the capital outlay, presuming a need for such a piece of equipment.
3. A prevention form in the dental chart will often increase the Level II (prevention) services provided. The most significant impact to be made by C/MHC on individuals and community oral health is through prevention.
4. A separate log of patient balances, even if they are kept in a billing department, and not allowing patients to owe more than a predetermined sum, increases collections.
5. Use of a referral book, to record all referrals to specialists, allows programs to call at a later date to ensure that referrals are kept and reports come back to the site.
6. Use of a log book to record all cancelled appointments, allows sites to document no-shows and check the status of treatment in progress.
7. Maintaining an extra "doctor" space on the appointment schedule and using this to note if a high-risk patient is appointed, to alert the staff, as well as keeping the number of high-risk patients scheduled at one time to a minimum.
8. Migrant Health Centers must recognize that peculiarities

of the migrant populations served necessitate special planning and consideration to adequately serve that special group of the underserved. At a minimum, the following items from successful migrant programs should be considered:

- a. A special dental health plan must be developed for migrants. A data based needs/demand should be used in planning to identify the special dental needs and particulars of migrants. The dental plan must address issues such as length of stay, transportation and working hours.
- b. Linkages with migrant education providers is essential, as are linkages with AHECs, universities, and dental schools with special state health department manpower extension programs and targeted migrant programs.
- c. Expansion of the hours of operation of the dental clinic is important. Migrants can often only seek services in the traditional nonworking hours.
- d. Transportation is an issue which must be addressed in any sound plan for migrants. Many migrant families do not travel in the "family car."
- e. Services must be adjusted on a seasonal basis; thus staff must be increased when migrants are in the area, and decreased during other periods of the year.

CHARACTERISTICS OF A SUCCESSFUL PROGRAM, AS DEFINED BY THE DENTAL
ADVISORY COMMITTEE

During the development period of this contract, and throughout the study, the Advisory Committee made recommendations based on criteria they used in the management of their successful dental programs. The following is a synthesis of the success factors as defined by the Advisory Committee.

1. A defined mission statement.
2. Measurable goals, with objectives that have time-tables.
3. The existence of a process to evaluate program progress.
4. The presence of written protocols.
5. The presence of a Quality Assurance program.
6. Linkages with public and private groups.
7. An operational continuing education program.
8. Written policies and procedures.
9. An effective prevention program.
10. Adequate facilities and equipment.
11. Two operatories/dentist.
12. A good support staff.
13. Well trained and motivated providers.
14. A strong leader as a dental director.
15. Written intra-agency and interagency agreements.
16. Operating the dental department as an independent cost center.
17. Defined billing and collection policies and procedures.
18. A process for addressing and resolving patient complaints.
19. A process for conflict resolution within staff.

20. An organizational structure with the dental director reporting to the executive director.
21. Exit interviews with staff.
22. A good Management Information System.
23. Being cost effective.
24. Written job descriptions.
25. An orientation program for all employees.
26. A sound recruitment and retention philosophy including fair wages and fringe benefits.
27. After-hours coverage.
28. Providing emergency services.

STATISTICAL INDICATORS OF SUCCESSFUL PROGRAMS

1. The presence of the same dental director for five or more years.
2. Having at least 1.5 assistants/FTE dentist, which leads to increased productivity.
3. Having no more dentists on staff than can be appropriately managed. This may be only three to five dentists. For larger staffs, very strict attention must be paid to management techniques and capability or cost-effectiveness will suffer significantly.
4. The provision of fewer than 20 percent of the total effort for Level IV services, irrespective of grant support.
5. The presence of at least 400 sq. feet/FTE dentist.
6. The provision of after-hours coverage.
7. At least 750 users/FTE.
8. A fill/extract ratio between 1 and 6. Much lower than 1 means that there isn't an emphasis on secondary prevention. A figure higher than 6 may indicate a neglect of emergency patients.
9. Production value/costs exceeding 0.8, indicating that the dollars invested are being used effectively.
10. Encounters/FTE greater than 2300.
11. A no-show rate below 20 percent, so that productivity is not disrupted and delays between appointments can be minimized.
12. RVUs/FTE/month greater than 500, to assure appropriate productivity.
13. More than one dental unit/FTE, to increase productivity.
14. Costs/user less than \$200.
15. Costs/encounter less than \$75.

PREPAID CONTRACTS

Currently, there is not much activity with capitation reimbursement for C/MHC dental care. Programs that describe themselves as participating in prepaid reimbursement have very few patients. Further, few can document the impact of capitation programs or measure their profitability. This is merely an extension of the problems mentioned earlier regarding the quality of financial data. Programs with capitation patients simply are not tracking the income for this population group, nor the services provided, to determine if capitation is an advantageous system.

Typically, the C/MHC that has a capitation dental program, does so because it enters into an agreement to provide medical care on a capitation basis and is required then to offer dental care on the same basis.

Very few of the C/MHCs that provide care on a capitation basis, have contracts to provide care to patients not eligible for care through Medicaid. The programs that do provide care to non-low-income patients have few patients covered through capitation.

There are four major reasons why capitation plans for non-Medicaid patients have not had wide acceptance in C/MHCs, as follows:

1. C/MHCs' mission is to serve low income populations. Their populations generally are not in a plan, other than Medicaid; thus, a private capitation plan would necessitate serving more paying patients and detracting from the mission.
2. C/MHCs often report some friction between themselves and the private sector. Actively seeking non-low-income patients, particularly through capitation, viewed by the private sector as threatening, would certainly cause more problems.
3. There is concern about adverse selection, if there is a network capitation plan.
4. The lack of full service multiple sites makes offering their own plan not a viable option.

The above concerns are legitimate, and are a real impediment to further rapid growth in this area. It is unlikely that these

concerns could be adequately addressed, and therefore it is unlikely that private capitation plans will, or could become, significant in C/MHC dental programs in the near future.

Other alternative delivery system plans, such as PPOs, are unlikely to have an impact on C/MHC dental programs for reasons cited in the literature review. They currently have no impact on C/MHCs.

The area of capitation that is profitable, and is likely to grow and have an impact on C/MHCs, is the contracting for Medicaid patients. This is a patient population that the private sector does not aggressively solicit, but might in the future as the profit potential is recognized.

Network capitation may be a viable option for C/MHCs. As part of a system of independent contractors, centers would share the risk with private practitioners. Any capitation plan has the potential for adverse selection, but well managed care programs can overcome that disadvantage. C/MHCs are used to adverse selection.

The provision of dental services to Medicaid patients under a capitation contract generally is advantageous due to the following:

1. A wider range of benefits than under fee-for-service.
2. Less delay for reimbursement.
3. Wider discretion in the provision of services.
4. Higher reimbursement rates/service than under fee-for-service.
5. Larger benefits attracting more patients.
6. Less paperwork.
7. More control over the patients' care.

The private sector is now recognizing the profitability of treating Medicaid patients through a capitation contract. In fact, one project (not in the study) is realizing a profit with a monthly premium under \$2.70/patient for Medicaid services. C/MHCs will need to aggressively seek Medicaid capitation

contracts because of their profitability, as well as to keep their market share of patients with a source of payment.

In summary, C/MHCs should be expanding their services to include developing or participating in capitation contracts for Medicaid patients whenever allowed.

RANK-ORDERED CHARACTERISTICS OF SUCCESSFUL PROGRAMS

The following are rank-ordered characteristics of successful C/MHC dental programs.

1. All the productive sites had dedicated and competent dental directors. Some were very experienced. Some were not experienced. Some were from either the community the C/MHC served, or from similar communities. The key seemed to be that most dental directors had some mechanism to become skilled in administration. This includes the establishment of policies by a prior dental director; training in administration; support from the executive director; or outside technical assistance.
2. The productive programs had productive dental directors. This is similar to the above finding, however it relates to clinical productivity. The productive programs that recorded clinical productivity, by provider, all showed that the most productive dentist was the dental director. Leading by example appears to be an indicator of a successful C/MHC dental program. However, the dental director should not carry a disproportion of the clinical load.
3. Successful programs had production value/costs greater than 1.0. This was a clear characteristic of successful programs and the single most important statistical piece of information.
4. The production of more than 500 RVUs/FTE/month, exclusive of orthodontic procedures. Successful programs produce an abundance of services targeted to the need of their patient population.
5. The production of at least 2300 encounters/FTE/year to at least 750 users/FTE/year. Successful programs spread their services to at least 750 users/FTE/year.
6. The lowering of costs/encounter to below \$75.
7. The lowering of costs/user to below \$200.
8. Staffing patterns that provide at least 1.5 dental assistants/FTE dentist were more successful in producing services to their clients.
9. Meaningful prevention programs, which included the placement of sealants were found in productive sites.

10. Direct reporting links between the executive director and the dental director seem to be desired by dentists and could be a success factor.
11. Good lines of communication between the executive director, the medical director and the dental director are present in successful programs.
12. Control of the no-show rate (below 20 percent) is found in successful programs.
13. Successful programs spend less than 20 percent of their effort on Level IV services.

RECOMMENDATIONS

1. Programs should be required to report a sufficient amount of information regarding their financial data, program performance, and productivity, so that they can be properly evaluated.

This includes accurate BCRR data; ZBA data which accurately separates income and expenditures by department; and specific production data, including production value, total costs, RVUs/month, services produced by levels, cost/user, and costs/encounter.

2. Regional Dental Consultants should be allowed to provide more technical assistance and should be advocates for dentistry in C/MHCs. The top 15 C/MHC dental programs report a collective budget of almost \$20 million/year. The funds saved by such assistance would certainly exceed salaries of the regional dentist involved.

3. Dental directors need to be managers of their departments, and to do so they need complete BCRR and budget data to participate in department decisions. They should report to the executive director, or have access to the necessary information to direct the dental program.

4. A national committee of C/MHC dentists should be established as an advisory body to the PHS and for C/MHCs.

5. All programs should be required to document their method of providing emergency services (Level I), including 24-hour coverage.

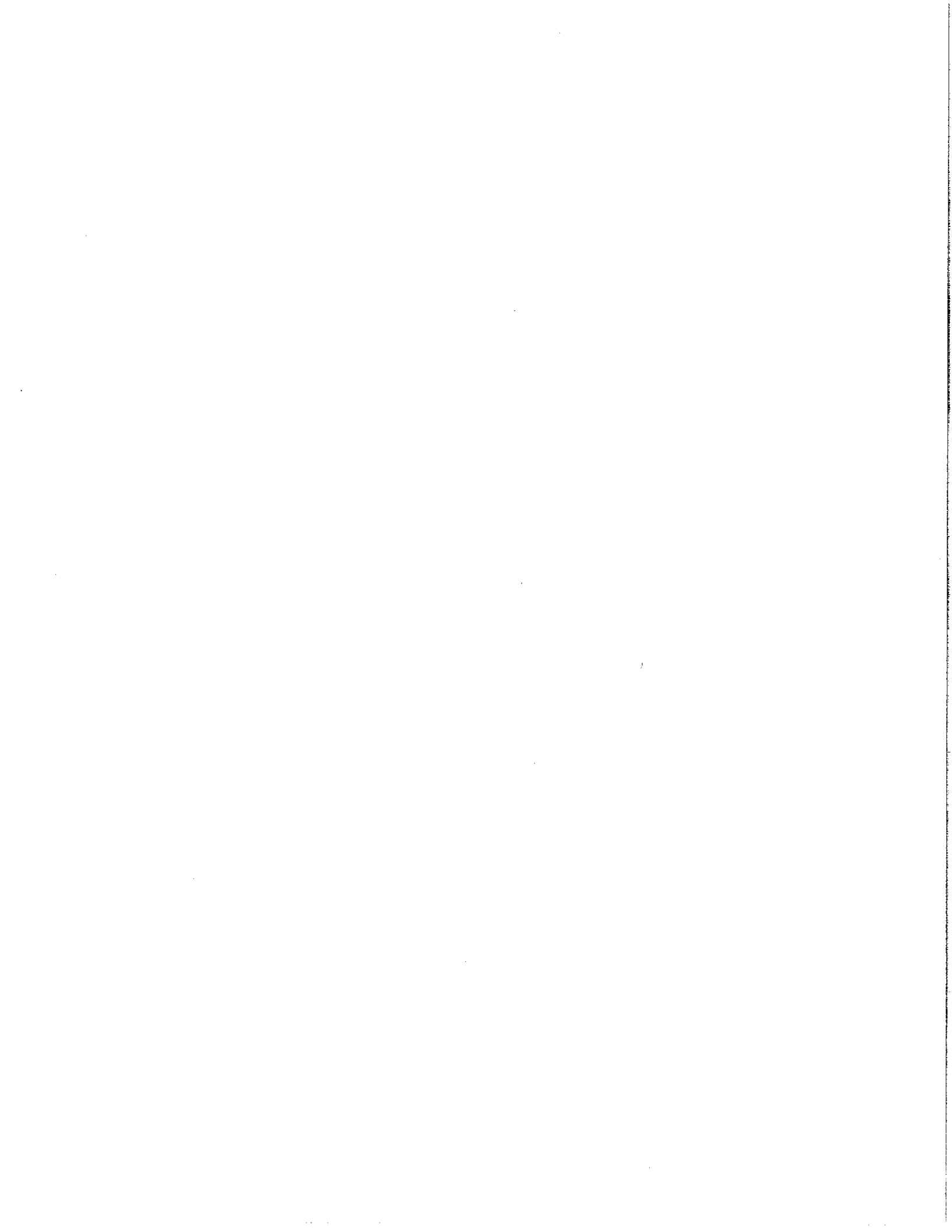
6. Revenue could be enhanced through Medicaid capitation programs. Further, fees should be established which are based on costs but close to community levels. Referring Medicaid patients to the private sector should be absolutely prohibited.

7. To enhance compliance with BHCDA policy regarding Level II services, programs should be required to develop a one-page sheet for the medical record, indicating preventive measures to be done, with a space to indicate completion.

8. Contracted care should be documented, with all reports submitted (BCRR, ZBA, encounters, costs) as if care was provided on site. Programs should be required to calculate

costs for dental care including the net cost to add 1 FTE dentist and support staff. The exact methods of allocating overhead costs should be understood.

9. BHCDA and NACHC should work together to establish a training program for dental directors.
10. Methods to reduce broken appointment rates should be employed so that care can be spread to as many patients as possible in an orderly fashion. Methods known to be successful include calling to confirm appointments, not providing multiple appointments, charging for broken appointments, and limiting access for repeat offenders.
11. The dental director position is a full-time position and must be devoid of conflicts of interest.



APPENDIX A

PROPOSED DENTAL FINANCIAL STATEMENT
(Example)

Revenue:	\$	%
Governmental grant		
Private grants		
Other state or municipal funds		
Patients		
Other (specify)		
	-----	-----
Total Revenue	-----	100%_
	-----	-----
Expenses:	\$	% of Revenue
Salaries:		
Dentists		
Auxiliary staff		
General administration (receptionists)		
Employee benefits		
Employee taxes		
Dental supplies		
Dental laboratory services		
Facility rent (based on dental sq. ft.)		
Equipment rent (dental equipment & equip. used in dental department)		
Utilities		
Dental referrals (professional)		
Bad debt and collection expense		
Professional services (Note 1)		
Office services (Note 2)		
Executive expense allocation (Note 3)		
Professional liability insurance		
	-----	-----
Total expenses	-----	%
	-----	-----
Net income <loss>	-----	-----

Note 1: Professional services would consist of accounting (CPA firm) and legal fees.

Note 2: Office services would consist of the following or allocations of the following:
 Laundry
 Janitorial
 Office supplies
 Printing and stationery

Insurance (other than professional liability insurance)
Data processing
Repairs and maintenance
Meetings
Travel and entertainment
Membership dues
Subscriptions
Taxes (other than employee related)

Note 3: Executive expense allocation--This expense represents executive allocated time spent on dental related matters.

Note 4: It will often require that allocations be made at time a bill is paid in order to properly allot to the dental department its proper share of costs.

Note 5: The above proposed financial statement should be provided by total dental revenue and expense and also broken down and provided by full-time equivalent dentist.

This information will not be usable unless an accurate system is devised to collect for services at each cost center, or allow payment to be directed to each cost center.