Explorations of Safety-Net Dental Practice Models

by

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THESIS

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ABSTRACT

Purpose: The objective of this study is to explore the infrastructure of safety-net dental care delivery in Alameda County to determine if it constitutes a sustainable, comprehensive system to provide dental care for the underserved pediatric population in the county. The study also aimed to determine how current policies hinder or help to sustain existing models.

Methods: The study utilized mixed methods including a literature review, background research of existing programs, and an evaluation of current policies. Ten program directors encompassing fifteen safety net dental care delivery models were interviewed followed by a quantitative and qualitative analyzes of the data.

Results: The evaluation reveals that safety-net dental care delivery in Alameda County has the attributes of a system but the system is not ideal. Gaps identified within the system include poor program communication and integration; lack of an organized and sustainable school-based program; inadequate focus regarding prevention of dental disease; inadequate access to specialty care; lack of quality analysis of the system; and lack of policies that adequately support the safety-net dental care delivery for the pediatric populations.

Conclusions: Addressing the identified gaps within the Alameda County safety-net dental care delivery system will improve the delivery of and access to dental care for the underserved pediatric populations. In the era of health care reform, it is critical that the dental profession evaluate the oral healthcare delivery models in place to ensure that systems are adequately and efficiently providing comprehensive, quality dental care.
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1. **INTRODUCTION**

Lack of access to oral health care, particularly for children from low-income and minority families, has become an increasingly important topic in health services research. A thorough investigation regarding the inability of the current system to prevent oral diseases, eliminate oral health disparities, and ensure access to basic oral health services is critical to improving the health of this population.\(^1\) Oral health disparities are especially prevalent in areas with culturally and economically diverse populations, such as California. The first aim of this study is to provide data about existing dental care delivery programs in California. The second aim of this study is to determine if a system of dental care delivery exists in Alameda County. The final objective of the study is to make recommendations to improve the safety-net dental care delivery system. This will be the first study in the dental literature to analyze an entire community to answer the questions: "Does an oral healthcare delivery system exist here?" and "If so, what is the quality of the system and what improvements are necessary to increase access to care?"

2. **LITERATURE REVIEW**

2.1 **Defining the problem**

An epidemic of dental disease is compromising the health and well-being of America’s children. Dental caries is the most chronic childhood disease and is seven times more prevalent than asthma.\(^2\) Dental caries is no longer pandemic. Eighty percent of tooth decay is now experienced by twenty-five percent of children in the United States.\(^3\) The greatest incidence is confined to a subset of the population from urban and
low-income families. The Healthy People 2010 objectives included the following goals for children:

1. decrease the proportion of children and adolescents who have dental caries in their primary or permanent teeth and who have untreated dental decay,

2. increase the proportion of children who have received dental sealants on their molar teeth, and

3. increase the proportion of children who use the oral health care system each year.

Progress towards these objectives has been mixed. There has been a decline in the caries rate of the permanent dentition, but the largest declines have been among non-Hispanic whites and among those living above 200% of the federal poverty level. Dental caries in the primary dentition of young children is rising, especially in low-income and culturally diverse populations, despite an increase in the number of community health centers with an oral health component.

The oral health of California’s children is substantially worse than the national objectives. The state is home to the most economically and culturally diverse population in the nation. California receives the largest percentage of new immigrants arriving in the U.S., and at least one in five of these immigrants are children. A disproportionate share of immigrant children live in families at or below the federal poverty level, have no medical or dental insurance, and are at higher-than-average risk for adverse health conditions, including oral disease. Early childhood caries (ECC) – defined as the presence of one or more decayed (non-cavitated or cavitated lesions), missing (due to
caries), or filled tooth surfaces in any primary tooth in a child 71 months of age or younger – is more prevalent in California than in any other part of the country. The access-to-dental-care problem is further emphasized by the 2006 California Smiles Survey. The report revealed that 53.6% of kindergarten children in California have experienced dental decay; 28% have untreated decay; and 4% are in need of urgent care due to pain, abscesses, and/or infection. Seventeen percent of kindergarten children have never been to a dentist. For children who participate in free and reduced-price lunch programs, the statistics are worse: 72% have experienced decay, 33% have untreated decay, and 5.5% have urgent dental care needs. Research findings from the California Health Interview Survey conducted by the UCLA Center for Health Policy and Research showed that 29% of young California children do not get regular dental care, the great majority of these children have never visited a dental provider, and some Assembly and Senate districts have significantly lower rates of regular dental visits than the state average. These findings illustrate that the rate of dental disease is still high in California, and that there exists disparities in access to dental care among California children based on income and ethnicity.

2.2 Key Concepts

For the purposes of our study the following definitions are used to describe the key concepts:

- **System**: a group of interacting, interrelated, or interdependent elements working in synchrony to form a complex whole.
• **Healthcare system**: a collection of entities whose function is to meet the health care needs of its target population.\(^{10}\)

• **Safety net providers**: entities that "organize and deliver a significant level of health care and other health-related services to uninsured, Medicaid, and other vulnerable patients."\(^{11}\)

• **Dental home**: “the ongoing relationship between the dentist and the patient, inclusive of all aspects of oral health care delivered in a comprehensive, continuously accessible, coordinated, and family-centered way.”\(^{12}\)

2.3 Dental Literature

In the dental literature, increasing access to care has been studied at the individual program level but not at the systems level. A review of the dental literature only highlights a few ongoing dental programs that try to increase access to dental care and their outcomes. The individual studies do not demonstrate how a program ensures a patient who requires access to dental care is identified, given necessary preventive and restorative treatment, and then placed on a regular recall schedule. Examples include the following publications, which discuss individual program evaluations and their outcomes but do not take into account the systems in which they are embedded. Wysen et al. described a public health-based program in Seattle integrating preventive dental and medical care by cross-training medical and dental providers. The study demonstrated doubling in the rates of oral and medical services in the form of fluoride varnish delivered to young, at-risk children.\(^{13}\) However, the study did not provide a description of where the children then receive dental care if they require dental services. Schoen et al. summarized the results of an evaluation of the Hospital-Sponsored Ambulatory Dental
Services Program funded by a foundation that donated money to 25 hospitals to increase
dental services. The results of the study were disappointing and showed that while the
number of new patients increased, the number of disadvantaged persons did not. In
addition, continuity of care worsened. The author concluded that these results
demonstrate that a hospital setting may not be able to provide the continuous,
comprehensive care required for good oral health care without policy changes.\textsuperscript{14} Mobile
programs provide an innovative solution for bringing dental care to underserved children,
and, when operated in conjunction with schools, can eliminate transportation problems
and missed appointments.\textsuperscript{15} A comprehensive study of the California mobile dental
programs demonstrated that they are a highly variable, but important strategy for bringing
dental care to many underserved populations.\textsuperscript{16} Bagramian conducted an analysis of a
school-based program demonstrating that such a combination of preventive regimens
significantly reduced dental disease in a school population, but stressed that such
programs must be comprehensive and continuous for maximum benefits to occur.\textsuperscript{17}
While individual community programs strive to improve oral health, there are limitations
that significantly hinder their ability to provide comprehensive and continuous dental
care for children. The studies mentioned above do not describe an organizational
structure that is necessary to provide a complete dental care delivery system that includes
access to preventive and treatment services. To establish such an entity, evaluations of
programs must not be limited to individual programs and their outcomes. A study of an
entire dental care delivery system in a community will provide greater information
regarding the impact programs are having as a healthcare system to improve the oral
health of the children in their community.
2.4. Medical Literature

The history of dental practice and medical practice has been that of the sole practitioner whose values and skills define the practice. Recently, the study of health care use and access has shifted from an individual focus to a combination of the individual, the healthcare system, the external environment, and the effects that each component has on the others.\textsuperscript{18} Cowen et al. develop the concept of an organizational structure necessary for the creation of an ideal healthcare delivery system. They suggested that medical care exists as micro-systems or personal care delivery teams composed of the patient and the care giver. What appears to be lacking is a formal, recognized, organizational entity for the advocacy and oversight of the micro systems.\textsuperscript{19} Cowen described the function of this entity is to ensure that the care being delivered within the individual systems is safe, patient centered, effective, efficient, timely, and equitable. These system level issues are an important area of research; as health care becomes more specialized and complex the coordination of these individual elements becomes important to achieving both individual and population level outcomes.

This same system paradigm can be applied to the dental care delivery system which consists of a similar matrix of clinical care involving only the patient and care giver. Dental care delivery lacks any organizational entity, similar to the one proposed by Cowen et al. for medicine, that functions to ensure access to comprehensive dental care for patients. Individual safety net programs are not able to meet all the particular needs of a patient, much less of an entire community. Thus, an analysis that moves beyond individual programs or sites of dental delivery is necessary to evaluate access to care within a broader systems framework.
2.5 Theoretical framework for system analysis

Actual studies of a system of dental care delivery are scarce. However, the existing literature provides multiple theoretical frameworks to analyze the dental care delivery models in a community. In this study, specific data regarding the individual programs and their functions and interactions with other programs will serve as the building blocks for a system-wide analysis of a community’s dental care delivery. Donebedian’s framework of program evaluation establishes a guide for program description. For this study, I have interpreted Donabedian’s tenets for program evaluation as follows:

1. **Process**: providing a description of the individual practitioner’s delivery of care with regard to diagnosis, treatment, prevention, recall, and social and behavioral management. Programmatic data will be used to determine the process.

2. **Outcome**: every program has a goal, which may range from a change in oral hygiene habit or diet to delivery of dental services and care. Community data will be used to determine outcome.

3. **Structure**: the properties of the resources used to provide care and the manner in which they are organized. Organization and policy data will be used to determine structure.

The concepts of process, outcome, and structure of each program will be used as groundwork to determine how each program fits into the organization of the safety-net dental care delivery of a community as a whole.

Tomar and Cohen describe the characteristics of an ideal system for delivering oral health care service (Table 1). By determining where our study site falls short on the
attributes of an ideal system, recommendations can be made to create a more comprehensive care delivery system. To build on Tomar and Cohen’s ideal attributes, additional frameworks are employed in this study. The literature provides frameworks to measure the many of the attributes. For simplicity sake I chose two attributes that seemed most critical for the system study: quality assessment/assurance and sustainability of the system.

Table 1: Attributes of an ideal oral healthcare delivery system

<table>
<thead>
<tr>
<th>Attributes of an Ideal Oral Healthcare System</th>
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<tr>
<td>Integrated</td>
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<tr>
<td>Emphasis on health promotion and disease prevention</td>
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<tr>
<td>Evidence-based</td>
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<tr>
<td>Cost-effective</td>
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<td>Sustainable</td>
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<td>Equitable</td>
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<td>Quality Assessment and Assurance</td>
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<tr>
<td>Culturally Competent</td>
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Quality assessment is the act of evaluating the quality of patient care rendered by a component of the care delivery system, be it an individual provider or practice or a group of them.\textsuperscript{21} To evaluate program quality, we will utilize some of the program quality indicators cited in the literature review conducted by Maj Ader et al. The authors list fourteen quality indicators that establish important aspects of a successful health
promotion project. These indicators can be used as a template for both planning and auditing quality assurance. For example, the indicator “networking” describes how a program spreads a message within a community to a target group. Evaluation of each individual program’s network or referral pattern will enable us to study the communications between the programs, giving us a more complete picture of dental care delivery in the community.

The literature also demonstrates that much effort has been placed on proposing models for the exploration of sustainability. Shediac-Rizkallah et al. describe indicators that can be used to determine the sustainability of individual programs. Our study will utilize these indicators to establish the level of sustainability of the individual safety net programs in Alameda County, as well as the entire dental care delivery system as a whole. The method of evaluation for the other attributes is described further in the methods section.

**2.6 Study site: Alameda County**

Alameda County, an urban county in Northern California, has a large and diverse population of low-income children with a great need for dental services. The current dental care delivery models in Alameda County consist of the dominant private practice, community clinics, school-based programs, and hospital-based programs. The Office of Dental Public Health and other community clinics in Alameda County have prevention programs that target at-risk populations and promote early interventions in hopes of decreasing the risk of caries.
The first representative Oral Health Needs Assessment of Alameda County children in 2004 involved 3,269 kindergarten and third-grade children from 22 public schools and documented the overwhelming dental disease present in this county. The study showed that 69% of Alameda County’s third graders had either treated or untreated dental disease. Nearly one-third of third graders had untreated decay and only 34% of third graders had dental sealants on at least one molar. In addition, the California Health Interview Survey conducted by the UCLA Center for Health Policy Research showed that 17.9% of children in Alameda County had no dental insurance in 2008. These results are a clear indication that Alameda County’s pediatric dental needs are a substantial problem. The focus of our study is to analyze whether there is a system of safety-net dental care in Alameda County, if the system is characterized by the attributes of Tomar and Cohen’s Ideal Oral Healthcare System, and what improvements are necessary to make the system more effective in serving underserved populations.

3. RESEARCH METHODS

This mixed methods study of the Alameda County safety-net dental care delivery system was conducted, using both qualitative and quantitative methods. The data for the study were obtained through interviews that utilized a standard questionnaire, published data in the form of journals, reports, and websites, as well as quantitative data collected through a standardized survey of each program.

3.1 Literature Review

The literature reviewed for this study provided information on the current state of research about safety-net dental care delivery in the United States as well as the
theoretical framework needed to evaluate a system of care which is the basis of the study
design. Literature sources included journal articles cited in Pub Med, published
pamphlets, book chapters, and Internet resources.

3.2 Data Collection

Data for this study were collected from three sources: online information (mostly
in the form of government sites) about the county and the programs, interviews with the
dental directors of each program, and a survey form. In order to determine which
programs to include in the study, research information available on safety-net program
websites was reviewed and provided baseline information about the county’s dental
services. An interview questionnaire (Appendix A) was developed to ascertain the
practice realities and issues faced by the programs, in terms of their organization within,
and their connections to the community. The interview questionnaire was divided into
four topics that included questions regarding the overall functions of each program, how
the programs are organized, how they relate to each other and to the community in which
they exist, and what policies affect the activities of the program. A pre-questionnaire
(Appendix B) supplemented the information from the interviews by providing specific
quantitative data regarding program staffing, funding, and services provided. Target
programs were Alameda County Safety-Net dental programs including safety-net dental
clinics and hospital-based, school-based, or prevention programs that served the
underserved pediatric populations. Ten interviews were conducted with individuals who
were identified as the dental directors of the individual safety-net dental programs. The
Committee on Human Research at the University of California San Francisco approved
this study. Written consent for participation as well as a recruitment letter was developed
according to University of California, Committee of Human Research protocol, and distributed to the interview participants at the time they were enrolled in the study (Appendix C and D).

3.3 Current Policies in the State of California

Relevant policy data was obtained through journal articles from Pub Med and Internet resources. Policies presented in the results section 4.2 are those that were cited as having the greatest impact on the programs.

3.4 Qualitative and Quantitative Data Analysis

A summary of each program’s mission, target group, pediatric services provided, and program type were compiled to provide background information on each program (Appendix E). Interview data were categorized according to the sub categories’ from the interview questionnaire: programmatic data, organizational data, community data, and policy data. The prevailing themes of the responses that were pertinent to the analysis of systems are discussed within the systems analysis.

The qualitative analysis utilized the ten ideal attributes that Tomar and Cohen define as necessary for an ideal oral health care system\(^1\). Responses to the interview questions were coded to indicate the presence of each ideal attribute within each individual program. Coding categories were either based on the theoretical frameworks established in the literature that would suggest presence of an attribute or on a consistent theme that would suggest presence of an attribute. For example, the attribute of placing emphasis on health promotion and disease prevention was measured by a program’s use of prevention methods backed by evidence-based literature. Health promotion and disease prevention
were also measured by the presence of a program solely based on prevention, a unique entity in some of the Alameda programs that is not described in the dental literature. The attribute of being evidence-based had only one parameter measurable from the interviews: the use of evidence-based prevention methods. The attribute of being ethical was not evaluated due to the difficulty in determining the parameters that would evaluate an ethical program. The specific coding of each attribute is described in further detail within the systems analysis (section 4.3). The analysis assumed that the more ideal system attributes individual programs had as building blocks, the more likely a system of dental care exists in the Alameda County safety-net dental care delivery programs. The final qualitative analysis was used to determine the system attributes of dental care delivery in Alameda County, how ideal the delivery system is, and what steps are necessary to create a comprehensive and systematic dental care delivery system for underserved children in Alameda County. Finally, an evaluation was made to determine how a system of safety-net dental care delivery in Alameda County fits in with the current policy environment for safety-net dental care in the State of California.

4. RESULTS

The results are divided into four parts. The first section describes the existing Alameda County safety-net dental programs that were included in this study. The second section describes the policy environment for the programs. The third section presents a qualitative analysis of the system attributes of Alameda County safety-net dental programs. The final section discusses the quality of the dental delivery system for underserved pediatric populations in Alameda County.
4.1 Description of the programs in Alameda County

In Alameda County, there are four different models of safety-net programs that provide dental care for underserved pediatric populations. The first model is the dental clinic, which provides preventive and restorative services. The dental clinic serves the function of a dental home (see section 2.2 for definition) for pediatric patients, but also provides emergency care for pediatric patients who do not have regular dental care. The second model is the school-based program that provides preventive and referral services for patients who do not have a dental home and/or need dental care. The school-based program also provides education in the classrooms, increasing oral health awareness. The third model is the hospital-based program, which provides advanced emergency restorative and preventive care. In addition, the hospital-based program is able to provide rehabilitative dental care with general anesthesia in the operating room. The fourth model is the prevention program focused on preventing dental disease altogether.

The Early Oral Health Care Prevention program is for children ages 0-5 and is coordinated through the Eastmont Dental Center community clinic. All of the other prevention programs listed in Table 2 originate from the Alameda County Office of Dental Public Health. The Office of Dental Public Health is a unique entity in Alameda County that serves a variety of functions to help the underserved populations. The Office provides assessment of oral health problems and identifies resources to address them. The Office also develops policies that address the oral health needs of the community. There are six prevention programs in Alameda County that are coordinated through the Office of Dental Public Health. Table 2 categorizes the programs interviewed in this study by the four models of providing dental care for the underserved.
Table 2: Alameda County dental care delivery models. *Programs listed are all coordinated through the Office of Dental Public Health.

Figure 1. Overlapping target populations for the safety-net dental programs in Alameda County
The programs in Alameda County have target populations that may be either broad (serving Alameda residents and the high-risk populations) or specific (serving underinsured and uninsured). Figure 1 demonstrates the overlap of the target groups. The primary target population for all Alameda County dental programs is Alameda County residents, specifically the underserved pediatric population. Most programs target high-risk populations in Alameda County, which may include the uninsured and patients underinsured through the state Denti-Cal/Healthy Families insurances. A few programs target a more narrow population such as children ages 0-5 and pregnant women. For example, the Children’s Hospital program provides comprehensive care and targets children who are underinsured (with state insurances) and are high risk for not receiving dental care. In contrast, the Women, Infants and Children (WIC) oral health prevention program targets pregnant women or children ages 0-5 and provides education and referral services only. Appendix E contains a more thorough description of the mission, target population and pediatric services rendered by the programs that were interviewed for our study.

While there are many individual programs in Alameda County that provide safety-net dental care for the underserved, the question in our study is whether these programs function as a system of dental care delivery in Alameda County and what is the quality of the system if one exists?

4.2 Policy Environment

A thorough understanding of the policies that regulate and affect delivery of dental care for the safety net programs in Alameda County is essential to understanding the
framework within which the safety-net programs function. The state policies that were identified through the interviews as significantly impacting the programs were:

1. Denti-Cal Funding
2. Denti-Cal budget cuts (especially for the provision of adult dental services)
3. Funding programs: Federally Qualified Health Center
4. FQHC’s four wall policy
5. The Patient Protection and Affordable Care Act
6. Health Professions Regulation

The following section describes the policy environment for safety-net dental care delivery and how the provisions of each policy affect the Alameda County safety net programs.

4.2.1 Denti-Cal Funding

Denti-cal is the name for the dental portion of California’s Medicaid program. Denti-Cal is the largest dental Medicaid program in the nation - both in terms of budget and number of beneficiaries. Eligibility is very complicated and encompasses a number of factors. Appendix E contains tables that describe the minimal requirements for eligibility of full, no-cost dental benefits through Denti-Cal. Children who are not eligible for these benefits may apply for the Healthy Families State Insurance Program and the eligibility requirements for the program are listed in the second table in Appendix E.

The Denti-Cal program is hindered by a number of problems that impact the delivery of care for its recipients. The extensive poverty levels of the populations insured
by Denti-Cal result in numerous additional barriers to obtaining dental care, even if insurance is provided. Barriers to accessing care may include transportation, cultural/language differences, and/or a lack of perceived need. In addition, the reimbursement rates for Denti-Cal providers are among the lowest in the nation, and are significantly below the fees charged by most dentists resulting in low provider participation. Research was conducted to see if increasing state dental insurance reimbursements for dental services would increase service utilization and provider participation. The study’s findings indicated that while increases in provider payments were necessary to the success of the states' reform efforts, they were not sufficient to produce substantial gains in either dentist participation or patients' access to care. The authors concluded that in addition to raising reimbursement rates, Medicaid agencies must also revamp their administrative procedures and build partnerships with the dental societies.26 In summary, the challenges faced by both the beneficiaries and providers of Denti-Cal result in a strained dental care delivery environment.

Denti-cal is the primary source of funding for the majority of the safety-net dental models in our study including the community-based health centers and the hospital-based dental clinics. Table 3 depicts the sources of funding for the clinics, hospital programs, school-based programs, and prevention programs.
Table 3: Safety-Net Dental funding sources in Alameda County

<table>
<thead>
<tr>
<th>Program</th>
<th>Clinical Services Revenue</th>
<th>Grants</th>
<th>State/Federal Revenue (other than Denti-cal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian American Health Center</td>
<td>88%</td>
<td>2%</td>
<td>10%</td>
</tr>
<tr>
<td>Children’s Hospital Oakland</td>
<td>98%</td>
<td>2%</td>
<td>0%</td>
</tr>
<tr>
<td>Native American Health Center</td>
<td>95%</td>
<td>0%</td>
<td>5%</td>
</tr>
<tr>
<td>WIC Program</td>
<td>0%</td>
<td>25%</td>
<td>75%</td>
</tr>
<tr>
<td>School Based Program</td>
<td>5%</td>
<td>25%</td>
<td>70%</td>
</tr>
<tr>
<td>La Clinica Dental Center</td>
<td>75%</td>
<td>15%</td>
<td>10%</td>
</tr>
<tr>
<td>Eastmont Dental Center</td>
<td>93%</td>
<td>0%</td>
<td>7%</td>
</tr>
</tbody>
</table>

The clinical services provided are the major source of revenue for the clinics. Additional funding from the state and federal revenues is only a small portion of the funding streams for the clinic programs. Grants are utilized to supplement services that are not covered such as sedation or services for uninsured patients. The main source of revenues for the community-based clinics and hospital programs comes from the Denti-Cal payments. Denti-cal accounts for a portion of the funding for the prevention and school-based programs which depend on grants as well. Thus, alterations in Denti-Cal funding, such as the cuts to adult benefits in 2009, have a considerable impact on the programs.
4.2.2 Denti-Cal Budget Cuts

Effective July 1, 2009, Assembly Bill X3 5 (Evans, Chapter 20, Statutes of 2009-10) eliminated selected optional benefits under the Medi-Cal program, including most adult dental services for beneficiaries ages 21 and older. For children, the state dental plan choices became limited if they enrolled in Healthy Families after November 2009 such that they were no longer allowed to enroll in Delta Dental or Premier Access dental plans which allowed for a wider range of providers and covered dental services. The cuts had a significant impact on the Alameda County safety net programs across the board. Programs have had to decrease staffing and the scope of services they provide while simultaneously increasing the number of pediatric patients they serve. The implications of the cuts are far reaching when one considers recent research describing the transmission of cariogenic bacteria from mother to child.27 If mothers are unable to receive dental care their dental disease worsens increasing the risk for caries in their children. In addition, parents who do not receive dental care are less likely to seek dental care for their children. The programs have implemented innovative measures to continue providing services in spite of the cuts. These include increasing their focus on serving the pediatric populations because they are still covered by Denti-Cal and offering sliding fee scales to those patients who are now ineligible for the state insurances. In summary, the Denti-Cal cuts in 2009 have significantly impacted the safety-net programs, which were already financially vulnerable. The cuts have resulted in a shift of care from a family centered care delivery to a pediatric centered system which may not be beneficial.
to the pediatric patient when one considers the vertical transmission of the disease from mother to child.

4.2.3 Funding programs: Federally Qualified Health Center

The funding structure of the safety-net dental clinics impacts how they operate and their ability to work as a system. All of the Alameda County safety-net dental clinics and hospital-based programs are funded as Federally Qualified Health Centers (FQHCs). Under the provision of being an FQHC, the programs are reimbursed their average cost of providing a visit as determined by each state’s Medicaid program, instead of being reimbursed by fee for service. In order to be designated as an FQHC, clinics must apply and determine the initial per encounter reimbursement rate for the health center. Variables that influence the individual FQHC reimbursement rate are the cost of providing services in a rural versus urban community, the total scope of services the health center provides and the cost of living in the area. Under FQHC policy, patients must be enrolled in Denti-Cal for the community clinics to be reimbursed for their services. If a patient does not quality for any third party payer program, then their income level is verified and used to assign their individual/family sliding scale discount. In most safety-net dental clinics, patients can only qualify for a sliding scale discount if their income is between zero and 200 percent of the federal poverty level. Patients above that level pay the regular full fee for services. Some services such as orthodontics or sedation may never be discounted to a nominal fee, even for those at 100 percent sliding scale, because these services generate upfront costs for the safety-net dental clinic. The FQHC model is embraced by the dental clinics in Alameda County as an alternative payment model for services due to the low reimbursement rates of Denti-
Cal. The limitations of the FQHC model are that complex services such as general anesthesia reimburse the same as a simple sealant procedure requiring the FQHC clinics to either absorb the financial loss or refer the cases elsewhere. In summary, the FQHC payment model is better than a fee for service payment model for the safety-net programs; however, it does not always support comprehensive care for the patient.

4.2.4 FQHC four wall policy

Often a patient of a FQHC will require a referral to a private dentist/specialist for treatment. The safety-net dental clinic referrals are complicated due to the FQHC four wall policies which imply that a patient cannot receive dental care outside of the FQHC. Thus, even if a private practice specialist is willing to accept a lower reimbursement rate from a patient with Denti-Cal for their services, they will not be compensated if they are not providing the care at the FQHC site. This naturally complicates the referral process for children who require the services of private specialists and has been brought to the attention of the legislature. Currently, the Alameda County safety-net programs are anticipating clarification from the federal level regarding how states may allow FQHCs to contract with off-site private dental providers.

4.2.5 The Patient Protection and Affordable Care Act

On March 21, 2010 the U.S. House of Representatives approved health care reform legislation (H.R. 3590 and H.R. 4872) in hopes of significantly changing the United States healthcare system by providing greater access to medical and dental care (see Appendix E for health care reform provisions). Provisions of the bill expand dental coverage resulting in an estimated 5.3 million additional children nationwide having dental insurance. If the dental insurance provided through health care reform is
equivalent to the current Denti-Cal and Healthy Families dental insurances, this expansion may lead to Alameda County’s safety-net dental care delivery sites being flooded with an enormous number of new patients that they do not have the funding, capacity, or workforce to treat.

4.2.6. Health Professions Regulation

In Alameda County and throughout the United States, the number of dental health professional shortage areas is continuing to increase, a phenomenon that affects the high-risk, underserved populations the most. Thus, there have been increased efforts to utilize the allied dental professionals, dental hygienists, and dental assistants to provide extended services. Dental assistants work under the direct supervision of the dentist but maybe trained in extended functions depending on the state. Dental hygienists may also receive additional training for extended functions such as administering anesthesia and placing fillings. In some states hygienists may practice in another location under the general supervision of a dentist, whereas in Oregon, California, and Colorado dental hygienists have independent practice privileges. The newest model of providing dental care is the dental health aide therapist training program, first implemented by the Alaska Native Tribal Health Consortium. This program’s practitioners can provide restorative services, including drilling and filling teeth and simple extractions after two years of training post-high school and a limited period of close supervision. The dental therapist model was recently approved by the Minnesota legislature. The California Dental Association is currently conducting a study to evaluate the effectiveness and applicability of the dental therapist program to California’s access-to-care problem.
The Alameda County safety-net dental programs are experiencing a workforce shortage and have developed new tactics to overcome the problem. The majority of the programs hire auxiliary staff (hygienists and dental assistants) with advanced training to perform additional duties to decrease the chair time of the dentist. This concept of the “advanced trained dental assistant” has become very popular in the safety-net dental care delivery setting as a cost-effective strategy as discussed in the policy section. Programs are also cross-training staff to have assistants fulfill office duties to cut down on staffing needs. Pediatric specialty care is scarce, so a few of the programs have partnered with the Lutheran Medical Center’s satellite pediatric or general residency program. The program accepts pediatric or general dental residents and subsequently places them throughout the county for advanced training.

<table>
<thead>
<tr>
<th>Program</th>
<th>Administrators</th>
<th>Dentists</th>
<th>Assistants</th>
<th>Hygienists</th>
<th>Front Desk</th>
</tr>
</thead>
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<td>0</td>
<td>0</td>
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<td>7</td>
<td>1 (volunteer)</td>
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<td>.5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
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<td>1</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
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<td>La Clinica</td>
<td>5</td>
<td>14</td>
<td>1</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>Eastmont Wellness</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>2.5</td>
<td>0</td>
</tr>
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<td>Children’s Hospital</td>
<td>1</td>
<td>5</td>
<td>3</td>
<td>6</td>
<td>0</td>
</tr>
</tbody>
</table>
Table 4 summarizes how different programs are staffed. The majority of the dentists are employed part time. The number of administrators compared to staff is low because the dentists are fulfilling the administrative role of dental director as well as providing patient care. This becomes challenging for the many program directors who are working part time. Overall, the safety-net dental program’s workforce is stretched thin and programs are continuously searching for solutions to overcome the problem.

### 4.3 System Analysis

In the safety-net system analysis, the interview responses have been organized under the categories of the attributes of an ideal oral health care system\(^1\) outlined in table 1. To evaluate the quality of the system, it was first useful to identify whether the individual programs had the ideal attribute and to what extent. This was accomplished by identifying themes that were prevalent throughout the interviews and categorizing them as markers of a specific attribute. The assumption made in this study was that the greater the number of ideal attributes present in each individual program, the more ideal the system is overall. In addition, the lack of certain attributes in individual programs may be compensated for by other programs; leading to a system that overall provides comprehensive care.

#### 4.3.1 Integrated

The definition of integrated is “to make into a whole by bringing all parts together.”\(^1\)

For the systems analysis (table 6, page 45) program integration markers were:

1-X. Program that refers to the other safety-net dental programs
2-X. Program that is referred to by other safety-net dental programs

3-X. Connection with the medical programs

Referral patterns (figure 2) give us a picture of the existing integration of the safety-net dental delivery in Alameda County. All programs expressed the need to refer. Programs varied by the percentage of patients they referred. The lowest percentage of referrals cited was 5% of patients referred out by the Asian American Health center and Children’s Hospital Oakland. The highest number of referrals cited was 15% by the Tiburcio Vasquez clinic. These numbers do not include the school-based or WIC programs, which are primary referral programs for patients.

Figure 2: Diagram of the referral patterns in Alameda County

The Alameda County Office of Dental Public Health (through its school based program, WIC program, and patients referred to the Office of Dental Public Health from other safety-net programs) refers patients to the clinics for comprehensive care. If patients
require sedation for extractions, they are referred to Highland Hospital’s oral surgery program. If patients require comprehensive care in the operating room they are referred to the Children’s Hospital. If the patient require sedation for comprehensive care or root canals for their permanent teeth, they are referred to private practice specialists. In theory the referral pattern picture of Alameda County shown in figure 2 demonstrates an **integrated** system that should be able to provide comprehensive dental care for the underserved in Alameda County (and in many cases it does). However, many challenges with referrals exist (figure 3). The directors interviewed described many constraints to referrals, beginning with lack of patient follow-up when patients are referred elsewhere for care. To counteract this phenomenon some programs arrange the referral before the patient leaves their program. Six programs reported a policy to formally follow-up with the referral through their own staff or case managers. The waiting list for many of the clinics, and especially the hospital programs, is very long. Children’s Hospital Oakland (CHO) has a waiting list of one year for their comprehensive care general anesthesia cases. If a clinic refers a patient to CHO for comprehensive care under general anesthesia, the patient is either put on a waiting list of one year or referred to another hospital for general anesthesia. Highland hospital provides sedation and anesthesia for patients but only for the service of extractions and not comprehensive care. At Highland Hospital the patients are seen on a walk-in basis and triaged. The directors of both hospital programs, CHO and Highland, stated that the greatest difficulty with referrals is that patients do not always come in with the appropriate paperwork (x-rays, referral forms) resulting in increased provider time needed for each patient. Ultimately, this contributes to less efficiency and longer waits times.
Figure 3: Challenges in the referral patterns in Alameda County. Symbol X denotes areas where actual referrals fall apart due to the challenges.
Lack of dental insurance is a major barrier to referrals for the programs, which are already experiencing budget reductions and have a cap on the numbers of uninsured patients they can treat. Patients with insurance may not be able to cover co-pays when they are referred for specialty services not covered by their insurance. Patients are also often reluctant to seek care with new providers so lack of patient compliance also causes a breakdown in the referral pathway. The above-mentioned challenges become an even larger barrier for accessing dental care when patients are referred to private practice specialists for care. While these patterns often breakdown down (as shown in figure 3), the programs are aware of services available at other sites and are still referring their patients to one another for care.

The origin of the programs gives us insight regarding program integration. The programs were not developed to respond to a specific need of another program. New programs were established as part of the expansion of a medical clinic; thus, the creation of a new dental program was independent of the other programs in existence. Each program had to establish itself and this phenomenon resulted in the programs functioning as separate entities with similar barriers to providing comprehensive dental care.

Another aspect of integration, according to Tomar and Cohen’s paper, is the relationship of the dental care delivery with the medical system. The authors state that patient care would benefit and become more systematic if payment and oral health care delivery were integrated with the medical system. The Asian Health Center cited substantial support from the medical side through the director’s relationship with the head of pediatrics. Unfortunately the majority of the programs interviewed cited the lack of
communication between the pediatricians and the dental providers to be a constraint for care delivery.

In summary, the programs refer, and are referred to, revealing integration within programs; however, within the system the referrals are fraught with gaps resulting in less than ideal integration.

4.3.2 Emphasis on health promotion and disease prevention

An ideal oral health care delivery system would have practices that prevent the occurrence of disease and intervene as early as possible in the disease process.¹

For the systems analysis (table 6, page 45) program emphasis on health promotion and disease prevention markers were:

1-X. Programs whose services are ≥ 50% of preventive services
2-X. Programs that incorporate the latest techniques of prevention (e.g., Caries Risk Assessment method)
3-X. Programs with a separate prevention program to catch disease early

Prevention has been at the forefront of dental care in recent years. Seventy percent of the programs cited the prevention of dental caries as their specific goal in relation to serving children. Four programs emphasized capturing a child prior to the age of one or before significant dental disease may develop. This concept was called “first tooth, first visit” and involved providing anticipatory guidance for the parents of young children on how to prevent dental disease and break harmful dietary habits early before lesions develop on the primary teeth. The safety net programs in Alameda County ranged
from being solely prevention programs, such as the school-based program and WIC, to being primarily treatment-providing centers. All programs except Highland Hospital (which deals with the pediatric emergency and oral surgery needs) had some form of prevention in their program.

The financial infrastructure of the safety-net dental clinics is such that programs are financially better off when they provide primary preventive services rather than restorative services. These programs, funded as an FQHC, are paid equally for a visit where they provide restorations for six teeth as they are if they do one sealant, but the latter is more expensive for the clinic to provide. Thus many of the programs focus their energies on the younger populations, age 0-5, or on pregnant women in hopes of preventing the dental disease. Table 5 illustrates that 50% of the program services are focused on prevention. In many ways this system is opposite of the private sector which under a fee for service payment structure, is rewarded financially for providing treatment rather than providing preventive services.

In summary, an emphasis on health promotion and disease prevention was evident in most of the programs. As a system, there was evidence of health promotion and disease prevention due to the predominance of programs that specifically target prevention in the sectors of the pediatric population that are at the highest risk for dental disease.
Table 5: Percentage of pediatric services rendered within safety-net dental programs in Alameda County.

<table>
<thead>
<tr>
<th>Program</th>
<th>Preventive (education, pro/fl, sealants)</th>
<th>Restorative (restorations, extractions, endodontics)</th>
<th>other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian American Health Center</td>
<td>55%</td>
<td>45%</td>
<td>-</td>
</tr>
<tr>
<td>Children’s Hospital Oakland</td>
<td>50%</td>
<td>50%</td>
<td>-</td>
</tr>
<tr>
<td>Native American Health Center</td>
<td>70%</td>
<td>29%</td>
<td>1%</td>
</tr>
<tr>
<td>WIC Program</td>
<td>100%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>School Based Program</td>
<td>100%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>La Clinica Dental Center</td>
<td>50%</td>
<td>49%</td>
<td>1%</td>
</tr>
<tr>
<td>Eastmont Dental Center</td>
<td>55%</td>
<td>33%</td>
<td>13%</td>
</tr>
</tbody>
</table>

4.3.3. Evidence based

An evidence-based system would incorporate interventions found to be effective in clinical and public health practice and eliminate those that are not.1

In general, there is a lack of evidence based dentistry regarding treatment techniques however there is a considerable amount of evidence based dentistry regarding prevention. Thus, in the systems analysis (table 6, page 45), evidence-based treatment programs were evaluated only on the basis of utilization of the latest prevention treatments. Programs that were considered evidence based received one X and those who were not were left blank.
Incorporations of discoveries that prevent oral disease are universal in the Alameda County dental delivery programs. All programs except Highland Hospital provide the services which aid in preventing dental disease through the use of caries risk assessment, education, interim therapeutic restorations, and fluoride varnish. Highland Hospital is aware that their prevention services are lacking and has a direct referral source (Eastmont Dental Center) for preventive services indicating the presence of a system of dental care delivery.

4.3.4. Cost-effective

A cost-effective system would use the least resource-intensive, socially acceptable approach to reach the desired health outcomes.¹

For the systems analysis (table 6, page 45), program cost-effective markers were:

1-X. Programs that cross-train staff

2-X. Programs that find unique ways to bring more providers through employing students and residents

3-X. Programs with greatest number of part-time staff (see table 4)

The most common cost-effective measure implemented by the programs was to hire auxiliary staff (hygienists and dental assistants) with advanced training who could perform additional duties to decrease the chair time of the dentist. Hiring part-time dentists is also cost effective because the pay rate is lower, and in some cases employee benefits such as medical insurance are not offered. Programs are also cross-training staff to have the assistants fulfill office duties to cut down on staffing needs. Another
innovative response to provide cost-effective care is utilization of students and residents to provide care. To increase the number of dentists, programs have partnered with the local dental schools or the Lutheran Medical Center’s satellite pediatric or general residency program to increase the number of providers in the clinics. The emphasis and time spent on prevention rather than treatment is also a cost-effective strategy by enabling the dentists to see more patients for sealants and exams rather than fillings and extractions.

In summary, the programs varied in their individual cost-effectiveness. Overall the system has elements of cost-effectiveness; however, the solutions to cut costs may not be adequate enough to sustain individual programs.

4.3.5. Sustainable

For the systems analysis (table 6, page 46) program sustainability markers were:

1-X. Programs whose majority funding depended on clinical services revenue rather than grants (see table 1)

2-X. Programs that described themselves as sustainable

3-X. Programs successful in restructuring after the recent California budget cuts

Funding is the strongest determinant of sustainability. Programs are vulnerable to state policy changes, budget cuts, and economic downturns. The determination of the programs to keep their doors open despite their budgetary constraints is remarkable however, not all programs can survive in a down economy. The clinics saw a considerable decrease in their funding revenues with the cuts in adult benefits from Denti-Cal as well as the decrease in the number of children covered by the Healthy
Families insurance. Many clinics repeatedly restructured their programs to increase the number of pediatric patients they were serving to maintain their programs. Not all programs have this option. The school-based program’s grants expired at the end of 2010 and thus, the school-based sealant program has been cancelled for the 2011-2012 school year. The school-based program has had to shift its energies to the Elevate Project in Oakland (Appendix E) and will continue to be dependent on the unpredictability of grant funding.

The safety-net dental clinics and hospital programs are the most sustainable program model. In part, this is due to patient demand for the services provided by the clinics and hospital-based programs and the patient’s willingness to pay out of pocket for these services. The prevention program’s sustainability is dependent on grant funding. The school-based program is the least sustainable. In summary, there are aspects of the system that are sustainable, but all components are necessary to provide a system of dental care for the underserved pediatric populations in Alameda County.

4.3.6. Equitable

Every person in the community has equal access to comprehensive, culturally competent, community-based oral health care.\(^1\)

For the systems analysis (table 6, page 46) program’s equitability markers were:

1-X. Programs that accept uninsured patients
2-X. Programs that have case managers
3-X. Programs that have a specific target group
Equitability can be measured by a reduction in health disparities. Case managers were cited by programs as an enabling service; a way to increase access to care and thus reduce disparities. The Asian Health Center had a unique concept of a patient navigator: case managers who help patients with insurance enrollment and referrals. Including the Asian Health Center, five of the ten programs had actual case managers. The Eastmont Wellness Center described their location as an enabling service due to their proximity to WIC, a pediatric clinic, Head Start and elementary schools. Highland hospital described their mission to treat everyone despite economics, race and religion however; this results in the limitation of their services. The Asian Health and Native American Health Center were formed to address the cultural needs of their specific population, but they will treat all nationalities with no preferences. The Office of Dental Health in Alameda County’s primary goal is case management, especially through their Healthy Smiles Children’s Dental Program. Through this program, the Office of Dental Health provides assistance to families of uninsured children to enroll in dental insurances. The office also connects families with providers so children are able to receive the dental care they require.

For the system to be equitable it is necessary for the underserved populations to have equal access to all of the dental models. Lack of access for the uninsured pediatric populations as well as the long wait times for the Children’s Hospital (which provides general anesthesia and specialty care services) significantly compromises the equability of the Alameda County safety-net system.
4.3.7. Comprehensive

A comprehensive oral health care system would have preventive, restorative, and rehabilitative oral health services.

For the systems analysis (table 6, page 46), comprehensive markers were:

1-X. Programs that provide preventive and restorative services

2-X. Programs with pediatric dentists on site

3-X. Programs that are referred to for services not provided by other programs

When asked how the programs decided what services to provide, programs cited five key factors (figure 4).

![Figure 4: Factors affecting program services provided (parentheses indicate the number of programs that had the specific reply).](image)

Funding as well as patient needs were the two most commonly cited factors affecting program services. Funding is always listed as one of the rate limiting factors when considering the sustainability and growth of a safety net program. However when
specifically asked how funding sources affect care delivery decisions, fifty percent of programs indicated that funding does not affect the delivery of pediatric dental care. CHO stated that they do not accept uninsured patients enabling them to provide whatever care is necessary for the children. The other fifty percent of the programs were on the other end of the spectrum indicating that funding sources have a large effect on decisions regarding delivery of pediatric dental care by affecting the number of staff hired, scope of care and which patients are seen (uninsured vs. insured).

Interestingly, provider skill set was identified as the leading cause for determining the comprehensiveness of program services at two clinics that treat a large number of pediatric patients. Pediatric dental training varies by schools and to treat a high-risk pediatric population with multiple caries requires a unique skill set that not all dental schools teach. Fulfillment of program goals only affected the services delivered by two programs. CHO stated that their services have remained unaltered for years because it has always been a center for pediatric dental care provided by specialists. The services delivered at CHO are the most comprehensive because they are able to provide general anesthesia for their patients who are unable to obtain care in the general dental setting. All other programs have to refer their patients to CHO or other venues if their patients require general anesthesia. Lack of general anesthesia, provider skill set for treating pediatric patients, and funding all explain why pediatric specialists are the most needed specialty for providing comprehensive care in the Alameda County safety-net programs.

Comprehensive care for pediatric populations is challenging to accomplish without the services of a pediatric specialist for patients with behavior management or special needs. The high cost and low number of pediatric dentists willing to work in a safety-net
dental care delivery program is a major barrier to care for the underserved pediatric populations. A few clinics have been able to overcome these needs by hiring part-time pediatric dentists and by developing referral relationships with private practices in the area. The FQHC four wall policies limit the ability of clinics to refer to the private sector for specialty care. Lifelong dental clinic partnered with University of California’s pediatric dentistry program to establish a volunteer clinic one Saturday a month where residents and faculty or local pediatric dentists volunteer their services to treat the clinic’s pediatric patients requiring specialty care. The programs fortunate enough to have specialty care are unable to accommodate the number of referrals from other programs requiring the services of their pediatric specialists.

As an entire entity the Alameda County Safety Net delivery programs do provide comprehensive dental care. Each individual program is not comprehensive but attempts to establish a network of referrals in order to provide comprehensive care. However, the breakdown of the referral patterns (figure 3) limits the ability of the Alameda County safety net programs to provide comprehensive care.

4.3.8. Universal

An ideal system of oral health care would provide access to care for all individuals of the society.²

There were no distinguishing markers for the universal attribute as explained in the discussion that follows.

The function of safety net programs is to fill in the gaps where access to care is an issue. Thus, the mission is to provide oral health care for patients unable to access care in
the private market, thereby creating a more universal system of care. The benefits that each individual program provides to the community, when seen as a whole, and in conjunction with the private sector, (figure 5) should translate into universal access to oral health care.

![Diagram](image)

**Figure 5: Benefits to the community**

The benefits of the Alameda County safety-net delivery programs range from overall improvement of the oral health in the community and providing access to care to more specific benefits such as the coordination of oral healthcare, being a cultural gathering place or providing a unique service such as general anesthesia (Figure 5). The Asian Health Services community clinic and the Native American Health Center community clinic are a cultural gathering place for their respective ethnic groups and were
specifically designed for the purpose of providing a place where these specific populations would feel comfortable receiving care.

Despite the many benefits and attributes of the Alameda County safety-net dental programs the system is still not universal because the patients are unable to access all parts of it. At this time, universal oral health care is not being provided in Alameda County or throughout the United States.

4.3.9. Quality assessment and assurance

An oral healthcare system should have an ongoing mechanism for monitoring critical dimensions of the structure, process and outcomes for care of populations and individuals.¹

For systems analysis (table 6, page 46), program quality assessment was evaluated only on the basis of having a formal method for quality assessment. Therefore, programs that have a method received one X and those that do not were left blank.

To assess outcomes, the programs are generally collecting convenience data for outcome assessments. The primary data cited by most programs was the Alameda County Needs Assessment study.²⁴ One program cited the Headstart Community Needs Assessment information as useful for directing program services. There are no formal measurements of program impact being conducted throughout the safety-net dental delivery programs in Alameda County. Programs cited different anecdotal methods of measuring their impact such as running reports and comparing trends observed; recall systems; clinic data; or even day-to-day observations. Programs mostly collect convenience data for outcome assessments.
In summary, two programs were conducting formal quality assessments of their program, but there is no system-wide quality assessment being done at this time.

4.3.9. Culturally competent

A culturally competent oral healthcare delivery system should take into account the individual’s and community’s cultural background and incorporate them into the healthcare delivery.\textsuperscript{1}

For systems analysis (table 6, page 46) program cultural competency was evaluated by the following markers:

1-X. Program had bilingual staff

2-X. Program had a specific cultural target population

The behaviors of dental professionals towards their patients can have a considerable impact on the oral health of the patients. Dentists who do not value cultural needs and practice in a culturally competent manner may themselves be barriers to care. The safety-net dental programs are aware of the importance of cultural competency and have addressed this need in many ways\textsuperscript{29}. The Asian Health Services community clinic and the Native American Health Center community clinic described themselves as a cultural gathering place for their respective ethnic groups and were specifically designed for the purpose of providing a place where these specific populations would feel comfortable receiving care. All programs hire bilingual staff and staff that are not bilingual are encouraged to learn additional languages. Programs also utilize the medical interpreter services if they are connected to a medical clinic or hospital for communication with
patients. Individual programs have elements of cultural competency but the overall system may need to increase cultural awareness in order to provide a more ideal system of dental care delivery in Alameda County.

**Table 6: Linking the ideal attributes of an oral health care system to the components of the individual programs of Alameda County.**

Blank box: symbolizes no markers prevalent  
X: symbolizes one marker prevalent  
XX: symbolizes two markers prevalent  
XXX: symbolizes all markers prevalent

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<th>Attribute</th>
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<th>Evidence Based</th>
<th>Cost Effective</th>
<th>Equitable</th>
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<td>X</td>
<td>X</td>
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<td>La Clinica</td>
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</table>
Table 6 depicts a summary of how prevalent the attributes of an ideal system are in each individual program. The focus of our study is to analyze if Alameda County’s programs as a whole make up a system of dental care delivery. Looking at the big picture of Alameda County’s safety-net programs it is apparent that some forms of the ideal attributes exist universally for all of the programs and thus it can be concluded that a system of dental care in Alameda County exists. However, the question that naturally follows is what is the quality of this system and how can it be improved to become ideal?

4.4 Quality of the system

The definition of a system is a group of interacting, interrelated, or interdependent elements working in synchrony to form a complex whole. More precisely a healthcare system is defined as a collection of entities whose function is to meet the health care needs of its target population. The fundamental objective of a healthcare system is to improve the health of the population they serve. From the above analysis of an ideal oral healthcare system, our evaluation reveals that the safety-net dental care delivery in Alameda County has the attributes of a system in place to deliver oral health care but it is not ideal. Gaps within programs cause the system to be inefficient and breakdown resulting in patients who do not receive optimal care.

5. DISCUSSION

The specific attributes in the Alameda County safety-net dental care delivery system identified in this study needing improvement are:

1. Integration
2. Sustainability, especially of the school-based program
3. Prevention
4. Comprehensive care
5. Quality assessment
6. Policy reform

Recommendations for improvement for each of these attributes are suggested below.

5.1 Integration

Integration can be improved by increasing program communication. Figure 6 illustrates three components suggested for better communication between the clinics. Regular meetings, a feedback system for referrals, and electronic health records would improve the communication between the clinics, resulting in more integrated patient care in Alameda County.

![Figure 6: Vision of Communication](image-url)
The Office of Dental Public Health in Alameda County is perfectly situated to coordinate regular meetings of the safety-net dental programs in Alameda County. In addition, there are numerous constraints with the referral patterns among the safety-net programs (figure 3). The feedback loop for referrals is lacking in both directions. Programs that patients were referred to cited lack of adequate patient information once a referral was made. Programs that referred patients to other programs for general anesthesia or other types of specialty care cited lack of feedback once a patient was referred. The feedback system for referrals may become smoother in both directions, if all the safety net programs switch to electronic health records. Electronic health records have been documented in the literature to increase safety, quality management, and outcomes reporting.\textsuperscript{30} Digitization of the Alameda county safety-net dental care delivery would significantly enhance and ease patient care, referrals, and management.

5.2 Sustainability of the school-based program

\textit{“There are a lot of kids in the schools that have an abscess today sitting in class trying to learn and no one is doing anything about it.”} – Cathi Grant, School-Based Program, Alameda County.

The need to sustain the current school-based program and to expand it was expressed by all of the safety-net dental programs in Alameda County. Figure 7 illustrates that 24% of children ages 0-11 in California insured with Denti-Cal have never seen a dentist.
The implications of underutilization of dental care are widespread in terms of both prevention and treatment of dental disease. The school-based program increases utilization and patient convenience as well as captures the children not utilizing private or safety-net dental services, as exhibited in Figure 7. Alameda County’s school-based program is unique because it is run by the Office of Dental Public Health in Alameda County, which provides an additional level of patient management to ensure that appropriate follow-up dental care is obtained (figure 8).

Figure 7: Dental Care Utilization of Children in California. Courtesy of the California HealthCare Foundation website: [www.chcf.org](http://www.chcf.org). In 2005, 24% of California’s 6 million children ages 0-11 had never visited a dentist.
The office provides case management for the patients identified from the school-based program by providing financial assistance and/or by making the appropriate referrals to the Alameda County Safety Net programs. Funding, and thus sustainability, of the school-based program in Alameda County has become a critical issue with the state fiscal cuts that have occurred over the past few years. Funding sources may need to be redirected from other models of safety-net dental care delivery in Alameda County to the school based programs in order to sustain this integral part of the Alameda County safety-net dental care delivery system.

5.3 Comprehensive

Serving a high-risk pediatric population necessitates specialty care, i.e. care provided by individuals who are trained to serve and meet the needs of a specific population. Sedation services, operating room accessibility, and pediatric dentists were cited by all of the clinics to be in demand and scarce in the Alameda County safety-net clinics.
The safety-net dental programs should consider sharing resources to jointly hire one or more pediatric dental specialists that would serve at multiple sites. This would allow the funding burden to be distributed among many programs and ease the gap in specialty care. Another way to help overcome the barrier in specialty care is to establish relationships with the pediatric dentistry residency program at the University of California San Francisco. CHO currently refers the majority of their general anesthesia cases to UCSF due to their year-long waiting list. The programs should continue to increase awareness in the private sector of the need for specialists through venues such as Give-Kids-a-Smile Day, where private practitioners are requested to donate their services for one day at the safety-net program sites.

The most simplistic and universal method for addressing the lack of specialty care is to avoid the need for it. Prevention is the key element to overcome the issue of specialty care. If the patient’s dental disease is under control, or they never have the disease, patients will not require specialty services.

5.4 Prevention

“The largest gap that I see is that children are still leaving kindergarten with caries. Children may get their dental work done but the dental literacy is no higher.” – Dr. Pamela Alston, Eastmont Dental Center.

While prevention is stated to be a priority by the programs, the time spent for oral health education is not a reimbursed commodity and the overwhelming dental treatment needs of the patients often result in the education component of preventive dental care getting the short shrift. Eastmont Dental Center’s prevention program within their dental
clinic symbolizes the priority the program gives to the prevention of dental disease in addition to treating it. Theoretically, a prevention program, such as the Eastmont program, enables the clinic to focus a substantial amount of funding and energy towards the prevention of dental disease by increasing oral health literacy and prevention practices. The safety-net dental clinics and hospital programs may need to consider allocating staff and resources for developing prevention programs to create a dental care delivery system whose first priority is prevention of dental disease.

5.5 Quality Assessment

Quality is an essential component of any service and production process. In order to be accountable to patients and funding sources, evaluation and quality assessment are necessary. They are an important external measure of an organization’s performance and give insight into the strengths and weaknesses of the services provided. Guidelines should be developed for quality assessment of the safety-net dental care delivery models by the Alameda County Office of Dental Public Health. A quality assessment plan should be set up and implemented by each safety-net dental program on an annual or biannual basis.

5.6 Policy Reform

While greater funding for the system is an undeniable necessity it is also paramount that the policies in place allow for the provision of less expensive and more effective dental care. Delivery system reform is crucial to improving the safety-net dental care system. This can be done in three ways:
1. Recognizing prevention as the most important component of dental care delivery and funding prevention efforts adequately. This will entail reverting back to a family centered model of providing dental care. The current model of only funding pediatric dental services does not decrease vertical transmission of dental disease from caregiver to child, counteracting prevention efforts.

2. Mandating community service in safety-net programs as part of dental training, residency programs and licensing programs to increase the dental workforce skills and focus on prevention.

3. Reassessing policies, such as the FQHC four-wall policy, that affect the safety-net dental care delivery system. Existing policies must be easy to comprehend and implement so that they benefit the whole system that is to increase access to dental care for the underserved pediatric populations.

6. CONCLUSIONS

This is the first study to conduct a system wide analysis of a community’s safety-net dental care delivery. We evaluated the overall safety-net dental care delivery system in Alameda County to determine if the safety-net programs exist as individual entities or if they are integrated as a system to provide dental care for the underserved pediatric populations. By focusing on the system rather than individual programs, the study was able to identify the gaps in care present in the dental care delivery system for the underserved. The gaps present in the Alameda County safety-net dental care delivery system include poor program communication and integration; lack of an organized and sustainable school based program; inadequate focus regarding prevention of dental
disease; inadequate access to specialty care; lack of quality analysis of the system; and lack of policies that adequately support the safety-net dental care delivery for the pediatric populations. Although Alameda County programs provide a great deal of dental care for underserved pediatric populations, the gaps present in the delivery system are resulting in pediatric patients who are still unable to access comprehensive care.

To improve delivery of safety-net dental care in Alameda County, the following actions are recommended:

1. The Alameda County Office of Dental Public Health needs to facilitate better program communication and integration. The Office should coordinate regular meetings with all of the safety net programs and the primary initial goal should be the establishment of smoother referral patterns.

2. All safety-net dental delivery programs should devote efforts to develop an organized and sustainable school based program. Each program should take part in the development of the school program by staffing and/or funding a portion of the school-based program.

3. Clinic programs should shift the primary focus of dental care delivery to the prevention of dental disease by implementation of a program that specifically targets prevention, similar to the models described in section 4.3.2.

4. Clinic programs should increase access to specialists by combining resources.

5. All safety-net delivery programs should continually perform outcome and quality assessments of the system to analyze strengths and weaknesses.
6. County, State and Federal policy efforts should incentivize the above priorities to help create better care “systems” through policy reform efforts.

The implementation of the above parameters will lead to a more ideal safety-net dental care delivery system in Alameda County.
7. REFERENCES


APPENDIX A: Pre-questionnaire

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO
Background Questionnaire

Please answer the following questions with regard to the pediatric dental services you provide for the age group 0-18 year olds. Thank you.

1. What is the mission of your program?
2. Who is your program’s target group population?
3. Program staff: please list # of people in your program.

<table>
<thead>
<tr>
<th>Part Time</th>
<th>Full Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrators</td>
<td></td>
</tr>
<tr>
<td>Dentists</td>
<td></td>
</tr>
<tr>
<td>Assistants</td>
<td></td>
</tr>
<tr>
<td>Hygienists</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

4. What are the funding sources for this program? (please check all that apply)

1. Private Grants___
2. Federal/State funding____
3. Clinical revenues____
   a. Out of pocket____
   b. Medicaid/Denti-Cal____
   c. Private insurance____
4. List any other sources of funding________________________

5. What percentage of funding comes from clinical services revenue ____%
What percentage of funding comes from grants____%
What percentage of funding comes from state/federal revenues_____%
Please answer the following 3 questions based upon the approximate pediatric patients (age 0-18) seen by your program in 2009.

6. Patients by Age group:

<table>
<thead>
<tr>
<th>Age Group</th>
<th>#________</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5</td>
<td>#________</td>
</tr>
<tr>
<td>6-12</td>
<td>#________</td>
</tr>
<tr>
<td>13-18</td>
<td>#________</td>
</tr>
</tbody>
</table>

Total # of pediatric patients: #______ (sum of the above)

7. Ethnicity:

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>#________</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>#________</td>
</tr>
<tr>
<td>Latino</td>
<td>#________</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>#________</td>
</tr>
<tr>
<td>African American</td>
<td>#________</td>
</tr>
<tr>
<td>Native American</td>
<td>#________</td>
</tr>
<tr>
<td>Multirace</td>
<td>#________</td>
</tr>
<tr>
<td>Other</td>
<td>#________</td>
</tr>
</tbody>
</table>

Total # of pediatric patients: #________

8. Pediatric services rendered (approximate the % of total procedures)

<table>
<thead>
<tr>
<th>Service</th>
<th>___%</th>
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</thead>
<tbody>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>Prophylaxis</td>
<td></td>
</tr>
<tr>
<td>Sealants</td>
<td></td>
</tr>
<tr>
<td>Restorations</td>
<td></td>
</tr>
<tr>
<td>Extractions</td>
<td></td>
</tr>
<tr>
<td>Endodontics</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>____</td>
</tr>
</tbody>
</table>
APPENDIX B: Interview Questionnaire

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO
Professional Interview Questionnaire

Programmatic

1. What are your program’s specific goals in relation to serving children 0-18?

2. How did your program come about?

3. Who sets the program goals and how are others involved in implementation?

4. How do you decide what specific pediatric services your program will offer/provide?

5. Are there any other enabling services that you provide (ex. Case managers)?

6. How do funding sources affect decisions regarding delivery of pediatric dental care?

7. What are the benefits of your program to the community?

8. What are the constraints of your program and why?

Organization

9. Why do you have your particular arrangement of program staff? Are there any regulations that affect this arrangement?

10. What are the different ways that you address the unique needs and preferences of the diverse pediatric community that you serve?

11. I see in the pre-questionnaire you defined _____ as your target group. On what grounds was your defined target group chosen?

12. What are the data that enable you to define the pediatric oral health needs of your community?

   a. How do you gather and use this information?

   b. How do you measure the impact of your program’s effect to the pediatric dental needs you discover?

Community
13. There are various models for delivering pediatric dental care in Alameda County such as the school based programs, community clinics and hospital based programs. How does your program interact with the other programs to deliver care?

   a. Do you refer and if so, how do you follow up on the referral? What challenges do you face in this area?
   b. If the treatment needed by the patient is outside the scope of practice for your setting where do you refer the patient?
   c. What is the percentage of patients you refer?

14. What aspects of the pediatric public health dental care system in Alameda County do you feel work well?

15. How can the dental delivery system in Alameda County be more effective for the underserved pediatric populations? What would be your recommendations for improvement?

16. What are the gaps in dental care that still exist in this community for the underserved pediatric population?

17. What are the solutions to overcome the gaps in care?

Policy

18. What state policies impact your program (i.e. Denti-Cal funding, scope of practice for auxiliary staff, others)?

19. What are the critical issues that are affecting your program this year?

20. How sustainable do you think your program is? What are the criteria you utilize to assess sustainability?
APPENDIX C: Recruitment Letter

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO
RECRUITMENT LETTER TO PARTICIPATE IN A RESEARCH STUDY

Dear Safety-Net Dental Program Director,

My name is Aparna Aghi and I am a first year pediatric dental resident at UCSF. For my master’s project at UCSF I am working with Dr. Ed O’ Neil and Beth Mertz from the Center for Health Professions to study current safety-net dental care delivery models for children in Alameda County. The purpose of our study is three fold. First we would like to find out what the existing sectors delivery models are providing dental services to children, what additional components may be needed to establish a sustainable comprehensive care dental delivery system, and how the current fiscal and administrative policies in the State of California hinder or help to sustain existing models. Alameda County is recognized for its efforts to overcome the significant barriers that exist to obtaining dental care. This study will provide a foundation of data that can be utilized to develop future programs.

I am writing to you to request your participation in my study. I would like to set up an interview with you to answer a series of survey questions to learn more about your program as well as your thoughts on the structure and policies affecting dental care delivery for children in Alameda County. The information you provide will be utilized to study the dental infrastructure of Alameda County, how the various components provide dental care for children and what policies can be changed to improve delivery of care. The data collected will be utilized to study the dental infrastructure of Alameda County for low income pediatric patients. On completion of the study, you will receive a summary report of the findings that may be helpful to you for future program and policy work.

Attached is a consent form for your review to participate in the study. Please let me know if you have any questions and I will be contacting you to set up the interview.

Sincerely,
Aparna Aghi
1st year pediatric dental resident
UCSF School of Dentistry, Pediatric Dental Clinic
(617)359-9271

Beth Mertz
Program Director, Center for Health Professions UCSF
(415)502-7934

CC: Dr. Jared Fine
APPENDIX D: Consent

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO
CONSENT TO PARTICIPATE IN A RESEARCH STUDY

Study Title: Explorations of a Community Dental Practice Model

Our research project is study designed to study the infrastructure of the delivery of dental care in Alameda County. Our focus is the dental safety net and public health programs that deliver dental services for children. The study researchers are Aparna Aghi D.M.D, second year pediatric dental resident at UCSF School of Dentistry in conjunction with Ed O’ Neil, M.P.A., Ph.D., FAAN (Director of the Center for Health Professions) and Beth Mertz (Director, Center for Health Professions).

Research studies include only people who choose to take part. Please take your time to make your decision about participating, and discuss your decision with your family or friends if you wish. If you have any questions, you may ask the researchers.

You are being asked to take part in this study because you are a member of the safety-net dental care delivery team in Alameda County. We want to know if you would be willing to participate in a survey regarding the structure of your program, the challenges your program faces as well as questions about how the dental safety-net programs in Alameda County work together to provide access to dental care.

Why is this study being done?

The purpose of our study is three fold. First we would like to find out what the existing sectors doing, what the components are to establish a sustainable comprehensive care dental delivery system, and how do the current policies in the State of California hinder or help sustain existing models. Alameda County is recognized for its efforts to overcome the significant barriers that exist to obtaining dental care. This study will provide a foundation of data that can be utilized to develop future programs.

How many people will take part in this study?

About 30 people will take part in this study.

What will happen if I take part in this research study?

The researcher will interview you for about an hour in a private office. The researcher will ask you information about your program that will be used to provide a general description of the safety-net dental care delivery models in Alameda County and some of the barriers that your program may face.
How long will I be in the study?

Participation in the study will take a total of about 2 hours.

Can I stop being in the study?

Yes. You can decide to stop at any time. Just tell the study researcher or staff person right away if you wish to stop being in the study.

What risks can I expect from being in the study?

Participation in research may involve some loss of privacy. However, if a paper is published utilizing any of the data provided the names of the programs or participants will not be disclosed. The study’s purpose is not to assess individual programs but to provide a descriptive analysis of one community’s attempt to provide greater access to dental care. Your contact information will not be shared with anyone outside this study.

Are there benefits to taking part in the study?

The study will provide information that would be difficult to obtain without a formal interview process. In addition the study maybe utilized by individual programs or policy makers to provide additional sources of funding for programs in order to overcome the barriers to accessing dental care. On completion of the study, you will receive a summary report of the findings that may be helpful to you for future program and policy work.

What other choices do I have if I do not take part in this study?

You are free to choose not to participate in the study.

Will information about me be kept private?

We will do our best to make sure that the personal information gathered for this study is kept private. However, we cannot guarantee total privacy. Your personal information may be given out if required by law. If information from this study is published or presented at scientific meetings, your name and other personal information will not be used.

What are the costs of taking part in this study?

There is no cost to participate in this study.

Will I be paid for taking part in this study?

You will not be paid for taking part in this study.
What are my rights if I take part in this study?

Taking part in this study is your choice. You may choose either to take part or not to take part in the study. If you decide to take part in this study, you may leave the study at any time.

Who can answer my questions about the study?

You can talk to the researcher(s) about any questions, concerns, or complaints you have about this study. Contacts for this study are Dr. Aparna Aghi at (617)359-9271, Beth Mertz at (415)502-7934 or Dr. Edward O’ Neil at (415)476-9486.

If you wish to ask questions about the study or your rights as a research participant to someone other than the researchers or if you wish to voice any problems or concerns you may have about the study, please call the Office of the Committee on Human Research at 415-476-1814.

CONSENT

You have been given a copy of this consent form to keep.

PARTICIPATION IN RESEARCH IS VOLUNTARY. You have the right to decline to be in this study, or to withdraw from it at any point without penalty or loss of benefits to which you are otherwise entitled.

If you wish to participate in this study, you should sign below.

______________________________________________________________

Date          Participant's Signature for Consent
APPENDIX E: Program Descriptions

1. **Eastmont Wellness Center**: “Specific goals are to manage caries through risk assessments and treatment, relieve pain and prevent dental disease.”

   Target group: Alameda county residents regardless of ability to pay

   Pediatric services: Comprehensive, including education

   Program type: Community-based dental clinic

2. **Early Oral Health Care Program**: Based out of the Eastmont Wellness Center

   Target group: Children with high caries risk

   Pediatric services: Patients are given a caries prevention card to be seen within 24 hours when they present the card; children in the program are placed on more frequent recalls to focus on behavioral changes to prevent cavitation of early lesions.

   Program type: Prevention program out of a community-based clinic

3. **La Clinica Dental at Children’s Hospital Oakland**: “To treat the dental needs of children from our community with an emphasis on those with Medicaid and developmental issues.”

   Target group: Pediatric patients in the community

   Pediatric Services: Comprehensive, not including education

   Program Type: Hospital-based dental clinic
4. **Alameda County Medical Center (Highland Hospital):** “Committed to maintaining and improving the health of all County residents, regardless of ability to pay.”

   Target group: Alameda residents

   Pediatric services: Emergency and oral surgery

   Program type: Hospital-based oral surgery clinic

5. **Asian Health Services:** “To serve and advocate for the medically underserved, including the immigrant and refugee Asian community, and to assure equal access to health care services regardless of income, insurance status, language or culture.”

   Target group: Medicaid and uninsured.

   Pediatric services: Comprehensive, including education

   Program type: Community-based dental clinic

2. **La Clinica Fruitvale/Transit village:** “Improve the quality of life and health status of East Bay medically underserved communities.”

   Target group: East Bay community

   Pediatric services: Comprehensive, including education and orthodontics

   Program type: Community-based dental clinics
3. **Tiburcio Vasquez Union City Clinic**: “Dedicated to promoting the health and well-being of our community by providing accessible high quality care.”

Target group: Low-income, underinsured, uninsured, people below poverty level, the Latino and African American populations

Pediatric services: Comprehensive, including education

Program type: Community-based dental clinic

4. **Lifelong Dental Clinic**: “Provide high-quality health and social services to underserved people of all ages.”

Target group: Children ages 1-5

Pediatric services: Comprehensive, including education

Program type: Community-based dental clinic

5. **Native American Health Center**: “Assist American Indians and Alaska Natives to improve and maintain their physical, mental, emotional, social and spiritual well-being with respect for cultural traditions and to advocate for the needs of all Indian people, especially the most vulnerable members of our community.”

Target group: Uninsured and underinsured.

Pediatric services: Comprehensive, including education

Program type: Community-based dental clinic
Office of Dental Health: “Office of Dental Health promotes the oral (dental) health of Alameda county residents by assessment of oral health problems and resources to address them. This unity assures access to community-based resources and programs, and develops policies that address the oral health needs of the community. The emphasis is on prevention.”

The following are a list of programs based out of the Office of Dental Health in Alameda County:

**WIC (Women, Infants and Children) Oral Health Collaborative:** “Establish dental homes for children around one year of age and initiate early preventive education and care.”

Target group: Children and families of Alameda County who are WIC family participants

Pediatric services: Education, preventative services, case management

Program type: Prevention program through Office of Dental Health

**Elevate Project in Oakland:**

Target group: Middle school 6th, 7th and 8th graders for community-based organizations (such as Lifelong, La Clinica, Native American Health Center)

Pediatric services: Comprehensive

Program Type: Grant to establish school-based dental clinics.

**Healthy Smiles Children’s Dental Program**
Target group: Children under age 19 with dental needs and no dental insurance

Pediatric services: Assists families of uninsured children to enroll in MediCal, Healthy Families, or other medical and dental insurances.

Program type: Office of Dental Health prevention program

**Healthy Kids Healthy Teeth:** Provider training to increase the number of dentists comfortable and willing to treat young children. HKHT will also train medical doctors in preventive procedures.

Target group: Children age group 0-5 years

Pediatric services: Families can enroll their child into HKHT to receive a referral to a participating dentist

Program Type: Office of Dental Health prevention program

**Ready to Learn Dental Policy Initiative:** Program designed to demonstrate the feasibility and the cost of ensuring universal dental services for kindergarteners by providing funds for an exam at the start of kindergarten, funding all necessary dental work, and ensuring that all preventative and restorative care is completed by the time the children enter first grade.

**Target group: Kindergarteners**

**Pediatric services: Case management and financing**

**Program type: Initiative passed by Congress but not funded**
First smiles Dental Health initiative: Train physicians to screen for dental caries and apply fluoride varnish.

7. **McDonald School Based Program:** This program is based out of the Office of Dental Health but the interview was conducted separately.

Target group: Schools with a free-or-reduced-school-lunch percentage greater than 50%. 2nd and 5th graders

Pediatric services: Provide preventive dental services in the school setting; referral of uninsured children to Healthy Smiles Children’s Dental Program (see below).

Program type: School-based dental clinic
APPENDIX F: Denti-Cal and Health Families Eligibility Criteria

Criteria for eligibility of Denti-Cal benefits.
http://www.hrsa.gov/reimbursement/states/California-Eligibility.htm

<table>
<thead>
<tr>
<th>Infants up to age 1</th>
<th>Income 200% of FPL or less.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children age 1 through age 5</td>
<td>Income 13% of FPL or less.</td>
</tr>
<tr>
<td>Children age 6 through age 18</td>
<td>Income 100% of FPL or less.</td>
</tr>
</tbody>
</table>

FPL: Federal Poverty Level


<table>
<thead>
<tr>
<th>Family Size</th>
<th>Child Age 0 to 1 or Pregnant Woman Medi-Cal</th>
<th>Child Age 0 to 1 Healthy Families</th>
<th>Child Age 1 thru 5 Medi-Cal</th>
<th>Child Age 1 thru 5 Healthy Families</th>
<th>Child Age 6 thru 18 Medi-Cal</th>
<th>Child Age 6 thru 18 Healthy Families</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$0 - $1,805</td>
<td>$1,806 - $2,257</td>
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<td>2</td>
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<td>$1,616 - $3,036</td>
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<td>$0 - $1,839</td>
<td>$1,839 - $4,594</td>
</tr>
<tr>
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<td>$0 - $4,299</td>
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<td>$0 - $2,859</td>
<td>$2,860 - $5,373</td>
<td>$0 - $2,150</td>
<td>$2,151 - $5,373</td>
</tr>
<tr>
<td>6</td>
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<td>$4,923 - $6,153</td>
<td>$0 - $3,273</td>
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<td>$0 - $2,461</td>
<td>$2,462 - $6,153</td>
</tr>
<tr>
<td>7</td>
<td>$0 - $5,545</td>
<td>$5,546 - $6,932</td>
<td>$0 - $3,688</td>
<td>$3,689 - $6,932</td>
<td>$0 - $2,773</td>
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</tr>
<tr>
<td>8</td>
<td>$0 - $6,169</td>
<td>$6,170 - $7,711</td>
<td>$0 - $4,102</td>
<td>$4,103 - $7,711</td>
<td>$0 - $3,085</td>
<td>$3,086 - $7,711</td>
</tr>
<tr>
<td>9</td>
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<td>$0 - $4,517</td>
<td>$4,518 - $8,490</td>
<td>$0 - $3,396</td>
<td>$3,397 - $8,490</td>
</tr>
<tr>
<td>10</td>
<td>$0 - $7,415</td>
<td>$7,416 - $9,269</td>
<td>$0 - $4,931</td>
<td>$4,932 - $9,269</td>
<td>$0 - $3,708</td>
<td>$3,709 - $9,269</td>
</tr>
</tbody>
</table>

Add the following dollar amount for each additional family member:

$624  $625 - $780  $415  $416 - $780  $312  $313 - $780
APPENDIX G: Provisions of the Patient Protection and Affordable Care Act

The Patient Protection and Affordable Care Act bill included the following provisions for oral health, adapted from the CDHP website: http://www.gih.org/usr_doc/CDHP_Summary_of_Dental_Provisions_in_Health_Reform

* Require insurance plans to include pediatric oral health services for children up to 21 years of age
* Require essential health benefits package to include oral health pediatric services
* Expand Medicaid eligibility for adults and children
* Increase federal support to states to pay for expanded Medicaid coverage
* Extend the Children Health Insurance Program for five years
* Establish an oral health prevention program and fund states to develop oral health leadership
* Enhance oral health data systems and improve the delivery of oral health
* Implement dental sealants, water fluoridation and preventive programs
* Establish a five-year national, public education campaign focused on oral health care prevention and education and targeted to certain populations, including children, the elderly, and pregnant women
* Award demonstration grants in consultation with professional oral health organizations to eligible entities to demonstrate the effectiveness of research-based dental caries disease management activities
* Authorize the Medicaid and CHIP Payment and Access Commission (MACPAC) to review payments for dental services in Medicaid and CHIP
* Establish a process for updating payments to dental health professionals
* Reaffirm that dentists will be members of the Commission
* Establish a separate dental section and funding line of $30 million for training in general, pediatric, and public health dentistry
* Increase eligibility for new grant programs in the Title VII Health Professions Programs to train dental and allied dental health professionals
* Make dental schools eligible for federal grants for pre-doctoral training, faculty development, dental faculty loan repayment, and academic administrative units, grants currently available only to medical schools
* Extend the National Health Service Corps and increase funding for its scholarship and loan repayment program by $2.7 billion over five years
* Reauthorize the Indian Health Service and allow for the election by Indian tribes and tribal organizations in a State to employ dental health aide therapists when authorized under State law
* Authorize grants to establish training programs for alternative dental health care providers to increase access to dental health care services in rural, tribal, and underserved communities
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Date