IMPROVING ORAL HEALTH CARE SYSTEMS IN CALIFORNIA

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Please note that the views expressed in this report are those of the authors. The participation of these individuals as advisors for the project does not imply endorsements of the findings, conclusions or recommendations in this report.

ACRONYMS USED IN THIS REPORT

AAPD	American Association of Pediatric Dentists
ASTDD	Association of State and Territorial Dental Directors
ADA	American Dental Association
ADEA	American Dental Education Association
AEGD	Advanced Education in General Dentistry
BBTD	Baby Bottle Tooth Decay (now referred to as ECC)
CDA	California Dental Association
CDC	Centers for Disease Control
CHDP	Child Health and Disability Program
CSPD	California Society of Pediatric Dentists
DHPSA	Dental Health Professional Shortage Area
DPH	Dental Public Health
EBD	Evidence Based Dentistry
ECC	Early Childhood Caries
EPSDT	Early and Periodic Screening, Diagnosis, and Treatment
FDA	Food and Drug Administration
GPR	General Practice Residency
HCFA	Health Care Financing Administration
HRSA	Health Resources and Services Administration
IADR	International Association for Dental Research
IOM	Institute of Medicine
IT	Information Technology
JCAHCO	Joint Commission on Accreditation for Health Care Organizations
MRMIB	Managed Risk Medical Insurance Board
NCQA	National Center on Quality Assurance
NHANES	National Health and Nutrition Education Survey
NHSC	National Health Service Corps
NIDCR	National Institute of Dental and Crainofacial Research
OMDS	Office of Medicaid Dental Services
OSHPD	Office of Statewide Health Planning and Development
PHS	Public Health Service
SCHIP	State Children's Health Insurance Program
UCSF	University of California, San Francisco
WIC	Women, Infants and Children Program

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Roadmap to this Report

Chapter 1 provides the fundamental concepts on which this report is based. As well, it discusses the scope of the problem in California. **Chapter 2** provides an overview of the dental care delivery and financing system. **Chapter 3** discusses the macro issues integral to improving the oral health of California's communities; how the system functions, who is in need of care, who should be the partners and leaders, and what should be the framework for action. **Chapter 4** discusses how the traditional system and the dental safety net address specific barriers to care, what populations they serve, how effective these approaches have been, and what additional barriers might be addressed through program expansion. Model programs are highlighted in case study format. **Chapter 5** discusses evidence based dentistry, a missing element in the current system. This Chapter focuses on issues surrounding the science of oral health and the accountability of health professionals, as well as a need for an interdisciplinary model of care. **Chapter 6** highlights the themes found across programs that may foster access and contribute to improving the quality of oral health care in California. These include approaches that can be taken in practices and programs, including the integration of evidence-based care, interdisciplinary and collaborative approaches, consumer education and awareness and provider accountability. **Chapter 7** reviews the landscape of current recommendations, and discusses strategies for implementing change. **Chapter 8** presents the recommendations.

Executive Summary

EXECUTIVE SUMMARY

California and the nation now face an oral disease situation that is of a crisis nature. The situation has developed over several decades and involves a complex set of problems, institutions, attitudes and financing arrangements. For millions across California, access to oral health care services is severely compromised. In part, this crisis is driven by the inability of the current arrangements for oral health to care for all of the needs of Californians. This results in unacceptable levels of oral diseases, particularly in the most vulnerable populations: children, elders, non-white racial and ethnic communities, and the economically disadvantaged. This places extreme pressure on limited public health resources, leaving them with little ability to respond much beyond meeting the acute care needs of these populations. The solution to these complex issues lies in a more effective use of private and public sectors resources organized and deployed using evidenced-based approaches to oral care and service.

The California Dental Access Project (CDAP) was developed to review and analyze the complex issues that must be considered and addressed to improve access to oral health services for underserved populations in California. Recommendations are framed as action steps to:

- foster partnerships and collaborative efforts,
- use resources more efficiently, and
- institute evidence-based models.

With funding from the California HealthCare Foundation, the CDAP was conducted by the University of California, San Francisco (UCSF), Center for the Health Professions, with assistance from a 13 member advisory committee. This report provides an introduction to the oral health issues facing California framed by five basic principles.

1. **There exists a shared responsibility for California's oral health**
2. **Oral health is an essential component of overall health**
3. **Access to dental care is essential for good oral health but not its sole determinant**
4. **There should be standards for all oral health services**
5. **There are standards for all health professionals**

Lacking a comprehensive system of oral health care, California fails to protect the oral health of many of its residents, particularly the most vulnerable. To respond to this need will require integrated action from professional associations, educational systems, and government programs.

The current arrangements for *oral health care* create many of the barriers to access. Key among these are the following realities:

- Private practices are oriented to serve a population that is capable of paying for service, committed to the idea of preventive oral health and culturally similar with the population served.
- The number of Californians without dental insurance is two to three times the number without medical insurance. Even those with public insurance are many times unable to access dental care due to the lack of providers participating in publicly funded programs.
- Enrollment and utilization of eligible benefits is an ongoing problem, despite a variety of public programs aimed at making dental care available.
- Funding for many of these programs is categorical or not sustainable, making it difficult to provide continuous, quality care for the underserved

Education of the dental workforce not only provides the technical skills needed for quality care, but also shapes the way these professionals practice, where they locate, and what orientation they have towards treating the underserved. For example:

- Dental education focuses on service delivery to individuals whereas most of the solutions for the underserved lie in population based strategies.
- The racial and ethnic diversity of dental professionals is not consistent with that of the population, restricting access to care for millions of the state's culturally diverse residents.
- Dentists graduating with high levels of debt are unlikely to work for safety net programs that typically pay less and treat more challenging patients.

The *macro issues* integral to improving the oral health of California's communities include; how the current system functions, (financing, workforce issues, services available, public health interactions) who is in need of care, and who should be the partners and leaders. This report addresses these issues and suggests a framework for action. The report finds that:

- Primary health care represents a major underutilized resources for the provision of dental services for underserved populations
- Oral health programs must compete with more pressing interests (prevention and treatment of life-threatening diseases) for funding.
- California's population consists of significant numbers of the disenfranchised: the poor, children, immigrants, elderly, non-white racial and ethnic communities.
- Significant financial, physical, attitudinal and process barriers to dental care exist. Programs that have successfully overcome these barriers are in part characterized by collaborative efforts between many different institutions.

Innovative alternatives exist to the traditional private practice system and dental safety net systems. The report explores several case studies of efforts to address specific barriers to care, what populations are served, how effective previous approaches have been, and what additional barriers might be addressed through program expansion. Creative new models exist for expanding prevention activities and dental treatment, but are not widely used.

- Using evidence to design private and public practices of dentistry is now being recognized as one of the keys to more effective use of scarce resources to increase access and improve management of the population's oral health. This report concludes that evidence-based dentistry is not a concept that is widely known or accepted in the dental community.
- Dissemination of new findings and technology are hindered by the relatively independent and isolated status of the dental profession from other health professionals. This isolation is reinforced during the dental education process, which involves only limited interaction with other health care professionals.

The integration of evidence-based care, interdisciplinary and collaborative strategies, consumer education and awareness, and provider accountability are approaches which show promise for increasing access and improving the quality of oral health care in California.

An extensive review of existing literature, a survey of over 100 "safety net" dental programs both in California and across the country and assessment by the advisory committee led to the following conclusions.

1. The epidemic of oral disease that is being reported in California is caused in large part by lack of preventive oral health care for underserved populations. Oral disease is further exacerbated, and many times goes untreated, because these populations cannot access dental care. There are few private practitioners who will treat underserved populations, and safety net programs are not capable of filling all the gaps.

2. Disparities in oral health status and significant barriers in access to dental care are problems faced all across the nation, but are particularly challenging for California policymakers for the following reasons.

- growing and diverse population, including a high level of immigration into the state
- significant urban/rural differences and competing priorities
- income disparities

3. Scientific research has shown that poor oral health can contribute to other health problems, with long-lasting effects. Research has also shown us that dental caries (cavities), the most common childhood disease, is almost entirely preventable. Fundamental shifts in the entire system are necessary to impact this epidemic.

To address these challenges the study recommends the following roadmap for action.

- Responsibility for improving oral health care must be shared. No single agency, profession, or program can address the complex issues that compromise oral health. **Community and institutional partnerships** will be necessary to improve oral

health. There must be a unified direction and cohesive action across the institutions involved.

- **Leadership** in oral health promotion is a crucial catalyst for facilitating change.
- **Targeted funding increases,** both public and private, are necessary if any meaningful changes are to occur in the provision of preventive oral health services and oral health care.
- Oral health care needs **evidence based demonstration models** in delivery settings.
- **Information technology** can be used to revolutionize the processes of professional and community education, care delivery, and health monitoring and tracking, but awaits implementation.
- Significant opportunities exist for expanding existing health and welfare resources. **Integrating dental services into primary health care** delivery is essential if services are to be made available for underserved populations.
- **Dental workforce shortages** must be addressed with creative new solutions. Inter-professional disputes and turf wars over scope of practice must be replaced with collaborative efforts to address the oral health needs of California's residents.
- **Evaluation** of efforts is key to providing future direction for new education models, care delivery models, and programmatic efforts.

RECOMMENDATIONS

There is no dearth of recommendations on how to fix the system; the problems seem to occur in implementing the suggested changes. Many of them require significant shifts in priorities and basic functioning of major institutions--no small task! After reviewing a decade of recommendations for reform, this report suggests two strategies for California. The following recommendations propose a major shift in how resources are allocated to oral health activities, giving high priority to low-cost preventive activities and safety-net programs to address existing disease levels. The general strategy entails:

- Expand activities, both preventive and treatment oriented, using the best available evidence
- Move the focus upstream to prevention-oriented activities
- Evaluate outcomes of different strategies to direct future efforts. Include cost benefit analysis and monitoring of health status to judge long-term trends.

RECOMMENDATION I: PREVENTION

OBJECTIVE

Increase the percentage of California residents, particularly children and underserved populations, receiving preventive oral health services.

LONG TERM STRATEGY

Increase preventive oral health activities through expanded contact points with populations at risk for disease, primarily through outreach and integration of oral health services with other social and health services. Prevention activities exist at three levels:

a. Community-based prevention activities (e.g., education, outreach, fluoridation)
b. Clinical primary prevention activities (e.g., sealants, prophylaxis, fluoride varnishes)
c. Clinical secondary prevention activities (e.g., restorations)

Each level must be accessible and targeted at those who need it the most.

ACTION STEPS

CONSUMER

- Expand the number of outreach programs to underserved groups to educate them on oral health basics and provide preventive care
- Expand the availability and third party coverage of preventive services in schools or other locations

PROVIDER

- Develop a core preventive oral health curriculum for all health professionals including competencies in infant oral care, management of high risk children, oral health assessments by primary care providers and interprofessional coordination. This should be taught both in mini-residencies and traditional health educational settings
- Initiate cross training for health professionals, such as pediatric residents and dental students, so they can learn together
- Encourage dentists and other oral health professionals to participate in community-based health programs and local collaborations for oral health

- Expand dental coverage to reimburse a variety of health professionals (not just dentists) for providing preventive services. Provide incentives for preventive care delivery by these professionals (reimbursement, funding , CE courses etc.)
- Train social workers, public health nurses, and other professional outreach staff to screen and recognize oral diseases
- Increase the number and scope of education programs for dental hygienists and assistants
- Make every possible effort to integrate oral health as a component of primary health care. This includes education, assessment and reimbursement, for both students and practitioners

SYSTEM

- Support community water fluoridation
- Experiment with new and innovative care models using dental hygienists, assistants and other health professionals
- Provide case management for enrollees in public dental programs
- Develop protocols for preventive oral health services
- Expand school based oral health care delivery systems

RECOMMENDATION II: TREATMENT

OBJECTIVE

Reduce the level of untreated dental decay and periodontal disease in underserved populations in the State.

LONG TERM STRATEGY

Increase the number of completed "episodes of care" by increasing access to quality, affordable, dental treatment. An episode of care would be considered the sequence of dental visits needed to complete a treatment plan and restore oral health. Increase access to care through expansion of dental safety net programs. Improve the effectiveness of the

dental delivery system by increasing the continuity, productivity and use of evidence-based treatment.

ACTION STEPS

CONSUMER

- Increase efforts to enroll eligible individuals and families in the existing public dental benefit programs and help them find and utilize a dental "home" as soon as they are enrolled.
- Expand and promote dental insurance to have parity with medical; all children under 18 should be covered.
- Advocate for Healthy Families dental only coverage, plus coverage for parents of Healthy Families children.

PROVIDER

- Implement the following changes in Medicaid and Healthy Families to encourage provider participation.
  - Tax credits or enhanced reimbursement for certain levels of participation
  - Increase in reimbursement rates (this is a necessary but not sufficient strategy)
  - Reduction of administrative burden
  - Enhance case management and enabling services for enrollees compliance
- Develop incentive programs to increase oral health resources in low-income communities through such strategies as service-learning sites, loan repayment and low-interest loans for infrastructure.
- Increase the racial and ethnic diversity of dental professionals through recruitment, retention, and mentor programs for these groups.
- Refine and simplify the dental HPSA designation process and increase availability of dental placements in these areas.
- Revise dental curricula to increase the focus on community health and evidence-based model of care delivery, focusing on outcomes, cultural competency, efficiency and accountability.

SYSTEM

- Create a more flexible licensure policy to facilitate increased mobility of dentists to the state. This should including licensure by credential and reciprocity with other states.
- Develop case management systems for at-risk populations to ensure they complete every episode of care. This should entail such innovations as using community health workers.
- Prioritize community and individual needs through state and local risk assessment. This will help target funding and programmatic efforts.
- Increase the number of dental clinics, safety net programs, and oral health professionals that serve high-risk, underserved communities. Only a small percent of California's community clinics offer dental services. This system represents a significant portion of the safety net providers in the state. Expand existing infrastructure and support programs.

Chapter 1
Introduction

PURPOSE OF THE REPORT

This report seeks to make sense of the complex issues that must be considered and addressed to improve access to oral health services in California. Recommendations are made for tangible action steps that can be taken to manage the changes that are needed, including fostering partnerships and collaborative efforts, using resources more efficiently and instituting evidence-based models.

GOALS OF THE REPORT

1) Provide the basic rationale and context for oral health services in California
2) Explain the barriers to care that impede many California residents from obtaining care
3) Analyze current programs and policies that address barriers to achieving good oral health
4) Highlight promising models to address various types of barriers
5) Discuss new research that could facilitate increased access to and quality of oral health services
6) Provide a rationale and examples for using interdisciplinary models of care
7) Recommend appropriate strategies to increase access to quality preventive oral health services and restorative care in a comprehensive, integrated, sustainable manner.

INTRODUCTION

California is not meeting the oral health needs of the citizens of the state. As a community, we have a shared responsibility to ensure that all California residents, regardless of age, race or health status, have equal access to quality, affordable health care, including oral health care. This report evaluates the current system of preventive services and dental care and the problems this system has in meeting the goal of optimal oral health for all Californians. It then proposes moving toward a system that goes beyond the existing ways of delivering preventive services and dental care to a more all-encompassing model that is more flexible and permeable, incorporates high standards of good oral health, and is integrated within other health systems. The report calls for making significant changes in how oral health services are delivered in California.

Recently, a number of reports and initiatives have focused attention on oral health as well as its impact on the overall health of communities. In March 2000, *Oral Health in America: A Report of the Surgeon General* called for the reduction in the number of Americans with poor oral health (USDHHS 2000). Within the same month, the Dental Health Foundation's Children's Dental Health Initiative in California released a report citing a "neglected epidemic" of childhood caries (cavities) in California, particularly among the most vulnerable population groups (Dental Health Foundation 1997). These reports reinforce what community health professionals in California experience daily while trying to address the oral health needs of Californians.

Despite unprecedented economic prosperity and overall improvements in health and oral health, disparities in oral health status and access to oral health care continue to exist (Office of Inspector General 1996; CDC, HRSA et al. 2000; GAO 2000; USDHHS 2000). Dental care, even more so than medical care, has become a marker of social disparity in our country. The Surgeon General's report notes that there are disparities in oral health status and oral health care access and utilization for racial/ethnic minority groups, low-income individuals, and special populations including homeless, elderly, disabled and medically compromised individuals.

Multiple national and state studies support these findings. Data published by the National Center for Health Statistics (NCHS) in 1992 indicate that only 41 percent of people with a family annual income of less than $10,000 reported visiting a dentist within the year, as compared with 73 percent of people with a family income of more than $35,000 a year (Manski 1998). Data on children ages five to 17 years by poverty status indicate similar gaps in the likelihood of obtaining dental care. Recent research shows that 80 percent of tooth decay occurs in only 25 percent of U.S. children and adolescents; low income is a significant risk factor for childhood caries; and nationally, the greatest unmet treatment needs are seen in children from families with low incomes—including those children who are eligible for dental coverage under the Medicaid program (Edelstein 1998).

In California, only half (47.3%) of rural children under age five have ever visited a dentist (Dental Health Foundation 1997). The problem is even more pronounced for children in the state who are very poor: only 16.8% of children covered by Medicaid are reported to have received preventive dental services in 1993 (Aved 1996). The 1993-94 California Oral Health Needs Assessment of Children determined that nearly half of California's Asian and African-American high school students and three-quarters of Latino students need dental care (Dental Health Foundation 1997). As improvements in oral hygiene and access to fluorides and sealants become commonplace in many middle and upper class families, dental caries become primarily a disease of disadvantaged children.

Insurance coverage is an important indicator of access to care. The National Survey of America's Families in 1997 showed that 5.4% of children and 12.5 % of adults with private health insurance had unmet dental need[1], compared to 7.8% of children and 16.0% of adults with public insurance and 14.7% of children and 17.6% of adults without insurance. The rates of unmet dental need are slightly higher in California than the national averages, as are the rates of uninsured persons (Haley and Zuckerman 2000).

> "Children suffer daily the distraction of chronic toothaches, acute and searing pain of dental abscesses, disfigured smiles, dysfunctional speech, and difficulty in eating... Chronically poor oral health is associated with diminished growth in toddlers, compromised nutrition in children, and cardiac and obstetric dysfunction in adults. Affected children suffer through meals, are distracted from learning and playing, and live with the embarrassment and diminished self-esteem resulting from an unattractive appearance." (Edelstein 1998)

The situation for adults with unmet dental need is equally compelling. Pain and suffering from poor oral health hinders productivity, and some may not be considered for certain jobs due to their appearance (e.g., decayed or missing teeth or lack of personal hygiene).

[1] If a person did not get or had to postpone dental care that they needed in the previous 12 months.

Yet, many of the oral health problems people face are preventable through a combination of self-care, preventive public health measures, and access to regular oral health care. The recent Surgeon General's report noted as one of its eight themes (see sidebar) that safe and effective measures exist to prevent the most common oral diseases, and that new scientific research may be the key to further reduction of disease.

Themes of the Surgeon General's Report on Oral Health

1. Oral diseases and disorders in and of themselves affect health and well-being throughout life
2. Safe and effective measures exist to prevent the most common dental diseases – dental caries and periodontal disease.
3. Lifestyle behaviors that affect general health such as tobacco use, excessive alcohol use and poor dietary choices affect oral and craniofacial health.
4. There are profound and consequential oral health disparities within the US population
5. More information is needed to improve America's oral health and eliminate health disparities
6. The mouth reflects general health and well-being
7. Oral diseases and conditions are associated with other health problems
8. Scientific research is key to further reduction in the burden of diseases and disorders that affect the face, mouth and teeth

A Complex Problem

What, then, is separating those individuals in need of oral health care from the goal of good oral health? There are a number of interacting factors that contribute to this gap. This report identifies barriers to oral health at three levels – consumers, providers and systems of care. At each level there are barriers that can be classified as **financial, physical, cultural** or **process** in nature.

- Financial barriers include factors such as the lack of dental benefits/insurance and insufficient Medicaid provider reimbursement; these are the most tangible and the most frequently cited barriers to dental care in the current delivery system.

- Physical barriers, generally involving geographic distance and transportation for consumers to available services, are a significant problem. An uneven distribution contributing to regional shortages of primary care dentists and Medicaid dentists in the state has been documented (Manuel-Barkin, Mertz et al. 2000; Mertz 2000).
- Cultural barriers—such as a lack of perceived oral health needs and language differences between patient and provider—while the hardest to approach at the systemic level, must be eliminated in order to address the needs of the diverse population groups in the state.
- Process barriers—such as barriers caused by complex financing and reimbursement systems—also must be addressed within each stage of care delivery.

The World Health Organization notes that the objective of good health entails achieving the best attainable average level – *goodness* – and the smallest feasible differences among groups or individuals – *fairness*. (WHO 2000) This report approaches the objective of good *oral* health from the same perspective. A minimum standard of oral health should be attainable by all, and disparities in oral health status should be reduced if not eliminated. This goal can only be attained if approached as a shared responsibility of health professionals, public health systems, communities and consumers.

GUIDING PRINCIPLES

The report is guided by five principles.

1) ORAL HEALTH IS AN ESSENTIAL COMPONENT OF OVERALL HEALTH

Much reference will be made in this report to oral health and the need for good oral health. Essential in this discussion is the understanding that oral health is fundamental to overall health (USDHHS 2000). Despite the fact that oral health is routinely excluded from the discussion of so-called "comprehensive" health care, (Isman and Isman 1997) the mouth is the major portal of entry to the body and is equipped with formidable mechanisms for sensing the environment and defending against toxins or invading pathogens. In the event that the integrity of the oral tissues is compromised, the mouth

can become a source of disease or pathological processes affecting other parts of the body. It can also become a source of contagion by means of contaminated fluids or materials passed to others (USDHHS 2000). Not only are oral diseases infectious, but the health of one's mouth impacts the health of one's entire body, as dental and oral pathology has been linked to a variety of systemic illnesses (Slavkin and Baum 2000). Policymakers and society at large must expand their perception of oral health to understand that it is fundamental to overall health.

2) *Access to dental care is essential for good oral health but not its sole determinant*

Only addressing "access to dental care" limits the discussion to the ability to utilize the dental care system. Access is often equated with the utilization of services, most commonly measured by the number or frequency of visits to a dental care provider (Isman and Isman 1997). This excludes not only factors within the dental care system such as whether the individual received quality and appropriate care, but also factors that are external to the system. Having access to "good oral health" means that, in addition to having access to quality and appropriate dental care services, one has access to preventive measures, community water fluoridation, and information and education on maintaining good oral health and hygiene. Ultimately, the outcomes of good oral health can be measured in terms of survival (e.g., tooth survival); states of physiological, physical and emotional health; and satisfaction with appearance and dental care (Isman and Isman 1997).

3) *Promotion of oral health is a public responsibility*

In our society, individuals are held personally responsible for their oral health, despite the fact that many, particularly children, cannot obtain the oral health care they need for reasons beyond their control (Hazelkorn and Baum 1990). Generally, the social costs (or consequences) of maintaining oral health and treating oral diseases are measured in relation to time lost from work or school and reductions in normal activities. In her 1992

study, Gift used the 1989 National Health Interview Survey to explore the impact of oral disease on American children and workers. She determined that during 1989, 148,000 hours of work were lost per 100,000 workers, 117,000 hours of school were lost per 100,000 school-age children, and 17,000 activity days beyond work and school time were restricted per 100,000 individuals as a result of dental visits (preventive and restorative) or oral problems. Her analyses suggested that while there may be a low social impact individually from dental visits and oral conditions, at the societal level, such problems and treatments have a greater impact, particularly among disadvantaged groups (Gift, Reisine et al. 1992).

Lending to these disproportionate social consequences of oral disease are socioeconomic factors. Poverty is the most significant risk factor predicting oral disease (Warren 1999); in fact those most in need of care are likely to be the ones least able to obtain it (Grembowski 1989). Society, therefore, must assume some responsibility for correcting the market failures that perpetuate poor oral health status in the neediest populations. Good oral health at the societal level is beneficial as it provides a fundamental social base for future achievements, education and well-being. When there are significant disparities, as we see now, a social agenda is needed to address the underlying problems.

4) THERE SHOULD BE STANDARDS FOR ALL ORAL HEALTH SERVICES

This report addresses the oral health needs of California's underserved populations. Even though the population is diverse, standards need to be applied to all oral health services in California, regardless of population served or the context of care delivery. That is, oral health services should be:

- Comprehensive
- Equitable
- Accessible
- High Quality
- Evidence-Based

- Outcome-Oriented
- Culturally Appropriate

Whenever possible, oral health concepts and programs should be integrated with general health information and services. Dental professionals have a responsibility to provide current oral health information and options to the public and to remain up-to-date on clinical and preventive practices. Standards for the practice of dentistry and dental hygiene are addressed somewhat through each state's dental practice act, but the rules and regulations do not suggest appropriate pathways of care. Clinical guidelines and protocols still need to be developed, accepted and used by dental professionals, the insurance and managed care industry, and state and federal programs in order to assure a high standard of care is being provided and is linked to oral health outcomes.

5) *THERE ARE STANDARDS FOR ALL HEALTH PROFESSIONALS*

The California Dental Association Code of Ethics is a *general guide that suggests the conduct which a dentist is expected to follow in carrying out professional activities.* The CDA Code of Ethics suggests that the dentist should reflect constantly upon the professional characteristics of the dental profession, including (a) the provision of a service (usually personal) which is essential to the health and well-being of society, (b) dedication to service rather than to gain or profit from service and (c) leadership in the community, including all efforts leading to the improvement of the dental health of the public (CDA 2000).

Similarly, the mission of the California Dental Hygienists' Association states "To improve the public's total health, the mission of the California Dental Hygienists' Association is to advance the art and science of dental hygiene by increasing awareness of the cost effective benefits of prevention and ensuring access to quality oral health care; promoting the highest standards of dental hygiene education, licensure, practice and research; and promoting the interests of dental hygienists"(CDHA 2000). While these

qualities are open for interpretation, they are excellent starting blocks for reviewing the role of health professionals in creating good oral health. Not only should dental health professionals feel morally and ethically compelled to deliver the same standard of care to all individuals in the community, but should document successes and reasons for less than optimal results, and assume leadership roles in promoting oral health to the public and policymakers. In addition to dental health professionals, all health professionals must play a part in promoting oral health, as well as integrating oral health with the overall health of individuals.

These basic principles can be used to develop a comprehensive approach to improving oral health services and the dental care system. Improving the **quality and capacity** of services delivered in an **integrated system** will better address the overall oral health needs of California residents. **Additional pathways and mechanisms** exist that have the potential to reshape the system and create incentives to improve oral health on a variety of fronts. Health care **consumers** often are neglected as potential advocates for programs attempting to reduce oral health disparities. We need consumers who are more informed about oral health and can serve as advocates for change. Fostering **leadership and accountability** among dental professionals is another necessary step in improving the oral health of underserved populations. Changing the practice of dentistry and dental hygiene to a more **evidence-based system of care** may be one of the more difficult, yet most needed strategies to assess and document improvements in oral health. Integrated models of care using existing **community-based programs** are needed to open new pathways to underserved persons for education and information as well as service delivery.

Better methods for evaluating oral health programs and oral health care systems are needed. Many public health programs, however, are so overwhelmed with simply trying to fund and provide needed services, that they devote little time or resources to properly evaluate the cost-effectiveness or efficacy of their interventions.

CONCLUSION

The patterns of disparity in oral health, access to oral health care, and dental insurance coverage in California are troubling. The U.S. Census Bureau has determined that California is the first state where the total minority population creates the majority (Schevitz 2000). As our state becomes increasingly diverse, we continue to face new and greater challenges in treating oral disease and achieving a minimum level of oral health for all Californians. When one considers that oral diseases are almost entirely preventable, to continue to find significant oral health disparities is unacceptable (Dental Health Foundation 2000). California must find a better way to address the oral health needs of its residents.

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Chapter 2
Dental Care Delivery and Financing

DENTAL CARE DELIVERY AND FINANCING

Understanding the unique nature of the dental care delivery system and how services are financed is essential to understanding the current barriers to accessing dental care and any policy solutions designed to implement a new oral health care system. This chapter discusses the settings where dental services are provided, the professionals who provide dental care, and the financing mechanisms for dental services. It concludes with a discussion of the problems of access and quality facing this system.

DENTAL CARE DELIVERY SYSTEM

The dental care system consists primarily of small teams of professionals (dentists, dental hygienists and dental assistants) delivering dental care services in small independent practices and clinics. The majority of dental care is provided in these settings. Although most dental treatment is limited in scope, primarily preventing or managing tooth decay and periodontal disease, observant providers can identify oral cancer, auto immune diseases and systemic diseases during dental visits. Oral disease can be episodic, but is generally not life threatening if treated appropriately (USDHHS 2000). If not treated, however, oral diseases become chronic diseases. New technologies and changing patterns of disease are broadening the scope of dental practice. The average general dentist and staff now provide increased numbers and a variety of preventive services than in years past, but the majority of reimbursable services are treatment oriented. A reduction in the number of amalgam and resin restorations per patient per year from 1980 to 1995 has been noted, while procedures to improve esthetics (versus function) have increased. Although dentists now perform fewer extractions and restorations, preserving the teeth of an aging population has increased the need for crowns and periodontal treatment (Ingargiola 2000).

CARE DELIVERY SETTINGS

Only 10% of physicians are in solo practice, but 90% of dentists are in highly independent private practices, and 92% of those are in 1-2 person practices (ADA 1996). Dental care is a “cottage industry” which has fought the economies of scale expansion that has become popular among medical groups (Delta Dental 2000). Except for some

specialists and specialty care, the hospital is not a common treatment setting for dentistry. Rather, dentists typically own and operate their practices as businesses and are responsible for all facility, personnel, and administrative costs, as well as collection of income. As a result, dentists, particularly general dentists, have very high fixed overhead costs typically ranging from 60 to 75 percent of total gross collections. This is very different from the medical field, where many physicians rely on hospitals or other organizations to manage and bear most of the overhead costs associated with care.

Similar to medical professionals, dental professionals schedule 2-3 people at one time and the dentist alternates between operatories (dental chairs) while the dental assistants and dental hygienists perform various functions. A patient visit generally requires more time from a dental provider than is required from an equivalent visit to a physician; dental treatment is labor intensive, as most are outpatient intraoral procedures rather than prescriptions for medications or referrals for therapy. All of these factors contribute to the high overhead costs of dental practices, making missed appointments, low reimbursements, and complicated administrative burdens especially expensive for dentists. To offset these expenses, many dentists normally charge their private pay patients for broken appointments, a practice not common in physician offices.

THE DENTAL SAFETY NET

Beyond the private practice setting, dental care is also provided in public health clinics, dental and dental hygiene schools, hospitals, nursing homes, and other institutional settings. In addition, dental care is provided in non-institutional settings such as mobile van programs and school-based programs. These settings are referred to as the "Dental Safety Net," as they are the principal source of care for communities and special population groups that would otherwise have no access to dental services. The dental safety net is limited in scope both nationally and at the local level. Nationally, 40% of federally supported community and migrant health centers have dental facilities. In California, only 25% of community health clinics have a dental component (Manuel-Barkin, Mertz et al. 2000). Yet California's cultural diversity and broad socioeconomic strata predicate an even greater need for these clinics.

Private dental practices that treat a large number of Medicaid patients can also be considered part of the dental safety net. Many are efficiently run practices that see large numbers of Medicaid patients, while preserving quality. Yet some practices have profited by offsetting quality with volume, thus earning the title of Medicaid "mills. These "mills" are the unintended consequence of Medicaid paying below market rates, and programs that measure productivity by volume, not quality (Milbank Memorial Fund 1999).

THE DENTAL WORKFORCE[1]

The overall supply, distribution, composition and education of the dental workforce affects the ability of the profession to provide adequate oral health services to low income and underserved communities and the population as a whole.

DENTISTS

Nationally, the supply of dentists per population is decreasing which some believe indicates an increasing shortage of dentists. This increasingly inadequate supply relative to the population is attributed in part to a long-term decline in the number of dental school graduates and an aging dentist population (Spisak 1999). Early retirements might also contribute to the shortage.

The government's role in dental health personnel planning is, in part, to ensure that adequate care is received by consumers in an efficient manner. The need to plan for dental health personnel is rooted in the ethical imperative to use limited health resources appropriately. Various methods have been used to determine the appropriate supply of dental personnel, including the use of dentist-to-population ratios, need-based models, and demand based models (Goodman and Weyant 1990). Dentist–to-population ratios describe the change in overall supply, but the issue of dental productivity, which may vary by age and gender of the professional, as well as the reconfiguration of the dental workforce through increasing use of auxiliary dental workers, may have a significant impact on access to care. A 1995 Institute of Medicine report concluded "there is not a

[1] Mertz (2000) unless stated otherwise

compelling case for predicting either an oversupply or undersupply of dental practitioners in the next quarter century (Institute of Medicine 1995)." However, the report highlighted concerns about dental workforce *distribution* and *composition.*

In 1998 there were approximately 23,000 licensed dentists in active practice within the State of California. The distribution of dentists in California is a problem. Overall, 91.2 percent of active dentists practice in urban areas, while only 84.0 percent of the population resides in these areas. Primary care dentists (general practice or pediatric dentists) are slightly more likely to practice in rural areas (9.1%) compared to specialists (7.0%). By federal shortage designation standards, 20 percent of California communities, containing 12 percent of the state's population, are estimated to have a shortage of dentists. Rural areas tend to have the lowest workforce supply, but minority and low-income communities within urban areas are also disproportionately underserved (Mertz 2000).

DEMOGRAPHIC PROFILE

As in the rest of the U.S., dentistry in California has been primarily a male profession. Only 18 percent of dentists in California are women, although this is higher than the national percent of 8.3 percent in 1996 (ADA 1996). In California, while only 11 percent of dentists age 40 and over are women, 34 percent of dentists under age 40 are women, reflecting a higher percentage of female graduates in recent years. The average age of a practicing dentist in California is 48. This differs significantly by gender; the average age of a male dentist is 50, while the average age of a female dentist is 40.

Race/ethnicity data for dentists in California are incomplete overall, but reporting is more complete in the younger cohort. Of dentists in their 20s and 30s who did report race/ethnicity, 51.8 percent are white, 40.6 percent are Asian, 5.8 percent are Hispanic, 1.7 percent are African-American, and 0.2 percent are Native American. Hispanics and African-Americans are especially underrepresented among California dentists; they comprise 30 percent and 7 percent respectively, of the overall California population.

SPECIALTY DISTRIBUTION

The majority (80.6%) of the approximately 23,000 active dentists practicing in California in 1998 are in general practice (Mertz 2000). Nationally, general dentists provide 85% of dental care and account for 80% of total dental care costs. The opposite is true for medical providers, where secondary and tertiary care is most common, and primary care represents the smallest component and cost of medical care (Ingargiola 2000). The American Dental Association recognizes only nine specialties and no sub-specialties, while the American Medical Association recognizes 150 specialties and sub-specialties. While 82% of dentists in California are primary care dentists, fewer than 35% of physicians are primary care physicians (Coffman, Young et al. 1997)

DENTAL EDUCATION

Careful consideration must be given to optimizing California's five dental schools in their role in addressing and resolving state dental workforce issues. A highly skilled, culturally competent, diverse, and appropriately distributed workforce would greatly contribute to increasing access for many underserved populations. Over 60 percent of active dentists in California graduated from in-state dental schools; less than one percent graduated from foreign dental schools. Dental students are required to complete three to four years of dental school, at which time they acquire a doctoral degree and may begin to practice as general dentists following a state administered licensure examination. Dentists graduating from non-US schools generally need to take additional schooling in the US and pass national and state boards to get a US license. Post-doctoral training is optional for dentists, except for those in dental specialties. Many graduates, however, are enrolling in General Practice Residency (GPR) programs or Advanced Education in General Dentistry (AEGD) programs. The goal of these residency programs is to influence greater numbers of dentists to pursue careers in providing a broader range of services, services to special needs populations, and to establish practices in underserved areas. Dentists, including specialists, are not required to be board certified, but many specialists go on to do so.

In 1998, the average debt at graduation (of those students graduating with debt) of dental students was almost $98,000 – over 14 percent greater than the average graduating debt of medical students. Graduating seniors have indicated that debt level does affect their immediate career plans, including the location of their practice and the types of populations they will treat (Ingargiola 2000).

Allied Dental Professionals

Allied dental professionals include dental hygienists, dental assistants (or auxiliaries), and dental laboratory technicians. There are approximately 100,000 active dental hygienists in the U.S., with over 10,000 licensed in California (Hurlbutt 2000). Lack of licensing requirements for dental assistants and dental laboratory technicians makes it difficult to know the exact number in the workforce. The Health Resources and Services Administration (HRSA) estimates that in 1996 there were 212,000 dental assistants and 53,000 dental laboratory technicians in the United States (Table 2.1) (USDHHS 2000). While the dental workforce has increased significantly between 1980 and 1996, recent population growth (1990 to 1996) has matched the growth in most dental personnel, and, with the exception of dental hygienists, exceeded it in California.

Table 2.1
Estimated numbers of active oral health personnel, US, selected years

	1980	1990	1996	% Increase 1990-1996
Dentists	121,900	147,500	154,900	5%
Dental hygienists	54,000	81,000	94,000	16%
Dental assistants	156,000	201,000	212,000	5%
Dental laboratory technicians	43,000	50,000	53,000	6%
US Population	2,265,460,000	2,487,650,000	2,651,790,000	6%
California Population*	23,780,068	29,942,397	32,378,827	8%

Source: Health Resources and Services Administration, 1999, Statistical Abstract of the US, 1998
*Source: State of California, Department of Finance, *Race/Ethnic Population with Age and Sex Detail*, 1970-2040. Sacramento, CA, December 1998.

Despite the large increase in dental hygienists, there is some evidence that the numbers are still not adequate in relation to demand. Analysis of a recent ADA survey in Minnesota showed that, at present, patient demand is stable or strong, and that while an adequate supply of allied dental health workers is available statewide, some local supply problems exist (Born and Martens 1997). A survey of dental practices done in Arizona

recently showed that 90 percent of those surveyed indicated at least some need for more hygienists (Office of Oral Health 1997).

The majority of services provided by dental hygienists are preventive in nature. Practice acts vary across states, but most require performance of these functions under the general supervision of a licensed dentist.[2] This is the case in California, where the only exceptions are oral hygiene instructions, fluoride mouth rinse or fluoride supplement programs administered in a school or preschool program (State of California 2000). Some effective new clinical procedures are not yet delegated to dental hygienists in California, although they are in various other states. Dentists argue that supervision is necessary to protect the health and safety of the public. In some cases, dental hygienists may not be allowed to provide all of the procedures they legally can perform.

In 1998 the California Legislature passed the Registered Dental Hygienist in Alternative Practice Bill (RDHAP). This new law applies to dental hygienists meeting select criteria (education and practice hours) who have received a letter of acceptance into the employment utilization phase of the Health Manpower Project No. 155. The RDHAP is a private independent practitioner with a specific scope of practice for a select population. The RDHAP generally provides care to individuals who have no other access to care, and can provide services in hospitals, schools, long-term care facilities and designated shortage areas. Services may be performed by prescription and are billable to Medicaid or other insurance providers. Currently there is only a handful of RDHAPs in California.

Colorado is the only state that allows unsupervised practice for dental hygienists within their scope of practice. Unsupervised practice allows a dental hygienist to perform certain procedures without delegation by a dentist, either in a separate hygiene practice or another setting such as a nursing home, school clinic, corporate setting, or a satellite dental hygiene office owned by a dentist (Ingargiola 2000). Other states, such as California, Connecticut, New Hampshire and New Mexico, have recently passed

[2] Individual states also define “general supervision of a licensed dentist” differently

legislation that expands the role of the dental hygienist (see Appendix 1- Legislative Summary).

REGULATION AND LICENSING

Regulation through licensure of dental professionals is one governmental mechanism used to protect the public and ensure quality health care. While these processes have provided some benefits to the public, they have also have come under scrutiny for increasing costs, restricting managerial and professional flexibility, limiting access to care, and having an equivocal relationship to quality. Health care workforce regulation is a patchwork of fifty separate state systems, complex and often irrational. Current statutes, which grant near-exclusive scopes of practice for some professions, create barriers to high quality and affordable care by restricting supply of practitioners. Regulatory bodies are perceived by some as unaccountable to the public they serve, and doubt has been cast that the regulatory system can effectively protect the public (Finocchio, Dower et al. 1995; Payne 2000).

This is apparent in California, where current laws create barriers to entry for both dentists and allied dental professionals by requiring out-of-state practitioners to take the California Board exams even though they hold valid licenses in other states. There is no national licensing board for the clinical portion of the examination, and reciprocity is only allowed between a few states. Advocates of the current arrangement cite state's rights as being of paramount importance while advocates of alternative arrangements cite economic efficiency and increased access as justification for their position.

If there was a nationally recognized licensing board or process that resulted in all licensees being allowed to freely practice in any state in the US, this would have a significant impact on access. The long-term result would be that dentists and auxiliaries would move from low-wage areas to high-wage areas, causing wages to equalize across the US (adjusting for local cost of living factors). The ultimate impact would be a reduction in dental care costs and an increase in the quantity of dental care demanded (Smithwick 2000).

DENTAL CARE FINANCING

Dental care in the United States is financed primarily via private and public insurance and out-of-pocket payments. The concept of dental insurance is somewhat of a misnomer. The traditional concept of "insurance" is based on risk of harm. Because dental care is a constant need, with significant risk of minimal harm (i.e. a cavity) and minimal risk of significant harm (i.e. death), the insurance model used in medical care is not quite applicable. Because of this, most dental plans resemble payment plans or straight benefits with large amounts of individual contribution. This impacts not just the financing of care, but the entire service delivery system, as it shapes the way practitioners and patients negotiate "appropriate" care.

Regardless of insurance or payment mechanism, dental care fees are customarily charged by procedure performed, and usually on a fee-for-service basis. In 1998, 53.8 billion private dollars were spent on dental services, nearly 50% (25.8 billion) representing out-of-pocket payments (Table 2.2). Comparatively, only 15% of physician services were paid out-of-pocket (HCFA 2000).

Dental benefits are usually financed, negotiated, and administered separately from medical benefits. While over 43 million Americans are without medical insurance, 108 million are without dental coverage. Over 10 million children lack health insurance while over 23 million lack dental insurance (Gift, Reisine et al. 1992). In California, the percentage of the population without medical and dental insurance tends to be higher than the population nationwide. It is estimated that only 60% of Californians have some form of dental insurance. Dental insurance, though, cannot be considered a proxy measure for dental access. As discussed in the next section, factors such as the large variation in coverage across insurance plans influences utilization among the insured population.

Table 2.2
US Expenditures on Dental Services by Source of Funds, Selected Years

(Amount in Billions)	1991	1995	1998	% Increase 1991-1998
Personal Health Care Expenditures (total)	**33.3**	**45.0**	**53.8**	**61.56%**
Out-of-Pocket Payments	*16.1*	*21.1*	*25.8*	
Third-Party Payments	*17.2*	*23.9*	*28.1*	
Private Health Insurance	16.0	21.7	25.5	
Other Private	0.1	0.2	0.2	
Government (total)	**1.1**	**2.0**	**2.3**	**109.09%**
Federal	*0.6*	*1.1*	*1.3*	
Medicare	0.0	0.0	0.1	
Medicaid	0.5	1.0	1.1	
Other	0.1	0.1	0.1	
State and Local	*0.5*	*0.9*	*1.0*	
Medicaid	0.4	0.8	0.9	
Other	0.1	0.1	0.1	

NOTES: The figure 0.0 denotes amounts less than $50 million. Medicaid expenditures exclude Part B premium payments to Medicare by States under buy-in agreements to cover premiums for eligible Medicaid recipients. Numbers may not add to totals because of rounding.

SOURCE: Health Care Financing Administration, Office of the Actuary, National Health Statistics Group, 2000.

Private Third-Party Coverage

The majority of people with commercial dental insurance receive coverage through their employers. Generally speaking, larger companies and public sector institutions are more likely to offer dental benefits than smaller companies. Full-time employees are more likely to have dental benefits than part-time employees (Table 2.3) (Managed Care Taske Force of the American Dental Trade Association 1998).

Table 2.3
Employment-based Benefit Management

	Medical Plan	Dental Plan	Employment
Small Business			
Full Time	66%	28%	36 million
Part Time	7	3	14
Large Business			
Full Time	77	57	35
Part Time	19	13	8
Government			
Full Time	93	62	20
Part Time	87	62	14

Source: United States Bureau of Labor Statistics (2000)

Few dentists participate in staff model managed care arrangements or Health Maintenance Organizations (HMOs). The majority of the dental market (80%) is comprised of fee-for-service plans, either traditional indemnity or Preferred Provider Organizations (PPOs).

In California, approximately 13 million people are covered by dental PPOS and HMOs out of a total population of more than 34 million (CDA 1995). In 1997, approximately 115 plans enrolled 23 million people and 19,000 general practice dentists. The median dental HMO annual premium was $336 per family ($144 for single coverage) as compared to $624 per family for conventional coverage ($240 single).

Table 2.4: Dental Benefits At-a-Glance

Dental Indemnity benefits are expressed as a covered fee-for-service. This coverage allows patients to choose their own dentist. Limits and co-payments are set according to the level of coverage purchased by the employer or union.

Dental Health Maintenance Organizations (DHMO), also referred to as Capitated Plans or Prepaid Dental Plans, are legal entities that accept responsibility and financial risk for providing specific services to a defined population through a network of dentists that are usually paid monthly on a fixed per capita basis for each individual or family that is assigned to their dental office. Payment is not based upon the number or type of services rendered.

Dental Preferred Provider Organizations (DPPO) are dental plans with a network of dentists who have agreed to accept a specific level of payment for covered services. Reimbursement is on a fee-for-service basis.

Dental Referral Plans (DRP) are dental plans that arrange for individuals to have access to a panel of dentists who agree to provide services for the amount listed in a Fee Schedule. No payment is made from the plan to the dentist; dentists are paid by the enrollee.

Dental care is a service that all people need yet medical HMOs or PPOs in California rarely cover dental services. Only 4% of HMOs in California cover dental care, compared with 96% covering mental health therapy and 26% covering chiropractic care (Table 2.5).

Table 2.5: Coverage for Selected Services in Best-Selling HMO and PPO Group (50+ Members) Products, California, 1998		
Covered Services	**% of HMOs Covering**	**% of PPOs Covering**
Outpatient Mental Health	96%	100%
Infertility treatments	39%	17%
Vision Care	30%	17%
Chiropractic care	26%	67%
Dental care	***4%***	***0%***
Source: The State of Health Insurance in California, 2000		

A typical plan covers most preventive services, however these are the least expensive services. Once dental disease is present, a share of the costs normally is passed on to the consumer. Only 9% of plans cover 100% of costs for routine operative procedures such as fillings. Co-payments increase with more extensive and expensive services such as crowns, bridges, and partial or complete dentures.

Table 2.6 Typical Benefit Coverage				
	Preventive	**Routine Operative (fillings)**	**Prosthodontics (crowns, bridges, dentures)**	
100% coverage	79%	9%		
80% to 100%	3	7	More than 60%	17%
80%	13	63	50% to 60%	13
Under 80% coverage	4	21	Under 50%	70
Seventy-seven percent of orthodontic treatments covered: 11% with maximum lifetime benefits less than $1,000 and $1,500, and 15% with maximum lifetime benefits above $1,500				
Source: Watson Wyatt & Company 1996 database				

Not only do most plans not cover all costs of all services, most plans also have a deductible; nearly 80% of dental plans require a deductible paid by the employee (see Table 2.7). Significant deductibles can create disincentives for individuals to seek care; some may choose not to seek dental care.

Table 2.7 Typical Benefit Plan Deductibles		
	Individual Employee	Family Total
No deductible	22%	50%
Less than $50 per year	72%	5%
More than $50 per year	7%	45%
Source: Watson Wyatt & Company 1996 database		

Ultimately, the structure of the dental benefit and the nature of dental care delivery dictate that having "dental insurance" is not a sole determinant of access to care. Dental benefit plans assist the consumer in underwriting some of the costs of receiving care, and may even aid in negotiating prices that benefit both the consumer and the employer. However, while medical insurance is often used as a proxy measure for "access," (Schauffler and Brown 2000) the same assumption cannot be made as strongly in relation to dental care.

Public Financing Programs

Both the state and federal government administer a variety of public insurance programs designed for indigent persons and other special populations who might otherwise not be able to afford or qualify for dental insurance. Most of these programs have an income eligibility cutoff, but they work very similarly to private insurance programs. However, dentists often choose not to participate in public programs, citing reasons such as low reimbursement rates, high administrative requirements, and patient issues such as frequently missed appointments relative to the private market (Office of Inspector General 1996; GAO 2000; USDHHS 2000). Chapter 3 will discuss these barriers to care in further detail.

Medicaid (Medi-Cal)

The Medicaid program, established as Title XIX of the Social Security Amendments of 1965, was designed to provide health care for qualifying indigent and medically indigent persons, with funding shared between federal and state governments. Federal law requires all states to provide dental services to eligible children under age 21 as part of the Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) program. In California, EPSDT services are administered under the Child Health and Disability Prevention program (CHDP) with the exception of the treatment component, which is provided under Medicaid. While there is no mandate under federal Medicaid laws to provide adult dental services, states have the option of including dental services for adults in their Medicaid benefits package (Medi-Cal Policy Institute 1999).

Over 90% of Medicaid beneficiaries in California—adults and children—are eligible for a range of dental services. Medi-Cal, California's Medicaid program, administers these programs through the California Department of Health Services' Office of Medi-Cal Dental Services (OMDS).

Medi-Cal currently covers dental services for both children and adults that include diagnostic and preventive services such as examinations and prophylaxis (cleaning), restorative services such as fillings, and oral surgery services. Some services, such as crowns, dentures and root canals require prior authorization and some services such as dental sealants, fluoride applications and limited orthodontic care are covered only for children under age 21.

OMDC provides reduced fee-for-service dental care (Denti-Cal) through a contract with Delta Dental Plan of California (Delta Dental). Medi-Cal's Dental Services are funded through the same federal-state match formula as are other Medi-Cal services. The Federal Matching Assistance Percentage for FY 1998-99 is 51.55%. In 1999, dental services represented 5.5% of total Medi-Cal expenditures. In calendar year 1999, expenditures for Medi-Cal dental services totaled $569,941,977 (Medical Care Statistics Section 2000). In 1998, Medi-Cal payment rates varied from 17 to 68 percent of average regional dental fees, depending on procedure (GAO 2000). Low fees are the main reason cited by dentists for not participating in the Medi-Cal program.

Table 2.8
Medicaid Payment Rates as a Percentage of Average Regional Dental Fees for Selected Procedures, California 1998

Periodic oral examination	29%
Dental cleaning – child	68%
Metal filling – 2 surfaces	47%
Root canal treatment	18%
Extraction – single tooth	48%
Ranges of Medicaid rates as % of average regional fees	17-68%
Source: (GAO 2000)	

THE STATE CHILDREN'S HEALTH INSURANCE PROGRAM (HEALTHY FAMILIES)[3]

Legislation passed by Congress in 1997 created the State Children's Health Insurance Program (SCHIP), which provides billions of dollars to states (supplemented by required state contributions) to extend coverage for health care to uninsured children. Operated through the Managed Risk Medical Insurance Board (MRMIB), the Healthy Families Program, California's SCHIP, provides low cost health, vision and dental coverage to children under age 19 in low wage families (families with incomes above the level eligible for no cost Medi-Cal, between 100% and 250% of the federal income guidelines). Families participating in the program choose their medical plan as well as their dental plan. Delta Dental Plan of California is currently the most utilized dental plan for the majority of children enrolled in Healthy Families, with 206,134 enrollees as of July 2000 (Table 2.9). Families pay premiums of $4-$9 per child per month (maximum of $27 per family) to participate in the program.

Table 2.9
Healthy Families Program Subscribers Enrolled by Dental Plan, California, July 2000

Dental Plan	Currently Enrolled	
	Number	Percent
Delta Dental	206,134	68.0%
Denticare	57,579	19.0
Access Dental	35,804	11.8
Premier Access	2,677	0.9
Universal Care Dental	1,031	0.3
Unknown Dental Plan	11	0.0
Total	303,236	100.0%

Source: MRMIB, 2000

MEDICARE

Dental services covered under the Medicare program are very limited. Unlike Medicaid, Medicare (Title XVIII of the Social Security Act) is financed totally by the federal government; it was originally designed to provide physician and hospital services for all persons age 65 and older, regardless of income. Medicare is split into hospital insurance (Part A) and physicians' services (Part B), the latter being a voluntary supplemental insurance program paid for by the individual.

[3] Information provided from MRMIB/Healthy Families webpage www.mrmib.ca.gov

Medicare was not designed to insure routine dental care. Rather, as an exception to the statutory exclusion from Medicare of dental services, it covers dental services needed by hospitalized patients with specific conditions. These include dental services in connection with jaw fractures or with preparation of patients for radiation or chemotherapy in cases of oral and pharyngeal cancers, or as part of a comprehensive work-up prior to organ transplant surgery. Total Medicare payments for dental services in 1998 were $100 million (HCFA 1998).

The one exception under the Medicare program are those dental services provided within Medicare + Choice plans. Medicare + Choice is a term used to describe the various health plan options available to Medicare beneficiaries. Beneficiaries enrolled in some HMO plans within the Medicare + Choice program may be eligible for dental services. The degree of coverage and the amount of benefit vary by plan.

OTHER CALIFORNIA STATE PROGRAMS

The California Department of Health Services runs a variety of funding programs designed to target specific underserved populations. The County Medical Services Program (CMSP) reimburses the medical and dental costs for medically indigent adults aged 21-64 who are of marginal income and are not eligible for Medi-Cal, using the same scope of benefits as Medi-Cal. The CMSP Governing Board administers this program in conjunction with the Office of County Health Services. Thirty-four small, rural counties currently participate with a combined monthly caseload of 40,000 to 44,000 CMSP-eligible clients and an annual budget of $200 million. Over 93 percent of CMSP clients are eligible for dental services, and the total expenditures for dental services (FY 1996-1997) were $15.7 million.

The Children's Dental Disease Prevention Program (SB 111) seeks to assure, promote, and protect the oral health of California's school children by increasing their oral health awareness, knowledge and self -responsibility by developing positive, life-long oral health behaviors (CDHS 2000). The California Department of Health Services contracts

with the University of California, San Francisco, School of Dentistry to oversee the SB 111 program, which serves approximately 315,000 California preschool and elementary school children. Eligibility is based on the proportion of Free School Lunch Program participation for each county.

Two dental program consultants oversee the SB 111 program at the State level. Local coordinators are responsible for implementation and evaluation of the program at the local level. Health educators and teachers deliver dental health messages and oversee the brushing and fluoride components in the classroom. Currently, the SB 111 program operates 29 school-based programs in 28 counties throughout the state. The programs are administered either through the local health department, the county superintendent of schools, or through a nonprofit agency.

The SB 111 program has four required program components: 1) weekly fluoride mouthrinse or daily fluoride supplement; 2) plaque control; 3) classroom oral health education; and 4) an active oral health advisory committee. Optional components include dental screenings and dental sealants. County teams work on increasing access to oral health care, and educating the public to prevent baby bottle tooth decay, oral injuries, and other oral disease.

The Office of County Health Services also administers a variety of health programs through the use of Proposition 99 (a.k.a. the Tobacco Tax) funding. The California Healthcare for Indigents Program (CHIP) and the Rural Health Services Program (RHS) reimburse providers for uncompensated services for individuals who cannot afford care and for whom no other source of payment is available. The Children's Treatment Program (CTP) reimburses Medi-Cal and Denti-Cal enrolled providers for treatment of conditions detected through a Child Health and Disability Prevention (CHDP) program health screening. A CTP patient must reside in a participating county, be under the age of 19 on the date of service, reside with a family that does not qualify for Medi-Cal and have no other means to pay for such treatment. There are currently 33 counties involved in this program with 160 dentists participating.

The California Children Services (CCS) program locates California children who may need specialized medical care and encourages families with children with physical disabilities to obtain necessary medical services to maximize their children's potential (CDHS 2000). CCS will pay for treatment of dental conditions that affect complex medical conditions, and vice versa.

If a low-income family has a child with a CCS medically eligible condition, CCS may authorize financial assistance for any necessary medical care. CCS arranges and pays for diagnostic evaluations, if required, without regard to the family's income and resources. Parents must be legal California residents and the child must be under 21 years of age. CCS coordinates and monitors medical services for Medi-Cal children with CCS-eligible conditions in order to assure they are provided with the highest quality of care available.

DISCUSSION

There are several key components of the dental care delivery and financing system that create barriers to meeting the oral health needs of underserved populations:

1. Most dental care is delivered in independent private dental offices or public health clinics that are not integrated with other health services, maintaining the notion that oral health is separate from overall health. Providing oral health care in the same location as medical care could enhance the delivery of dental services; for example, individuals who seek medical care but not dental care might access dental care if it were delivered under one umbrella of services.
2. The dental safety net does not adequately meet the need and demand for preventive or restorative services. Many of the funding sources for this safety net are not sustainable. The dental public health system that focuses on preventing oral disease through public health education and services is underfunded and understaffed. California, unlike some other states, does not have a dental director in the Department of Health Services to monitor and respond to dental service demand.

3. The dental workforce is in increasingly short supply overall, is poorly distributed and is not representative of the state's populations. Licensure requirements and restrictive scopes of practice for allied dental professionals also contribute to access problems.
4. Costs of dental care are high and most are paid out of pocket, with services rendered based on ability to pay. Private dental insurance and employer based coverage is relatively low, and there is less public financing for dental care than for medical care. Existing public financing is unpopular with providers as it tends to reimburse below market rates.
5. In the current system, there is little accountability for health outcomes.

This section has given an overview of the dental care and financing system and the different components that must be considered in any attempt to increase access to dental care. We propose that while this system is the primary mechanism for getting dental treatment, a more integrated and dynamic dental care system involving multiple partnerships and interdisciplinary care may be the key to increasing access to high quality, preventive focused, dental care services. The delivery and financing systems as they currently stand are in and of themselves barriers to care. Further discussion of the systemic barriers to care follows in **Chapter 4**.

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Chapter 3
Oral Health Care Systems: The Context for Change

ORAL HEALTH CARE SYSTEMS: THE CONTEXT FOR CHANGE

To improve the oral health of California will require that the independent and fragmented arrangements for care service be coordinated around a goal of creating an *oral health care system*. To make the most significant impact on oral health status, such a system should focus on the care needs of the currently underserved communities. The primary focus of such a system would be the prevention of oral diseases through education and services in the dental office, in other health care settings, or in community-based settings. This would involve an integrated, coordinated, multidisciplinary effort. A second focus would be treatment of existing disease through professional care delivered by a licensed dental professional in a dental care setting.

Forming an oral health care system will entail overcoming a series of barriers that exist at the consumer, provider and systemic level. Approaching this problem as an integrated systemic challenge rather than as a series of discrete problems may permit more effective use of resources and better outcomes. What follows is a discussion from a systems perspective of issues involved in provision of oral health care for underserved populations. We begin with an overview of the barriers to care in the current system, and with a discussion of the populations who have the greatest access problems and oral health disparities. The ramifications of these issues are then explored within the context of the demographic and economic conditions of California communities. We review the various institutions that must be partners to address both issues of access and quality of care. Finally, we present a model for creating systemic change. Figure 3.1 defines some of the terms used throughout this report.

COMPONENTS OF AN ORAL HEALTH CARE SYSTEM

The general consensus among dental public health professionals is that there is an epidemic of oral disease in California (Dental Health Foundation 2000). This epidemic is manifest in specific population groups and occurs as the result of poor access to oral health care and preventive services, lack of a dental public health infrastructure, and lifestyle and cultural factors that increase risk for disease or serve as barriers to care.

Figure 3.1: Report Definitions

Dental Care: Includes diagnostic, preventive, restorative and specialty services.

Dental Care Delivery System: The system of care delivery sites for provision of clinical care that encompasses primarily private practices and dental clinics, but also may include schools, institutions or mobile vans. The term “system” is used loosely as there is no authority or organization that links these sites; most generally do not interact with each other or with the general health care system.

Dental Safety Net: The variety of programs, primarily public but private as well, that provide both preventive and restorative care for individuals and populations who can not access the traditional private practice delivery system of care. To say we have a safety net is somewhat of a misnomer, as currently there are millions of people who are falling through this net. The current "net" is more a patchwork of programs that attempt to meet an overwhelming need.

Dental Treatment: Clinical services that restore damaged or diseased teeth or oral tissues, including fillings, crowns, bridges, periodontal curettage, oral surgery, etc.

Financing System: Dental care is financed from public and private insurers, although a significant proportion of dental costs is individual out-of-pocket expenses.

Oral Diseases: Infections or other conditions such as dental caries, periodontal disease, oral cancer, and soft tissue lesions that can occur as acute or chronic conditions. Most require professional care.

Oral Health: The Surgeon General’s Report on Oral Health defines oral health as being free of chronic oral-facial pain, oral and pharyngeal cancers, soft tissue lesions, birth defects, and other diseases and disorders that affect the oral, dental and crainofacial tissues.

Oral Health Care System: A comprehensive approach to promoting and maintaining optimal oral health which includes; evidence-based dental care and education, adequately financed through public and private payors, provided by competent providers within the dental care delivery system, the dental safety net, and as yet untapped social and health care systems.

Preventive Services: Oral health measures that maintain existing health and promote ongoing health. These encompass individual, group, and public health measures provided in dental operatories or in community sites. Measures include oral health education, dental screenings, oral health promotion, community water fluoridation, fluoride treatments such as varnishes and gels, sealants and prophylaxis. Self-applied measures such as home rinses (fluoride or antimicrobial), fluoride supplements (tablets, etc), toothbrushing and flossing, may not be considered preventive services for purposes of financing or reimbursement, but they are still important primary preventive measures and add to the cost of maintaining ones oral health.

ep·i·dem·ic Pronunciation: "e-p&-'de-mik Function: adjective Etymology: French épidémique, from Middle French, from epidemie, n., epidemic, from Late Latin epidemia, from Greek epidEmia visit, epidemic, from epidEmos visiting, epidemic, from epi- + dEmos people – more at DEMAGOGUE Date: 1603
1 : affecting or tending to affect a disproportionately large number of individuals within a population, community, or region at the same time <typhoid was epidemic>
2 a : excessively prevalent b : CONTAGIOUS 4 <epidemic laughter> 3 : of, relating to, or constituting an epidemic <the practice had reached epidemic proportions>

The oral health care system as we define it, consists of not only the dental care delivery system but also a variety of other resources that contribute to optimal oral health. This includes the network of health and service providers and programs available to deliver services; the mechanisms that finance services, the regulatory, administrative and programmatic oversight service delivery, and the universities and hospitals charged with educating the dental workforce.

BARRIERS TO ACCESSING ORAL HEALTH CARE

"Access to care" has been defined and measured in a variety of ways (Isman and Isman 1997). The Institute of Medicine (IOM) defines it as "the timely use of personal health services to achieve the best possible health outcomes" (Institute of Medicine 1995). Regardless of which definitions or measures are used, it is clear that there is unequal access to oral health care in California.

Many factors influence whether a person seeks and obtains dental care. How one chooses to view these factors will affect both the evaluation of success in obtaining care and the policies one chooses to implement to address possible inadequacies in care delivery. This report looks at access barriers as those affecting individuals (patients, consumers) and workforce (providers), as well as those barriers that exist at the infrastructure or systemic level. The barriers that interfere with receiving or delivering care can be classified as **financial, physical, attitudinal** or **process barriers**. Each of these categories will be explained in greater detail as they relate specifically to the

consumer, provider, or system. Figure 3.2 provides a few examples of barriers to care that belong within each category.

Figure 3.2: Categories for Understanding Barriers to Dental Care

Physical Barriers --
- Lack of available dentists in area
- Lack of resources for overcoming physical barriers (e.g., handicap, transportation)

Financial Barriers –
- High cost of dental services
- Lack of dental insurance coverage (e.g., Medicaid,)

Attitudinal Barriers –
- Cultural discordance between patient and provider
- Perception of oral health importance relative to other priorities

Process Barriers –
- Lack of knowledge of eligibility for public assistance/dental coverage and/or enrollment process
- Limited office hours and employer does not provide time off for dental care

While many barriers are interrelated or occur simultaneously, individuals and populations may experience barriers differently. For example, it matters little if you can afford a dentist (financial barrier) if there are no dentists within a reasonable geographic distance serving your community (physical barrier). Similarly, the fact that a dental office does not have bilingual front-office personnel (attitudinal barrier) may be insignificant to non-English speaking individuals if the office will not accept their Medicaid dental coverage (financial barrier). Although this section categorizes each barrier to care, it is done with the understanding that, in any given scenario, there are likely multiple factors preventing access to optimal oral health.

Finally, it is important to understand that the majority of barriers to care are encountered when trying to access the traditional dental care delivery system (i.e. private practice dentistry). This system does its part in caring for those who are able and willing to access it, but in California there are many that fall through the cracks. There is a nominal

"dental safety net" in place to provide alternative means for accessing care, but with current resources, these programs only provide care for a small percentage of those in need of services. **Section 4** provides an analysis of the successes and challenges the existing dental safety net has had in providing care to underserved populations, particularly those in California. Ultimately, both the traditional private system and the safety net fail to provide the continuum of preventive services and oral health care necessary to achieve optimal oral health. Further, there are systemic barriers to achieving optimal oral health, such as the separation of dental services from other health services, a situation that the current dental systems of care, education and financing not only fail to address but also continue to promote. Understanding these barriers is the first step in leveraging change.

CONSUMER BARRIERS

Oral health is generally considered a personal responsibility. There is certain logic in this assumption; ultimately, it is the individual who cares for his or her mouth, experiences pain and discomfort, and makes decisions regarding professional care. Further, the traditional dental care delivery model puts the burden of attaining services on the individual; once individuals decide to seek care, it is their responsibility to obtain an appointment, transport themselves to the dental office and pay for the services. For these reasons, many of the barriers to oral health exist at the individual, or consumer level.

From the consumer perspective, ***physical barriers*** are those factors that prevent an individual from physically getting to available dental services. These physical barriers include, but are not limited to:

- Geographical distance to dental services
- Health problems that limit mobility
- Lack of public transportation or unreliable transportation
- Uncompensated time off work to seek care
- Competing child or family responsibilities
- Hours of operation of the dental office
- Waiting time to schedule an appointment

- Waiting time the day of the appointment
- Availability of walk-in appointments and/or emergency care.

Any or all of these factors might prevent an individual in need of care from being able to make and keep appointments they need in order to receive the proper care without unreasonable sacrifice of time, job or family commitments. For example, some Californians living in rural communities must drive over 100 miles to get to the nearest dental office.

Financial barriers for the consumer are any cost or payment related issues that prevent an individual from seeking or obtaining care. These include, but are not limited to:

- Lack of or insufficient dental insurance/ dental benefits
- Inability to pay for dental services out-of-pocket
- Lack of payment options or arrangements
- Lost wages, transportation or child care costs for appointments

Given that over 40 percent of Californians have neither public nor private dental insurance, many individuals who have physically accessible services in their community cannot afford to pay for them.

Attitudinal barriers are often the most difficult to overcome. Attitudinal barriers exist when the individual comes into contact with the dental community, but also may prevent a person from seeking care, or even from understanding the need for care. The comfort level of the individual in the care delivery setting, their perceived oral health needs, and even emotional/circumstantial considerations, can all be considered attitudinal barriers. Attitudinal barriers include, but are not limited to:

Discordance with dental providers or dental care as a result of:

- Differences in ethnicity or native language
- Differences in age, gender, or socioeconomic status
- Unfamiliar or unfriendly office environment
- Lack of patients similar to the individual
- Discomfort with office policies or behavior of dental staff and/or dental provider

- Differences in perception of promptness or need to schedule appointments

Perceived oral health needs including:

- Seeking care because of symptoms (vs. episodic care)
- Self-diagnosis of dental conditions
- Self-diagnosis of needed treatment for conditions
- Priority of dental care/oral health in relation to other daily life needs
- Belief that self-care will improve oral health
- Independence to act and make health decisions

Other emotional/circumstantial factors:

- General fear of the dental environment or procedures
- Victim of domestic or sexual abuse who fear disclosure or additional abuse
- Fear consequences of illegal immigration status
- Fear discrimination and/or refusal of services
- Embarrassed by poor living conditions resulting in poor personal hygiene

Finally, this analysis considers ***process barriers***--put simply, these are the barriers preventing an individual from jumping through the hoops of the dental care delivery system. A recent report that California may have to return 590 million dollars in federal Healthy Families money for not enrolling eligible Californians in the program in a timely manner is a clear indicator that these barriers exist (Griffith 2000). While the universe of process barriers is enormous, a few significant obstacles include:

Lack of knowledge of eligibility for services, caused by:

- Poorly publicized and/or poorly written eligibility requirements
- Lack of materials in non-English languages
- Limited literacy skills of the individual
- No telephone to find information on services
- Life circumstances that create variable periods of eligibility

Difficulty navigating the system or paperwork, caused by:

- Lack of materials in non-English languages
- Limited literacy skills
- Lack of referral and case management systems
- Complicated referrals to specialists
- Number of appointments needed
- Preauthorization requirements

Factors associated with mobile lifestyles (migrant or seasonal farmworkers, homeless or transient individuals, etc.) such as:

- Continuity of care issues
- Lack of record portability

PROVIDER BARRIERS

When analyzing access to care and dental service utilization, the dental health professional is perhaps the most prominently neglected factor (Grembowski 1989). Although it is the consumer who ultimately decides whether or not to visit a dentist, the provider has significant control regarding patient load, types of financing accepted, and what care will be offered. Providers and the characteristics of their practices may have a substantial influence on dental use.

In parts of California, the supply of dentists available to provide care for underserved and at-risk communities is strikingly low (Mertz 2000),(Manuel-Barkin, Mertz et al. 2000). There are a number of provider barriers that arise in trying to serve these populations. Just as with consumer barriers, provider barriers can be categorized as physical, financial, attitudinal or process. Separating the provider barriers will help focus policy or program efforts, but it is important to keep in mind that all of these barriers must be addressed simultaneously in order to truly provide access to optimal oral health in California's communities. The challenge is how to address these barriers and who will take responsibility for making changes.

The structure of a dental practice often creates ***physical barriers*** to providing care to certain populations. These barriers include, but are not limited to:

- Schedules that exclude patients only able to come in during "off hours"
- Large demand for care so that schedules are booked months in advance
- Stationary practices that cannot reach remote populations (vs. mobile operatories)
- Location in older buildings that are not easily accessible to people with mobility problems

Financial barriers are perhaps the most frequently cited reason by providers to explain why they are unable to provide care to low-income or Medicaid populations (Cohen 1995; Office of Inspector General 1996; Nainar 1997; GAO 2000). Physicians gain financial flexibility through their affiliations with hospitals and other institutions that cover the bulk of capital and equipment costs, and through group practices that benefit from "economies of scale" care delivery. Most dental practices function as small independent businesses with high overhead costs and little opportunity for cost savings. They are therefore more vulnerable to the financial burdens of scheduling, delivering, and billing for care.

Equipment, inventory and staff costs are coupled with costs associated with training and continuing education, malpractice insurance, property costs, and repayment of dental education loans. All of these costs must be covered by the services that a dental office provides. Therefore, low payments, unreimbursed care, low capitated payments (in managed care plans) and the mix of funding and income options for a practice create barriers that may prohibit a dentist from providing care at a lower cost to underserved populations.

Further, the administrative burden associated with public insurance programs, preauthorization requirements, plan negotiations, and regulations are cited as reasons that few dentists will accept patients with this coverage (Damiano, Brown et al. 1990; Office of Inspector General 1996). The additional costs of staff turnover, outreach and marketing, and continuous quality assurance systems may also create barriers to delivering this type of care (Lam 1999).

Rarely acknowledged or discussed are the ***attitudinal barriers*** providers have toward delivering care to underserved communities. Attitudinal barriers include factors in a provider's personal and professional background, training and culture that influence how they view different segments of society. Attitudinal barriers include, but are not limited to:

- Discordance with individuals or certain populations as a result of:
  - Differences in ethnicity or native language
  - Differences in age, gender, or socioeconomic status
  - Differences in health beliefs or practices
- Personal values, assumptions, and stereotypes
- Lack of connection with the community (e.g., IHS dentists who are "placed" in a community rather than chosen by a community)
- Assumptions based on the culture of being a "health professional"
- Locus of control in decision-making and authority

The attitude toward and familiarity with underserved individuals greatly impact whether a dental office chooses to treat these individuals (Lam 1999). Most dentists are not from disadvantaged backgrounds, and therefore may not be empathetic to the needs and circumstances of certain patients. Financial constraints within the university system have lead to dental schools cutting back on community service opportunities that help sensitize students to different communities.

Another attitudinal barrier for providers is the "culture" of dentistry. The level of decision-making and authority with private patients may not be available when treating individuals with public insurance benefits due to bureaucratic regulations and paperwork. Beyond the financial barrier these administrative burdens may create, dental professionals feel these processes infringe on their professional autonomy. The separation of dental education and care delivery from all other medical education and care delivery distances the dental professional from other health professionals and social services, inhibiting efforts to coordinate and integrate care for underserved populations.

There are two types of ***process barriers*** found at the provider level that must be addressed. They are:

- The knowledge base, technology and evidence base for practice
- The ethical and moral issues in providing care

Unlike medicine, dentistry lacks many of the clinical guidelines and evidence for practice that influence reimbursement and benefit policies. There are not yet national diagnostic codes from which to compare procedural outcomes, clinical guidelines or protocols. Reimbursement is based on procedures with limited scientific evidence base for the current norms of care. All of these issues create barriers to providing efficient, accessible, high quality care.

The profession of dentistry has fallen short in educating dental professionals about public health principles and instilling a sense of social responsibility (Entwistle 1992). This creates a lack of understanding of dental professionals' role in the broader context of a community's health, and leads to inequities in the provision of oral health care. Perhaps more than in medicine, dentists are sometimes forced to compromise treatment based on the patient's ability to pay and insurance coverage (Grembowski 1989). Expanding provider awareness, education, and commitment to treating underserved populations is a major challenge in trying to achieve a comprehensive oral health care system.

System Barriers

There are barriers that exist in the dental care system that both mediate and exacerbate consumer and provider barriers, and ultimately must be addressed at the systemic level. These barriers are created by and affect the education system and workforce, the government, the insurance industry, and the community as a whole. Barriers include, but are not limited to:

Education and workforce development issues including:

- The distribution and composition of providers
  - Urgent care vs. comprehensive care
  - General vs. specialty practice; availability of specialists
  - Manpower competition and shortages
  - Underutilization of allied dental professionals
- The dental education system
  - Proximity of professional schools (e.g., dental, dental hygiene, dental assisting, dental technicians) to communities of need
  - Information technology and links to researchers

Governmental issues including:

- Federal and state regulations
  - Professional licensure and state practice acts
  - OSHA, hazardous waste, American's with Disabilities Act
- Public funding for systems of care
  - Medicaid and Healthy Families
  - Encounter systems
  - Federally Qualified Health Centers, Indian Health Service, NHSC
  - Geographic location—shortage areas and practice locations
  - Dental Education and dental school clinic care

Private insurance industry issues including:

- Reimbursement mechanisms
- Employer-based plans
- Managed care issues
- Capitation vs. Fee-For-Service
- Patient share of costs

Other external mediating factors including:

- Community development and state of the economy
- Political will
- Community education and awareness

All of these factors create and influence the interaction between providers and consumers. How one behaves as a provider or consumer—the incentives or disincentives which influence one's decisions—are also greatly determined within parameters set at the systems level. Therefore, beyond individual barriers, it is paramount that systemic barriers be removed to increase access to optimal oral health.

Categorizing barriers to care provides the groundwork for further analysis of access to care. In practice, barriers exist simultaneously and interactively between consumers, providers and systems. The barriers to oral health experienced in California vary by region, and within each region, by population and socioeconomic status. Multiple behavioral models have been developed to explain and/or predict the process of obtaining dental care. These models take into consideration the presence and interaction of the barriers described earlier (Grembowski 1989; Andersen 1995).

CALIFORNIA POPULATIONS: DISPARITIES IN HEALTH AND ACCESS

Barriers to dental care exist on a multitude of levels and affect most everyone at some point in their lives. However, certain population groups encounter a disproportionate share of barriers. Individuals whose circumstances place them in a number of "underserved" categories experience a layering effect, which compounds the access problem and can worsen their health status (Warren 1999).

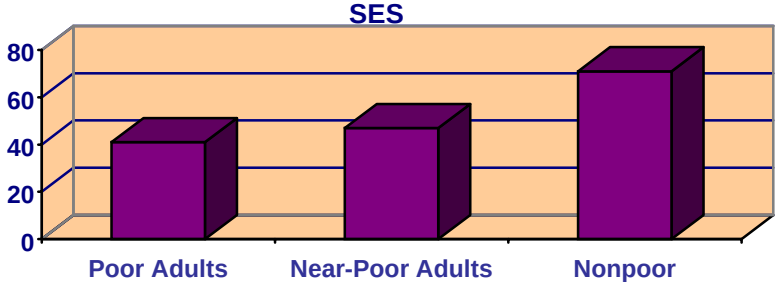
In California, the groups most likely to have access problems are:

- Low-income and indigent persons
- Rural residents
- Racial and ethnic minorities
- Non-English speaking residents
- Children and the elderly
- Persons with developmental disabilities or major medical problems.

LOW-INCOME AND INDIGENT PERSONS

Socioeconomic Status (SES) tends to be the most significant indicator for utilization of services and poor health outcomes, regardless of race and gender (USDHHS 2000). Data from the 1989 National Health Interview Survey (NHIS) indicate that 47 percent of near-poor adults and 41 percent of poor adults had a dental examination in 1989, compared with 71 percent of nonpoor adults, ages 18 to 64 (Hazelkorn and Baum 1990).

Figure 3.3
Percent of 18-64 Year Old Adults with a Dental Examination in 1989, by SES



Data on children ages five to 17 years indicate similar gaps in the likelihood of obtaining dental care by poverty status. The National Institute of Dental and Crainofacial Research reports that 80 percent of the tooth decay occurs in only 25 percent of U.S. children and adolescents; low income is a significant risk factor for childhood caries. Nationally, the greatest unmet treatment needs of children are seen in children from families with low incomes—including those children who are eligible for dental coverage under the Medicaid program (Edelstein 1998).

In California children have twice as much untreated decay as their national counterparts, a problem the Dental Health Foundation calls a "neglected epidemic" (Dental Health Foundation 2000). The problem is even more pronounced for children in the state who are very poor: only 16.8% of children covered by Medicaid are reported to have received preventive dental services in 1993 (Aved 1996).

While not the only factor in determining oral health, health insurance coverage is an important indicator of access to care. The National Survey of America's Families in 1997 showed that 5.4% of children and 12.5 % of adults with private insurance had unmet dental need, compared to 7.8% or children and 16.0% of adults with public insurance and 14.7% of children and 17.6% of adults without insurance. The rates of unmet need are slightly higher in California than the national averages, as are the rates of uninsured (Haley and Zuckerman 2000).

California's uninsured may possibly have the greatest barriers to accessing care due to an inability to pay for services. Studies have shown that dental insurance coverage is a primary predictor for accessing oral health services (Grembowski 1989). The Surgeon General's Report noted that 70.4 percent of individuals with private dental insurance reported seeing a dentist in the past year, compared to 50.8 percent of those without dental insurance (USDHHS 2000). Some uninsured Californians may be able to pay for

services out-of-pocket, but in general the uninsured are lower income individuals either unemployed , employed part-time, or without employer-based insurance.

Those with dental insurance are most likely to access needed services (Grembowski 1985). However, the type of insurance one has also affects access. For those with private insurance, attitudinal and structural barriers may still exist. For those with public insurance, an additional structural barrier of finding providers who will participate in public financing programs exists as well.

RURAL COMMUNITIES

Less than half (47.3%) of rural children under age five in California have ever visited a dentist (Pollick and al 1999). Preventive dental education and services, including teeth cleaning, application of dental sealants to prevent tooth decay, and self-care oral hygiene instructions, are still inadequate in many urban communities and schools, but are often more unevenly available in rural areas (Aved 1996).

California has an overall dentist-to-population ratio that is higher than the national average. Although overall supply may not be a problem, the distribution of dentists is. Rural communities suffer from workforce shortages and poor distribution of providers. Overall, rural communities have fewer dentists than urban communities (Mertz 2000). The shortage of dentists in rural communities creates a host of problems for the population overall.

This problem is even more significant for the rural poor. While Medicaid beneficiaries have difficulty finding participating private dentists, the evidence suggests that the problem is even greater in rural areas (Manuel-Barkin, Mertz et al. 2000). Even if such areas are fortunate enough to have a safety net clinic, they still may not be able to keep up with the demand for services.

RACIAL AND ETHNIC MINORITIES

Racial and ethnic groups in the United States continue to experience major disparities in health status. Compared to the majority non-Latino white population, racial and ethnic minorities bear a disproportionate burden of mortality and morbidity across a wide range of health conditions, including oral health (Brown 2000). Low-income and minority Americans experience greater levels of oral disease and are less able to obtain dental care, less likely to be covered by dental insurance and less likely to seek care than higher-income and non-minority Americans (Manski 1998). Although many factors affect health status, the lack of health insurance and other barriers to obtaining health services diminish racial and ethnic minorities' utilization of services that could reduce disease and contribute to improved health status (Brown 2000).

In California, a higher prevalence of dental caries is generally found among minority children, including African-Americans, Hispanics, and Native Americans from poor and low-income families. Compared to white children (Dental Health Foundation 1997). The rate of permanent tooth extraction from untreated disease in these same groups is also higher. The risk of baby bottle tooth decay (BBTD), now referred to as early childhood cares (ECC), and its concomitant risk of lifetime dental disease is particularly high among Native Americans and among children in many Head Start programs (Drum 1998).

Nationally, among adults, the percentage of individuals having teeth with untreated decay is greater among African-Americans than whites of all ages. There is also a higher prevalence and greater severity of periodontal disease among minority populations compared with whites. More than twice as many hours are missed annually from work due to dental visits/problems by African-Americans as compared to whites (Drum 1998).

Among the elderly, African-Americans suffer disproportionately from tooth loss and endentulism compared with whites. In addition there is nearly a 25% difference between

African-Americans and whites in relative 5-year survival rates for oral pharyngeal cancers. This difference is attributed in large part to delayed detection and treatment (Drum 1998).

The 1993-94 California Oral Health Needs Assessment of Children determined that nearly half of California's Asian and African-American high school students and three-quarters of Latino students need dental care (Dental Health Foundation 2000). According to the 1986 National Health Interview Survey, African Americans and Hispanics were less apt to have private dental insurance coverage, to be knowledgeable about the purpose of fluoride, to have been to a dentist in the past year, and when they did go, were more likely to have gone in response to symptoms rather than for preventive reasons, compared to whites. Mexican-Americans were the least likely to have been to a dentist, regardless of income or education (Aday and Forthofer 1992).

Non-English Speaking Residents

Throughout the nation the number of families who have limited communication abilities in the English language is continuing to increase. Almost three-quarters of school-age children with limited English language proficiency speak Spanish at home (Waldman 1998). California has a disproportionate number of non-English speaking residents, creating significant challenges for both the non-English speaking individuals and dental care providers. Few studies specifically examine language barriers to receiving dental care, but language barriers seem to play a significant role in access to dental care and following home care prescriptions with a large number of California's residents (Flores and Vega 1998; Khan and Williams 1999).

Children and the Elderly

Extensive literature exists on the barriers faced by underserved and at-risk children (Office of Inspector General 1996; Pollick and al 1999; Dental Health Foundation 2000; USDHHS 2000). Good oral health care is essential for children in particular, as it lays

the foundation for a lifetime of oral health and prevention of oral disease. While it is important to focus on the special needs of children, it is also important to recognize that children are affected by their membership in a population or cohort. Not all children experience barriers to care, but children are often more vulnerable to the same barriers faced by adults.

Like children, many older adults also have special needs. Factors such as finances or overall heath status create barriers to dental care that exacerbate these special needs. Many older Californians have chronic or debilitating diseases, or may take a variety of medications. Over 400 pharmaceutical agents contribute to dry mouth that can result in oral infections (Slavkin and Baum 2000). Medicare provides only limited dental benefits for diagnosis of specific conditions, thereby compounding access issues for elderly California residents.

Persons with Developmental Disabilities

Most U.S. studies report access problems for persons with developmental disabilities related to: 1) dentists' unwillingness to treat disabled persons because of inadequate training, time involvement, rising malpractice liability if they use sedation, etc., 2) lack of general dentists and dental specialists who accept Medicaid reimbursement, 3) behavioral problems, 4) families' transportation problems, and 5) competing priorities for care (Shuman and Bebeau 1994).

Since most dentists practice in private dental settings, they are not connected to general or specialty medical expertise and support, nor are they very connected with community organizations and services for people with disabilities. In a 1989 survey of five Regional Centers in the Los Angeles area, 51 percent of the families indicated not having any problems related to dental care, while those with problems noted the ones previously described (Finger and Jedrychowski 1989). Parents and guardians who reported the most problems were those with less education and those who were told their child needed to be hospitalized for care.

RAMIFICATIONS FOR CALIFORNIA'S COMMUNITIES AND ORAL HEALTH DELIVERY SYSTEM

As California becomes more diverse, we continue to face new and greater challenges in treating oral diseases and achieving universal oral health. Failure to address the disparities in oral health will impact the entire State of California. One analysis suggests that while there may be a low social impact individually from dental visits and oral conditions, at the societal level, such problems and treatments among disadvantaged groups have a greater impact (Gift, Reisine et al. 1992). The potential harm to society and its future workforce is tremendous as compared to the minimal investment required to prevent such harm.

Providing adequate preventive care reduces overall dental and medical expenditures for society. Emergency rooms and operating room staffs regularly see large numbers of children presenting with unrelenting toothaches and caries (Hazelkorn and Baum 1990). The cost to treat early childhood caries is estimated at $1,000-$2,000 per child. If hospitalization is necessary, that cost is doubled (National Maternal and Child Oral Health Resource Center 1999). Investing in preventive services and oral health education reduces not only pain and suffering but also adjunctive or resultant medical treatments that might also occur.

PARTNERS IN THE PROVISION OF ORAL HEALTH SERVICES

The World Health Organization defines health systems as "compromising all the organizations, institutions, and resources that are devoted to producing health actions" (WHO 2000). Oral health, as with all health issues, crosses many boundaries, and only a multi-pronged approach will even begin the process of expanding available services. Therefore, many different groups have a responsible role to play.

Both the **federal and state governments** share some of the responsible for the general and oral health of residents at regional, state, and local levels. Currently, the public

sector contributes piecemeal to the dental safety net, providing a patchwork of funding for dental services, dental workforce and infrastructure. In 1994, the Centers for Disease Control and Prevention (CDC) reported that, "substantially more oral health related assessment, policy development, and assurance activities occurred in states with a direct commitment of human resources." For example, there were more dental and oral health activities in states where there was a full-time dental director in the state health agency than in states where there was no director or no oral health program at all (Warren 1999). At present, California does not have a dental director in its state health agency (they are currently recruiting for one).

Dental and dental hygiene associations have a responsibility to address the inequities in dental care delivery. Local needs tend to be best handled at the local level, but broad policy and advocacy can and must be driven at the state and national level. Professional associations function at all of these levels and could integrate their efforts. The National Dental Association (NDA), which represents more than 15,000 dentists, dental hygienists, dental assistants, and dental students, many of whom are African-American, advocates increased participation in public health activities. Since its inception, the NDA has supported public health programs for improving the health of the underserved. Similarly, the Hispanic Dental Association (HDA), a member organization that represents primarily Hispanic/Latino dental professionals and students, is committed to addressing existing disparities in oral health and in access to care in Latino communities (Warren 1999). In the process of doing structured interviews with safety net providers, our project discovered that these smaller ethnic dental societies have been at the forefront of supporting the implementation and sustainability of programs and projects addressing the needs of underserved in their communities. The California Dental Association (CDA) represents one of the more progressive state associations, and has always been involved in outreach activities. Both the CDA and the California Society of Pediatric Dentists (CSPD) have recently organized committees to study access to care in California.

Despite these efforts, organized dentistry faces constant challenges in trying to address the burgeoning disparities in oral health. Dental associations play a pivotal role in garnering the support of the larger dental health community in advancing the commitment to remove barriers to care.

The **dental education system** must play a significant role in reducing oral health disparities. The dental education system determines not only who is educated to provide oral health services but also the type of education they receive. Many attitudes of dental students are shaped long before they reach dental school, but their perceptions of the role the dentist plays in the community is shaped significantly during dental education. The foundation for the quality of care and type of care that will be delivered to the communities is also determined in dental school. The dental education system can collaborate with the community, to bring services of students into the community, and recognize the needs of these communities through first-hand interactions. Studies show that minority health professionals, both physicians and dentists, are more likely than non-minority health professionals to serve communities of color (Komaromy, Grumbach et al. 1996; Mertz and Grumbach Forthcoming). It is the responsibility of the dental education system to recognize these demographic patterns, and structure admission policies appropriately.

Non-profit organizations and foundations are also players in expanding and sustaining the dental safety net, and in creating community-based solutions and partnerships. Many non-profit organizations and foundations provide funding for or operate programs that the government either cannot or will not support. In California, many churches, community groups and concerned citizens have acted to create programs to remove barriers to care. These programs are often the result of collaborations between various community groups and providers.

Communities in need can also be important partners in reducing oral health disparities in California. Consumer awareness and community organization is an essential component of the social contract that is necessary for improving the oral health of all Californians.

SYSTEMS FOR ORAL HEALTH

Clearly, issues of improving oral health for underserved populations are complex and highly interdependent. There are a variety of agencies and groups capable of targeting those populations that are particularly impacted by barriers to effective dental care and optimal oral health. By approaching this problem systemically, from an evidence-based model, and by using an integrated approach, policy makers, health professionals and professional organizations will have a greater likelihood of making a contribution to improving oral health.

A systematic approach requires a framework from which to start. This report draws from Grembowski's model of use of dental care services. This model is composed of two components; the process of accessing care, and the episode of care (Grembowski 1989). The decision and process of seeking care is based on an individual's expected rewards and costs of obtaining care. The probability of beginning an episode of care results from the balancing of these rewards and costs, which are influenced by what Grembowski terms *structure*, *history*, *cognition* and *expectations*. Table 3.4 outlines these four influencing factors which categorize many of the barriers discussed in this section.

Table 3.4: Probability of Seeking Dental Care – Influencing Factors

Structure	History	Cognitive	Expectations
Social Class	Usual Source of Care	Dental Knowledge	Expected Rewards
Sociodemographic Characteristics	Preventive Behavior	Dental Satisfaction	Expected Costs
Insurance	Quality of Care	Salience of Dental Care	
Environment	Oral Health	Perceived Norms	

Source: (Grembowski 1989)

Once an episode of care is initiated, the variable factor becomes the dentist-patient interaction. Balancing rewards and costs of the interaction, and the balance of power between the provider and patient shapes this stage of the process. The process of deciding to continue or terminate an episode of care is shown in Figure 3.5.

Figure 3.5: Care Seeking Decision Process

		Provider Rewards>Costs	
		Yes	No
Patient Rewards > Costs	Yes	Continue	Termination by Provider
	No	Termination by Patient	Mutual Termination

Source: (Grembowski 1989)

The power balance is particularly relevant when discussing access for underserved populations. Providers are necessary for care, but underserved populations are not necessary for the provider. This creates a structural power imbalance shaped by patient, dentist, and environmental characteristics.

Grembowski's theoretical model is complex and contains extensive discussions of all the mediating factors to obtaining and finishing an episode of care. For this analysis, three basic questions are relevant:

1) Are adequate education and prevention strategies in place to reduce the level of disease in these populations, and subsequently their demand for services?
2) What processes can improve the ability of underserved populations to obtain care?
3) What improvements can be made to ensure that the episode of care is efficient, effective, high quality and completed?

Many efforts have been made locally and at the state level to address the oral health of California's residents. These efforts encompass traditional service delivery, as well as the "dental safety net"; the infrastructure currently in place to meet the needs of traditionally underserved communities. Beyond these programs, there are many steps both for prevention and treatment, which could be taken to improve access to optimal oral health. These steps are often blocked because of financial, political, or professional limitations. This report argues that California is in a position to address many of its oral health needs, within current systems, by focusing on reducing the barriers between consumers and providers of dental care, primarily through reinforcement of the current dental safety net infrastructure. The tools to do this job are being developed, and we suggest they are the following:

1. Educating, motivating, and enabling the oral health consumer to be a partner in their health and the health of their communities
2. Using an interdisciplinary and multidisciplinary approach to the delivery of preventive oral health services and restorative treatment
3. Increasing professional accountability for health and health outcomes by fostering dental leadership and community partnerships
4. Implementing evidence-based models of care that include risk assessment, anticipatory guidance, primary prevention and disease reduction
5. Evaluation of both programmatic goals and health outcomes of any efforts to expand access and improve service delivery
6. Alignment of funding sources with health outcome goals
7. Educating and motivating students and providers on oral health disparities and contemporary evidence-based interventions
8. Educating students and providers to be linguistically, culturally and socially aware and sensitive

Truly improving the oral health status of California involves more than just making practitioners available, financing care or improving public health measures. To bring about significant change in the oral health status will require conscious effort to target integrated strategies. This report draws from the basic understanding of how and why people access and use services and the knowledge of which barriers and incentives exist for increasing access to care. This framework is then used to develop effective and innovative models for the actual episodes of care, and the additional pathways and leverage points most appropriate to promote a "*good*" and "*fair*" system of oral health service delivery.

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Chapter 4
Dental Safety Net in California

DENTAL SAFETY NET IN CALIFORNIA

The dental safety net comprises a variety of programs that expand services to populations who do not have access to the traditional private practice dental care system. Safety net programs do this in a variety of ways, but all of them mediate the patient / provider relationship by addressing specific barriers at the consumer (demand), provider (supply) and system (institutional) level. These barriers have been summarized in Chapter 3 and outlined in detail by Isman and Isman (1997). The programs that comprise the safety net, while increasing access for the individuals served, cannot address the entire oral health needs of all underserved populations. Dental clinics often confront funding limitations in the face overwhelming consumer demand.

To further the understanding of the issues and some solutions addressed by safety net programs, we interviewed over 100 programs (over 50% from California) at the community, state and federal level. The interviews were structured 1) to determine which types of programs address which barriers and which populations, 2) to find successful models and practices, and 3) to uncover what barriers to care are not being addressed. A copy of the interview form is included as **Appendix 2**.

We classified the dental safety net programs into 13 categories, shown in Figure 4.1, based on the program goal and level of administration.

Figure 4.1 Dental Safety Net Categories

1. Community Dental Clinics
2. Population Targeted Programs
3. Mobile Dental Programs
4. School-Based / Linked Dental Programs
5. Community Education and Outreach
6. Case Management and/ Referral Programs
7. Teledentistry
8. Workforce Development / Dental Education
9. State Financing / Funding
10. Private Funding / Grant Programs
11. Research and Information Collaborations and Initiatives
12. Community Water Fluoridation
13. Interdisciplinary and Multidisciplinary Efforts

While some programs overlap categories (e.g., a school-based dental program may also include a mobile dental component), there are qualities of each category that warrant separate analysis by type of barrier, target population, fit of its mission with the needs of clients served, sustainability, funding, staffing needs, and outcomes. An assessment of practices across categories is also provided. This chapter is our assessment of the current array of programs being used to improve oral health for underserved populations by 1) population served, 2) primary financing and administration, 3) current strengths, 4) challenges and sustainability, and 5) future goals/room for improvement.

SAFETY NET PROGRAMS ADDRESSING VARIOUS BARRIERS

While each safety net program addresses different barriers to care, Table 4.2 shows that interventions predominately are focused on issues related to consumer barriers.

Table 4.2
Barriers to Dental Care Addressed by Program Type

	Consumer Side	Provider Side	Systemic
Dental Clinics (Stationary)	x	x	
Population Targeted Programs	x		
Mobile Dental Programs (Dental Vans, Portable Equipment)	x		
School-Based / Linked Dental Program (Screening, Sealant, Health Clinic)	x		
Community Education and Outreach	x		
Case Management and Referral Programs	x	x	
Teledentistry	x	x	
Workforce Development/Dental Education		x	
State Financing/ Funding	x	x	x
Private Funding/Grant Programs	x	x	x
Research and Information Collaborations and Initiatives	x	x	x
Community Water Fluoridation			x
Interdisciplinary and Multidisciplinary Efforts	x	x	x

COMMUNITY DENTAL CLINICS

California's "community clinics" constitute a large and essential component of the state's primary care safety net system for traditionally underserved and vulnerable populations such as low income and uninsured persons. The term "community clinic" is broadly descriptive, and is applied to a relatively heterogeneous array of primary care service delivery settings and sponsorship arrangements. As used in this report, "community clinics" include: health department or other publicly operated primary care clinics, "free clinics", federally qualified health centers (FQHCs) and FQHC look-alikes, clinics operated by or for federally recognized Indian Tribes, urban Indian clinics, and a variety of other community or population based primary care service delivery organizations, including a small number of private non-profit community dental clinics. All of the community clinic types operated by private non-profit organizations must be officially licensed by the State of California, and are traditionally referred to as "licensed community clinics". Publicly operated community clinics, as well as those located on the lands of federally recognized Tribes, are exempt from such licensure.

Nationally, it is estimated that 60 percent of community clinics have some level of dental service delivery capacity. In California approximately 204, or 30 percent, of the licensed community clinics offer some level of oral health care (Manuel-Barkin, Mertz et al. 2000). Community clinics can be local or county health department clinics, federally qualified health centers (FQHCs) or FQHC look-alikes, or independent non-profit dental clinics.

POPULATION SERVED

The chartering documents of most community clinics commit them to identifying and serving underserved and vulnerable population groups. Typically, that commitment includes a policy of non-discrimination based on ability to pay, although the use of a sliding fee scale arrangement based on income and family size may be authorized. Some community clinics employ supplemental eligibility requirements such as residence within a particular geographic area or inclusion within a particular population group (e.g., a federally recognized tribe, migrant and seasonal farm workers or homeless). As noted

above, “dental only” community clinics are relatively few in number. Overwhelmingly, community clinic oral health care is provided within a service delivery system that also offers medical and other primary care services.

Primary Financing and Administration

Most community clinics accept reimbursement from all sources, including the Medi-Cal and Healthy Families programs. Although these clinics are often one of the few potential source of primary dental care within a particular area or for a particular population, the dental service delivery capacity community clinics appears to bear little relationship to corresponding levels of need/demand for such services. The high cost of delivering necessary care, the non-cost related reimbursement provided by the Health Families Program and other major 3rd party payers and high levels of the dental uninsured are likely important factors in the creation and maintenance of this apparent disequilibrium.

To remain financially viable, community clinics have to seek a variety of funding sources, including public and private grants, state and federal reimbursement, private insurance reimbursement and whatever sliding scale/personal payments they can collect. Since the administrative burden, complexity and costs associated with a community clinic are high, continual fundraising is a necessity. The time of expensive dental staff typically must be allocated to critical service delivery rather extensive fundraising efforts.

Current Strengths

The mission of most community health centers and other community clinics is to provide free or low-cost primary care to low-income and uninsured people (Plaska and Vieth 1995). A clear mission is important for community visibility. An example of a clinic’s mission is illustrated in the sidebar. The main consumer barriers they seek to overcome are costs of

Dientes! Community Dental Clinic in Santa Cruz California is a private non-profit clinic. It is the largest provider of dental services to Medi-Cal recipients and the only dental office in the county that provides dental care on a sliding fee scale.

Mission Statement:

“To improve the oral health of the people of Santa Cruz County and neighboring communities through education, clinical care, and prevention of dental disease, with special emphasis on the provision of services to the underserved.”

care and payment issues. Dental professionals who seek employment or volunteer in these clinics are more likely to be culturally sensitive to the population served, although these characteristics may not necessarily be true for individuals who are placed in clinics to pay off educational scholarships or loans. They also may or may not be knowledgeable about population-based health approaches. Private practice providers may be more willing to volunteer or work part-time in a clinic setting rather than in their private practices because the clinic structure mediates much of their financial risk in seeing low-income patients. Some dentists qualify for loan or scholarship repayment for their service in these settings, which somewhat compensates for a lower income.

A significant strength of community dental clinics, particularly when they are integrated into a larger community health center, is the convenience and trust they build within the low-income communities they serve. In an integrated clinic system referrals can easily be made to needed dental services or medical services. Patients can get care for all their health needs at one location where they can build relationships with providers. This may lead to more continuity and integration of care.

Challenges and Sustainability

Without a mixture of federal, state, county and private grants and reimbursement/payment, most clinics would not be sustainable. Other means of sustainability are volunteerism, student rotations, and donations of equipment or supplies. Without the continuing advocacy and support of health administrators and advocacy/demand for services by patients, many community dental clinics are in constant jeopardy of closure or funding cutbacks.

A recent study of the technical efficiency of these centers in providing medical services found that 68 percent of the CHCs surveyed were not performing at optimal technical efficiency (Akinci 1999). The study found that clinics with higher numbers of uninsured patients were less efficient. Although the study was focused on medical clinics, many of the findings may apply to dental clinics, particularly if they are co-located with medical clinics. The study also found a positive association between capitated managed care

arrangements and efficiency. Currently, there are very few managed care models in dentistry in which to test this hypothesis.

Future Goals/Room for Improvement

Clearly the mission of community clinics to see the neediest populations conflicts with their ability to provide efficient and cost-effective services. While it makes sense to capitalize on an existing system which is well-poised to provide services to the very people who need it most and can least afford it, continued study of the most efficient and effective models for delivering care is needed.

Community clinics are better poised to address consumer barriers to care than are private practices. This is particularly true when the dental clinic is part of a general health center and can refer patients for various support services. Even though clinics and records are co-located, however, services may not be coordinated. Clinics with an Outreach or Benefits Coordinator may be able to address process barriers that individuals encounter, such as reviewing eligibility requirements, facilitating completion and submission of paperwork, navigating the care system, and coordinating care. If this role were expanded to include community outreach and education, additional knowledge and attitudinal barriers would be overcome. The following case study exemplifies one such approach.

Case Study: San Joaquin Health Center, Valley Health Team

The Valley Health Team, Inc., dba San Joaquin Health Center, provides medical and dental care to the population of rural West Fresno, primarily migrant and year-round farmworkers and their families. Perceived dental care needs are low, as are financial resources and the time and transportation needed to seek dental care. Language and cultural barriers prevent them from navigating the health financing and care delivery system and learning more about oral health practices.

Valley Health Team addresses the needs of its community by providing a continuum of services through their dental clinic and through non-clinical support services. The clinic has three types of "support teams." The first is an "Outreach Team," consisting of a pediatric nurse practitioner and two medical assistants. This team goes into the community and encourages individuals to seek care in the clinic.

The Patient Education Team consists of a nurse practitioner, a physician assistant, medical assistants and trained administration staff who work with patients in the clinic as well as individuals in the community to provide information on the importance of good oral hygiene and regular dental care. The Team provides learning materials in all of the languages spoken in the West Fresno community.

The third team is the "Retention Team." Staff include a director of marketing and individuals who work in the clinic, making follow-up calls for both medical and dental services, to ensure that individuals can and do make their appointments. The staff speaks all the languages of the area including Spanish, Punjabi and Arabic. Training is done in house. They also provide city transit transportation tokens for individuals. The Valley Health Team understands that, for at-risk populations, it is not enough to provide dental services. Support services are necessary to bring individuals to the clinic, and retain them as patients once they have arrived.

Providing quality care to underserved populations requires that practitioners become aware of community issues and resources, and their patients needs and health beliefs. One way to reduce provider and systems barriers to care is scheduling students for community rotations or experiences, increasing their awareness of the context in which people live. Community clinics provide a rich learning environment for dental students, both in terms of the type and severity of oral conditions and diversity of patients. (See the section on Workforce Development/Dental Education for more discussion of service learning programs.) This type of extramural outreach effort for all dental health professional students in California is underutilized.

Individual community clinics are not well positioned to address systemic barriers on their own. Offices of Primary Care and Primary Care Associations can assist in leveraging resources or advocating for policy changes. In California, the recently funded Oral Health Services Access Initiative, is seeking to initiate a strategic planning and development process directed towards achieving a significant improvement in the oral health status of the underserved and vulnerable populations who utilize California's community based primary care safety net system. The Initiative will focus on identification and achievement of the systemic and environmental changes necessary to substantially increase the community clinic system's capacity to deliver necessary oral health care, and to ensure that the increased capacity is public health responsible, marketplace sustainable and culturally competent.

POPULATION TARGETED PROGRAMS

Some communities may find that a certain population group within the community has a particularly high level of oral health needs. In these cases, targeted programs have been developed to increase access for one particular group. A needs assessment/analysis of barriers is performed and specific interventions and incentives arranged. Some of these programs occur within dental clinics, while others involve dental education or service programs within a medical clinic. These programs can be an important connection between community-based services and underserved populations, and they can limit their focus to addressing specific barriers.

POPULATION SERVED

The populations served are varied, but usually are groups with particular oral health needs who have the least access to care. This could be a particular racial/ethnic group such as Native Americans, or a group defined by geography or employment such as migrant farmworkers or homeless persons. Some programs target particular age groups, such as children 0-3 or elderly nursing home residents.

PRIMARY FINANCING AND ADMINISTRATION

There is no specific model for financing programs of this type although many are developed with grant monies. Programs usually are based in a service delivery setting or linked to one so that outreach and education are linked to oral health services. The programs we reviewed in this category were usually very small (single location, small target population) and administration was dependent on individuals who started the project. Dental care was usually covered by Medicaid or other public financing mechanisms.

CURRENT STRENGTHS

In theory, a population-targeted program within a clinic setting (or any other community setting) could do the outreach, education and referral needed to link hard-to-reach populations to services. These programs also may help overcome provider-related barriers as they serve as a focused forum for discussion, education and service that, in

order to be successful, must have buy-in from all parties. The Toiyabe Indian Health Project in Inyo County, California, targeted additional funds for service to their population by using a Healthy Families grant to hire a new dentist. They are the only clinic in the area that has a Healthy Families/Medicaid dentist, so they perform outreach and see all Healthy Families/Medicaid beneficiaries.

Case Study: The Start Smiling Program

The **Start Smiling** program at the Silver Avenue Clinic in San Francisco focuses on community education and awareness for mothers of infants (age 0-3) in an environment where services are already available. The patients are members of the San Francisco Health Plan, the local Medicaid managed care provider. The infant population has not traditionally received dental services, and many parents do not know to bring their children in at this age. However, new research shows that earlier interventions can help prevent early childhood caries (ECC), or rampant dental caries in young children.

This program initiated activities to inform the community of the services available, and provided incentives for bring children in to the clinic for an exam. The initial outreach letter was sent to over 600 plan members with young children. The result was that 51 children came in for an exam, of which 19 needed treatment. Although the response rate was low with a simple informational mailing, those that did come in were likely to need care. They are now revising their outreach efforts to include pediatricians and other physicians to refer children into their clinic.

The program has also initiated steps to work with pediatricians to refer young children to the clinic, and in the future steps will be taken to further integrate medical and dental care for these young children.

Challenges and Sustainability

The common factor in all of these programs is a leader who is committed to the project. There must be a person who can both advocate for funding and build the partnerships necessary to implement the project. The initial challenges are to obtain funding and build partnerships between the targeted communities and delivery of services. Additional challenges occur when trying to move from one-time funding to integration of the program into a sustainable model. Recognizing dental practitioners who volunteer to participate in programs and linking their efforts to improved oral health in the target population is an important incentive for their continued participation.

FUTURE GOALS/ROOM FOR IMPROVEMENT

When dental services are in high demand, funds usually are allocated to increasing capacity to deliver care, not to scientific study of methods, outcomes, and effectiveness. This type of project would benefit from a new model for assessing and documenting programmatic interventions and progress toward oral health goals for the target population. Such tools could assist these and other community organizations in targeting resources towards the neediest populations. In today's age of information technology, a coordinated database designed to make measuring outcomes simpler can be instituted and maintained if resources are made available for this purpose.

MOBILE DENTAL PROGRAMS

While the composition of mobile dental services vary from program to program, the purpose is the same; create access to oral health care by bringing services to needy populations. Mobile dental programs include dental vans and trailers that are self-contained dental clinics on wheels (see photo below), trailers that house operatories and can be transported and parked for extended periods, and portable dental equipment that has the flexibility to be set up in many different settings. Mobile dental programs may provide only preventive services such as fluorides and sealants, often in schools, or may provide restorative treatment or prosthodontic services (e.g., denture relines) in nursing homes.

Photo provided by PRASAD Children's Dental Program, San Jose, CA

Many dental vans contain sophisticated equipment, including laboratory facilities, radiographic equipment, digital cameras, and computerized tracking systems. Some programs in Alaska transport all needed equipment and supplies to distant towns by snowmobile or small airplanes. The diversity of options for using mobile services provides enormous flexibility but also means that the pros and cons of each option must be weighed carefully before committing the funding.

Population Served

The mobile programs reviewed for this project were implemented to meet the needs of underserved populations[1]. There are many populations that cannot easily access appropriate oral health care. Homebound or institutionalized elderly may find it difficult or even impossible to receive services in the traditional office setting due to limitations in their mobility, compromised health status, lack of transportation, or funding restrictions on where they can receive care. Disabled individuals encounter similar roadblocks and additionally, may be limited in their choices of care because of discrimination by dental practices and dental team members not properly trained to deliver services that meet their special needs. Children are reliant on adults to take them for care, unless services are delivered in educational or childcare settings. Adults may not be able to reach a dentist during normal business hours, especially if they are not given time off work for dental appointments or lose wages if they do. Geographic isolation, inclement weather, and lack of public transportation or unreliable transportation also reduce access to care. Mobile programs that address all of these problems exist in California.

Financing and Administration

Administration of mobile programs is either as stand-alone operations (usually non-profit), or through larger institutions, such as dental schools. Funding for mobile programs is from a variety of sources including contracts or grants with government agencies, private foundations, service clubs, and individual donations. Most of the staff of the mobile programs we spoke with rely on a combination of funding to maintain

[1] There are mobile clinics that tailor themselves to an upscale market (busy professionals with hectic lifestyles), see, for example California's On-Site Dental http://www.onsite-dental.com

services. Mobile programs affiliated with institutions have access to a broad base of funding by virtue of being part of a larger organization. For example, a $100,000 gift by an alumnus of the USC Dental School funded a self-contained, fully equipped motor coach with a wheelchair lift for the USC/UCLA Mobile Clinic(2000). Similarly, the San Joaquin Valley Health Team in San Joaquin, California recently received a Healthy Families Rural Demonstration Project grant via Delta Dental to fund a mobile dental clinic that will be administered in conjunction with the dental services already provided in their clinic. Other self-contained clinics such as the PRASAD Children's Dental Health Program, which serves the Alum Rock School district in San Jose, are funded primarily by the parent foundation but seek additional funding through donations and partnerships for annual operating expenses. The Tooth Mobile in San Jose, California, an independent mobile van, uses profits from a successful for-profit business to support its free-clinic operations.

CURRENT STRENGTHS

By going into underserved communities, mobile dental programs often provide outreach and treatment for patients who might not otherwise know they were in need of care. In some cases they are also able to determine if the individual is eligible for public programs (e.g., Medicaid) or services (e.g., other dental safety net programs in the community). Some of these programs target specific populations (e.g., institutionalized elders, disabled persons, migrant farmworkers) and can thus tailor their services to meet the special needs of these populations. Many mobile dental programs provide free or reduced-fee care to those who would otherwise not be able to afford dental services, thus removing significant financial barriers. Most clinics are also able to bill public and private insurance programs as well.

There seems to have been an increase in mobile services in recent years as equipment has improved and practitioners become more comfortable working in non-traditional settings. Both paid and volunteer staff work in these programs. The Washington Dental Services Foundation's SmileMobile was able to see over 1,800 children in 1999 with the volunteer support of 73 dentists and dental staff (Washington Dental Services Foundation 2000).

One of the volunteers noted, " Volunteering with the SmileMobile is very rewarding. When you treat people with respect and concern, they really appreciate it. On those days, I get more hugs and handshakes than I ever got in my private practice." Another dentist noted, "The positive feedback you get for the amount of time you invest is overwhelming" (Washington Dental Services Foundation 1999).

Challenges and Sustainability

In many communities, mobile dental programs provide an immediate solution to a dental crisis. But operating a mobile dental program is not without its challenges. Mobile dental vans are costly operations, requiring a constant supply of operating and capital costs. These systems are also less productive than a traditional clinic, and are unable to bill for the relative inefficiency of this delivery model. Dental vans endure great 'wear and tear' and parts must be replaced on a fairly regular basis at great cost to its operators. Large vans are not well suited for mountainous regions or areas with extreme weather conditions. Various state and local regulations/permits also need to be addressed.

Like any dental program, funding is required to support staff. As one program reported, a mobile dental program not only needs a, "good quality dentist," but also requires, "someone capable of delivering services under imperfect circumstances." Staffing a mobile dental program can be a challenge as the pay is less than private practice, work often requires long hours, travel and nontraditional operating conditions. One program administrator spoke of the attempts and subsequent failures of mobile dental vans that tried to staff their program with volunteer dentists. The success of many mobile dental programs lies in finding and maintaining a dedicated staff coordinator to recruit and coordinate staff, patients, and services.

Two mobile dental programs (one serving the elderly community, one serving the disabled community) both noted that their programs were initially met with opposition from the private dental community who feared that the mobile programs would take business away from their practices. In both cases, however, local dentists soon realized that the mobile programs were targeting a previously unmet need in the community. This

emphasizes the need to partner with local dental societies to alleviate fears and build confidence.

Beyond the challenges of maintaining the operations of a mobile dental program, it is often difficult to create a "dental home" through mobile programs. Most mobile programs station themselves in one location for a limited amount of time and prioritize which patients to see by degrees of severity of illness. Many programs will complete patient care, including preventive services, in one appointment if advanced disease is not present. But patient follow-up is often insufficient. The program may not return to the same site each year, or if it does, it sees different individuals each year (e.g., a clinic that visits a school, and sees children in the same grade each year). Another limitation to tracking patients may be technological; some mobile units may lack the resources to maintain and track patient records. A significant obstacle in tracking patient progress also lies in the patient population itself; for example, migrant populations who may not return to the same location year after year, or immigrant populations whose suspicion of any forms/records prevents the program from acquiring accurate information and tracking health outcomes.

Mobile dental programs are generally most successful in overcoming challenges and sustaining themselves when they are affiliated with a larger infrastructure. By operating under the umbrella of a stationary dental clinic or a dental school, a mobile program can benefit from the financial and human resources of the larger institution. One successful partnership is the Oaks Mobile Dental Program and the Missouri Elks Club. Since 1967, the Missouri Elks Lodge has remained loyal to the program, providing not only a trust fund to support the van's operations, but also helping the program find additional funds in the event of unforeseen emergencies.

Mobile dental programs that operate as part of a larger clinic system also may have greater success in tracking patients by having access to systems that maintain patient records. Further, the mobile program can be used as an intermediate step and as a triaging mechanism to bring patients to the larger institution (e.g., a dental clinic) and thus establishing a more stable "dental home."

Case Study: Apple Tree Minnesota / Apple Tree California

Apple Tree Minnesota was formed in 1985 as a non-profit charitable organization whose goal was to increase access to dental care for the elderly, institutionalized populations in Minnesota. Most elderly nursing home residents were public program recipients, unable to pay private fees or get to a dental office. What limited care was available for these residents was sub-standard to care available to the rest of the community. The goal of Apple Tree is to bring quality, comprehensive, continuous care to the institutionalized elderly through the use of mobile equipment.

The program was initially created to serve nursing home residents, but has expanded to increase access to low-income children, public program recipients, and people with disabilities. In 1999, Apple Tree Minnesota was able to see 8,803 individual patients in 25,431 visits.

The program uses several mechanisms for increasing access to high quality care. There are base clinics, each of which serves facilities in a one hour radius. These clinics are the hubs for the mobile care. The additional sites are served by portable equipment, allowing the program to bring services where they are needed most. The program has grown to 95 sites, including three stationary clinics, and ninety-two mobile sites. These sites include nursing homes, community clinics, Head Start centers, and rural hospitals. If each of these sites had been equipped with a dental clinic, the capital costs would have been ten to twenty times greater.

The program goes beyond simply providing services. Apple Tree also plays a leadership role in establishing dental care guidelines, educating providers, and helping create health care options for special needs patients.

Services are funded primarily through Medicaid, but approximately one- third of services must be written off as uncompensated care. This creates a huge financial challenge for the organization to find alternative sources of revenue, create more cost-effective systems, and build community support to establish and operate programs.

One strength of this particular care delivery program is that by using stationary clinics as hubs, patients do have a “Dental Home”, even if that home comes to them. Patient records are kept updated, and follow- up with patients in the mobile sites is done regularly. The key to Apple Tree’s success has been the model it has used. It is a non-profit organization with a volunteer board of directors. While funding is always a challenge, the organization is flexible enough to respond to new opportunities. This has allowed it to grow and change, while maintaining a commitment to high quality, comprehensive care.

This model has been found so successful it has been replicated in a variety of states, including most recently, California. An informal needs assessment showed there are significant oral health needs for institutionalized or homebound populations in our state. Yet there are few dentists who see long- term care residents, and few of these residents have dental benefits. In an effort to address this issue, Apple Tree California’s main goals are to: 1) Develop a model mobile dental delivery system and evaluate the need for clinic- based services for CA 2) Gather critical data to be used for research and public policy development 3) Create regional advisory councils that will function as grass roots advocates, and strive for improved public policy for the elderly.

The biggest barrier to implementation has been securing the funding. It has just received its initial grant and hopes to be in operation soon.

(Source: Interview and (Helgeson 2000))

Future Goals/Room for Improvement

Although mobile programs reduce some access barriers, they rarely are a "dental home" for the populations they serve, but rather serve as a source of emergency/immediate care and preventive measures. In some cases, annual school-based screenings may be appropriate to help refer children to needed services. However, in light of recent research and recommendations that people with a regular source of care are more likely to have visited a dentist in the past year, expansion of these programs as a means for regular care is problematic. (Davidson 1999; Dental Health Foundation 2000; USDHHS 2000) However, in California there is a need for immediate restorative care for many populations, and mobile programs may be one of the best options for providing stop-gap care.

School-based / Linked Dental Programs

School-based or school-linked dental programs operate under the assumption that they can reach children most efficiently because they are a "captive audience". Similar to mobile programs, school-based clinics provide access to dental services for underserved populations by bringing the services to that population. In fact, most school-based dental programs in this country are mobile, either bringing mobile dental vans or portable dental equipment into the schools. Other school-based dental programs provide in-class dental education on issues such as nutrition and proper oral hygiene. Some schools/school districts have established on-site dental clinics, often as part of a larger school health clinic. This model has been used extensively in Scandinavia, especially Sweden, which provides dental care and preventive services in schools throughout the country. This model is not widespread in the US, however.

Population Served

The majority of school-based dental programs examined for this study focused on grade-school and middle-school children, with some programs offering services for pre-school or high-school ages. The programs are mostly in low-income school districts or targeted to school districts where many children lack regular care. Requirements for participation

differ by program. The dental education programs that are classroom based do not discriminate based on income. Treatment and screening programs generally have eligibility guidelines that are primarily financial; some programs use Medicaid eligibility criteria for their services, while others use free school-lunch program qualifications. Others choose to offer services to the entire school population. One program has made a commitment to offer services to all children within their district; children with dental benefits must show that they have received treatment through a private dentist to be excluded from services. Schools must secure parental consent to provide services.

FINANCING AND ADMINISTRATION

Staff interviewed in our survey continually emphasized the necessity of partnerships in funding and administering a school-based dental program. At a minimum, the programs work closely with their school district and school administrators; some programs are administered directly in the schools, while others are administered by a local health department within the school district. School-based dental programs draw on the resources of local community organizations, and dental/ dental hygiene schools and societies; these organizations assume a leadership role in implementing the programs in their communities.

School-based dental services can be eligible for a mix of federal, state and local government funding. California provides federally mandated dental screenings to qualified low-income children through its Child Health and Disability Prevention Program (CHDP). Many of the CHDP screenings are provided by nurse practitioners in a school-based setting. Medicaid also reimburses for services provided in school-based clinics. Other state monies such as the California Children's Dental Disease Prevention Program (SB111) provide support for in-class dental education and limited disease prevention services. Proposition 99 (the tobacco tax) funds counties to provide some clinical services as well as the Children's Treatment Fund. Due to limited and sporadic government funding, support from grants and donations are necessary for sustaining the majority of school-based dental programs. In the Franklin-McKinley School District, in San Jose, CA, for example, the district provides the space to operate a dental clinic within

their larger medical clinic. A majority of the program's operational and fixed costs are covered by private donations, most significantly from the Good Samaritans Charitable Trust. The entire staff at the clinic are volunteers except for one paid dental hygienist and one part-time dentist.

CURRENT STRENGTHS

For the student, the school-based dental program provides the easiest means for accessing dental services; in nearly all cases, fees are waived or coordinated with public programs such as Medicaid. Many programs have implemented innovative systems that streamline bureaucratic obstacles. For example, by using a *passive consent* system, the Calaveras Children's Dental Project in Calaveras County, California has reduced the barrier to care often caused by parents' failing to fill out permission forms or children losing them; the parent is notified that the child will be screened for dental problems and that services will be rendered unless they return the form requesting that this not be done.

In addition to overcoming logistical barriers to accessing care, most of the school-based programs have incorporated some form of group or 1:1 dental education into their services. In some cases, corporations such as Colgate or Procter and Gamble provide free classroom education kits, including toothpaste, brushes, and educational materials. Most of the programs rely on volunteerism from the dental community for their operation, thus providing an infrastructure for dentists and dental hygienists to care for the underserved. The school-based program at the University of Rochester's Eastman Dental Center brings dental students and faculty into schools in the community to treat Medicaid eligible

children. The program not only provides needed care to the children in the community, but also provides valuable training and promotes a sense of community.

Challenges and Sustainability

Community collaborations are generally regarded as an integral part of creating and maintaining a successful school-based program. As Margie Briden of the Accomack County School-Based Dental Program explained, "We've worked very hard to maintain good relationships with the parents, the school family and with the other outside agencies. We did not want any of the local dentists feeling that we were going to take away their patients." Maintaining the enthusiasm and support of all players is a challenge to most programs. Strong and lasting leadership is needed to manage external and internal fluctuations and threats over time.

School-based dental programs are subject to funding instabilities experienced by both dental safety net programs and public school programs. Nancy Bryant-Wallace, of the Logan Family Health Center, operates a school-based sealant program in the National City School District. Ms. Bryant-Wallace explained that, while everyone involved is committed to the project, they are constantly struggling to secure future funding.

School-based dental programs are as vulnerable to workforce issues as are other dental safety net programs. Any public or non-profit program cannot afford to pay what a dental professional would make in private practice. Only professionals with a desire to work in these settings or with a strong sense of social responsibility will even apply for these positions. Many of the preventive services in schools can be done as effectively and at a lower cost by dental hygienists and assistants. Unfortunately, many states have licensure and practice act restrictions that prohibit taking full advantage of this option. In addition, when schools are able to only do screenings and education, many do not have any dentists to refer the children for care.

FUTURE GOALS/ROOM FOR IMPROVEMENT

The school-based model has great potential for reaching underserved children with preventive oral health care and integrated services. There are other school-based health delivery models in addition to the "Dental-only" programs that should be examined. Several hundred school based health clinics (SBHC) have been instituted since 1980 across the United States**.** A 1994 GAO report examined this innovative approach to reach children with limited access to health services. These centers provide students with a range of preventive, medical and mental health services. (GAO 1994) The findings showed that SBHCs improved children's access to health care by removing financial and other barriers in the existing health care delivery system in an atmosphere of trust and confidentiality that adolescents trust. However, none of the programs in that report included dental services. This model was fraught with many of the similar issues that the school based programs met, lack of funding, problematic reimbursement, and staffing difficulties. However, it does provide a base from which to build more integrated models and may provide lessons for those seeking to start dental school-based clinics.

COMMUNITY EDUCATION AND OUTREACH

A community with good oral health is a community in which individuals understand both the importance of utilizing dental services and the need for good personal oral hygiene habits. A successful system is one in which oral health services are delivered through a partnership between the dental professionals and the patients, both parties being responsible for the patient's oral health.

Community education and outreach takes on many forms, largely depending on the needs of the population and the context in which the educational services are provided. While much of community education is provided within the context of other programs – for example, provided in the clinic setting – there are programs that seek out underserved populations to educate them on the importance of good oral health and hygiene. Oral health education often focuses on the prevention of early childhood caries (ECC), oral injuries, and other oral diseases, while some programs provide information on how to

access dental services and financial support for such services. In some cases, education includes information on patient responsibilities, such as the importance of keeping and arriving on time for appointments, and what information to bring. This is particularly important in retaining dentists to serve these populations, as one of the most cited reasons for not doing so is that low income patients do not value the services or the dentist's time, as demonstrated by the frequency of missed appointments.

Population Served

Most of the oral health education programs encountered in developing this report focused on either children or parents of children. While children may be targeted broadly (e.g., through a classroom setting), the populations served tend to be composed of at-risk individuals who are not already in possession of, nor are they likely to obtain, adequate oral health knowledge. An example of a population-specific community education programs is the Colaborativo SABER in San Diego, California. They focus on recent immigrants and first generation Latinos who may have many misconceptions about oral health and how to access dental services (see case study on the next page).

Primary Financing and Administration

Funding for community programs comes from federal, state, local and private sources. For example, the California Children's Dental Disease Prevention Program (SB111) provides state government funding to counties to provide school-based services, a significant component of which is dental health education. Delta Dental recently initiated a campaign to increase awareness of the need for dental services among the Medicaid eligible population. Counties may provide funding for community education programs out of their own general funds, while some private foundations provide targeted funding for community education projects.

While funding sources vary, most programs are administered within community-based agencies. These agencies are in the best position to understand both the misconceptions and needs of individuals in their area and how to reach the population most appropriately.

CURRENT STRENGTHS

Education and outreach are meant to promote and protect the oral health of a community by increasing oral health awareness, knowledge and self-responsibility while developing positive, life-long oral health behaviors. Education and outreach address some of the most prominent consumer barriers to care: cultural concordance with providers or setting, perceived oral health needs, individual fears, emotional issues, embarrassment, difficulty navigating system or paperwork, as well as lack of knowledge of eligibility for services. Outreach and health education does more than increase community understanding of oral health; it potentially increases the probability that at-risk communities will not only understand their need for regular dental services, but will demand appropriate and accessible dental services. The following case study provides an example of how one program increases oral health awareness and knowledge.

Case Study: Colaborativo SABER

Evidence of the success of dental health education is seen through the Colaborativo SABER in San Diego, California. Over the course of a seven-month period, the Sonrisitas project completed 5 eight-week "platicas" or classes to monolingual Spanish speaking residents of Barrio Sherman. To identify whether the goals of the classes were achieved, 300 participants took part in a 14-question pre- and posttest self-report survey.

1. Prior to the "platicas" 76.6% of the respondents indicated that they were unable to identify two local dental clinics and/or dentists. On posttest 95.8% of respondents could identify the two local dental clinics that provide services to low-income families. At pre-test 55.6% did not have a family dentist; by posttest 70.8% were able to identify a dentist in private practice or a clinic. The respondents clearly demonstrated an increase in awareness and identification of dentists and dental clinics in the neighborhood.
2. The awareness of the usage of sealants and fluoride was high in this project. Prior to the first "platica' 67.0% of respondents did not know what sealants were and why they were important to children's dental health. At posttest 95.8% were able to identify what sealants were and why they were applied to children's molars. Based on this question alone, there was 28.7% increased awareness among respondents.
3. Results from school sealant program: the response rate for all seven schools (-SPS) was 30% with 17% being the lowest and 43% the highest. Of 506 children eligible, 265 were screened and sealed. Parent involvement and enthusiasm for the sealant program were significant.
4. Prior to their first Sonrisitas class, 50.6% of the respondents reported using dental floss on a regular basis. By the end of the class 91% of respondents used dental floss, 83.4% on a daily basis.

FUTURE GOALS/ROOM FOR IMPROVEMENT

An extensive review of the oral health promotion literature found that, "Despite hundreds of studies involving thousands of individuals, we know remarkably little about how best to promote oral health" (Kay and Locker 1997). Some of the key findings were that the type and setting of the education matters (group education in schools is less effective than individual chairside counseling), and that dental health education translates into knowledge, but not necessarily changes in behavior. Despite the inconclusive evidence, they note that there is certainly a moral and ethical responsibility to impart knowledge regardless of what people do with it. However, evaluation of efforts is obviously an area for improvement. (See Chapter 5 for a more detailed discussion of this topic.)

Much of the education and outreach found in conducting our analysis focused on educating children and parents on the importance of good oral health for children, with little emphasis on the importance of good oral health for adults. As adults are also vulnerable to oral diseases and transmit the bacteria that cause tooth decay to their children, the need to provide outreach and education targeted at adults cannot be ignored. In addition, research has shown that adult use of dental care is associated with greater use by their children.

There is significant room for inclusion of oral health education and outreach in existing State and local programs that provide overall education to underserved communities. This is discussed further in the section dealing with interdisciplinary and multidisciplinary approaches. One program that focuses on teaching parents about Sudden Infant Death Syndrome (SIDS) through the key message of putting babies to bed on their backs not their stomachs could also add the message "and don't put babies to bed with a bottle as this practice is associated with development of tooth decay and ear infections."

CASE MANAGEMENT AND REFERRAL PROGRAMS

For some people, eliminating the barriers to oral health care requires creating an intermediary to bridge the gap that divides patients and providers. Case management and referral programs work with the needs of patients and providers to reduce the barriers on both sides and subsequently maximize the delivery of care for populations in need. Case management is a time-tested strategy used for a variety of public programs, though not often in dental health programs. This strategy has taken on various forms, many of which appear to be effective and could be applied to oral health care. Referral programs are much more common, as shown by the following examples.

Referral for Urgent Care

- The Share the Care program in San Diego, California is a public/private partnership between the San Diego Health Department, the San Diego Dental Society, and the San Diego County Dental Coalition. It works in conjunction with school-based screening programs (CHDP) to place children in need of immediate care who have no other means of paying for dental care, with dentists who provide pro-bono emergency care.

Referral for Ongoing Care

- The OPTIONS Program also operates a referral program, but serves the entire state of Ohio, working to channel all individuals who need oral health care into the appropriate type of service, be it one of Ohio's volunteer dentist programs or Medicaid reimbursed care.

Referral of Patients with Special Needs

- The Center for Oral Health for Persons with Disabilities works through the existing Regional Center System for people with developmental disabilities in California and their caretakers. A comprehensive program has been established for oral health outreach to both patients and providers, and to coordinate oral health services for people with special needs. (Glassman 1998)
- The Donated Dental Services (DDS) Program is funded by the Foundation of Dentistry for the Handicapped, a charitable affiliate of the American Dental Association. The program serves all ages with fairly flexible financial and other

eligibility requirements. Applicants are matched by a referral coordinator with a volunteer dentist who completes the patient's care. This program, however, does not provide ongoing care.

Case Management Models

- The Rapid Access to Pediatric Infant Dentistry (RAPID) Program in Fort Defiance Arizona screens Native American children in the area and treats them for emergencies if needed. Certified letters and referrals to a Community Health Representative, a public health nurse, or Child Protective Services as a last resort, assure that children do not end up in emergency rooms, but receive a complete course of treatment. Their care is documented in a tracking system.
- The Access to Baby and Child Dentistry (ABCD) program in Spokane, Washington can also be thought of as a case management and referral program. Under the ABCD program, dentists are trained and certified and receive enhanced payments to provide an array of enhanced preventive dental services to children younger than age 5 who are enrolled in Medicaid. Outreach services are carried out by the health district to notify eligible families about the availability of services and to encourage early childhood visits to the dentist. The program also aims to minimize the number of missed appointments. In Spokane County, the ABCD program increased utilization of services in the Medicaid program 7-fold for children ages 0-5 and 23-fold for ages 0-1 (Peterson 2000).

There is an array of models available for coordinating care for the underserved. Many of the "safety net" practitioners interviewed suggested that case management would be a welcome component to the care they currently provide. They felt that referral programs were an important tool for linking medical and dental services, and for creating an avenue to a care delivery setting for those seeking care. Case management programs go beyond just finding immediate services. These programs work to promote regular maintenance of oral health and thereby reduce the level of emergency care required, through ongoing tracking and assurance that their patients have a regular interaction with their providers to get preventive care and education.

Population Served

Case management and referral programs have been implemented to address the needs of a broad range of underserved communities. These populations include children with no other means of paying for needed dental care, populations eligible for specific services (such as Medicaid or free or reduced lunch programs), and/or special populations (such as the elderly or disabled). Any population that is currently in a case management program (for any reason) could add a dental component to the case management system.

Primary Financing and Administration

In California, case management and referral programs seem to be implemented primarily at the local level in conjunction with previously established infrastructure. For example, the SOKS program in San Jose and the Share the Care programs in San Diego and San Francisco are referral programs that work with screening programs already established through the California Health and Disability Prevention Program. In these examples, the dentists volunteer their time; additional funding is provided through a combination of private grants and government reimbursement. As the structural nature of these programs is one of collaboration and integration of resources, funding or investment of other forms (such as the donated time of the dentists) is required on the part of all parties involved. While the geography and size of California may discourage implementing a case management or referral model above the local or county level, smaller, less populated states can institute statewide programs.

Current Strengths

Case management and referral programs bring together members of underserved communities and private dentists where they might otherwise remain disconnected. For consumers, case management and referral programs reduce the barrier to care caused by the bureaucratic processes often involved in accessing care. Many consumers do not know they should be using these services, or simply are not aware that resources exist in the community to meet their needs, let alone the process for accessing these resources. Many of these programs remove at least some of the cost burdens associated with accessing care.

For providers, these programs remove some of the perceived barriers that exist in treating underserved communities. The ABCD model, by providing enhanced payments and education to participating dentists, removes some of the potential financial and process barriers to providing care. Providers also applaud the education and case management for patients. Where programs utilize dentists' volunteer time, they provide private dentists with a means to participate in safety net programs without the associated financial burden. In this sense, case management and referral programs promote volunteerism in the dental community.

Challenges and Sustainability

In order for a referral program to be effective, it must have the support of dental professionals in the community as well as the community as a whole. A small town with few dentists, a significant low-income population and many children in need of treatment may not be able to meet the dental demands of the community overall, let alone support a volunteer-based program. Even in an area with a sufficient workforce, referral programs may struggle with a reticent dental community or waning interest or participation over time.

Overall community support also is needed to ensure sustainability. Beyond the larger issue of funding (which remains a constant challenge), there are smaller contributions that allow the community to work together to provide care. For example, the Share the Care program in San Diego, California relies on donations from local businesses—such as gift certificates from local restaurants—to recognize dental professionals for their participation in the program. Community collaboration not only benefits participating dentists, but also encourages private-paying community-minded patients to support local dentists' involvement in such programs.

Future Goals/Room for Improvement

A case management or referral program will only be as successful as the infrastructure that supports it. One weakness of the referral model is that it does not necessarily create

a sustainable safety net of services; the sustainability of a program ultimately depends on whether it creates a dental home for patients, something that many of the programs in California fail to accomplish. Given the relative shortage of dentists in many underserved areas of the state, it may be that there simply are not enough practitioners to support this model in some communities (Mertz 2000). That said, case management may be what is needed in many communities to bring together underserved populations and resources that are already available.

TELEDENTISTRY

Telemedicine is the use of electronic communication and information technologies to provide health care when distance separates the medical professional from the patient. It also includes educational and administrative uses of these technologies in the support of health care, such as distance learning and administrative videoconferencing. Teledentistry is the application of telemedicine technology and resources in the practice of dentistry. California has a few of these programs. One program operates in rural northern California out of the Big Valley Medical Center, a FQHC look-alike that serves low-income patients. This community clinic has one general dentist on staff, with the nearest specialists in Redding, 100 miles away. When a patient presents a problem that the general dentist feels is beyond his ability or warrants a consultation, he uses an intra-oral camera to film the oral condition and sends the files via internet to one of several specialists participating in the program. The specialist reviews the file at some point during that day and either advises the general dentist what procedures should be done, or makes an appointment for the patient to be seen by the specialist. Neither party is reimbursed for this exchange, but it saves the patient a considerable amount of travel time and cost of having to see a specialist, or in cases where they still need specialist treatment, for the initial consultation by a specialist.

Another telehealth program is part of a larger effort at UOP (discussed earlier) to provide services to developmentally disabled persons. Instead of requiring a patient to come to a major urban center to get the special services they need, the program is testing the use of

videoconferencing for visits. The initial trial included the patient and their caregiver, local health professionals and a case manager, and a variety of specialists such as neurologists and pediatric dentists. The experience saved time for all parties and allowed an interactive discussion of all the patient's health issues, rather than individual discussions about separate body parts or conditions.

Population Served

Telemedicine has been used primarily to provide services and consultation in rural areas and remote primary care locations where there are few practitioners.

Primary Financing and Administration

Funding for these programs varies. The Association of Telehealth Providers in California has a telehealth/medicine center which funded the actual equipment for the BVMC project. The program itself has been folded into the overall health center functions and the operating costs are covered under the dental clinic costs. The equipment will probably last 7-10 years and then need to be replaced.

Current Successes

The two programs in California have been met with enthusiasm by all those who have participated in the program. No evaluation data in terms of improved health outcomes are available at this point.

Challenges and Sustainability

The BVMC staff discussed two main challenges--capital and workforce. The capital cost of the equipment is high, and after 7-10 years it must be replaced. Technical support has been a challenge because of the lack of local expertise. Currently the technicians who support the equipment are based in Silicon Valley, which is a 6-hour drive from the site. Second, the dentist who currently uses this technology was trained and previously practiced in a large urban area with access to new technologies before moving to this remote rural site. Not all dentists have such a high level of technical expertise and enthusiasm for new technology or access to the necessary training. When programs

cross state lines there also are a variety of regulatory and licensure issues that must be confronted.

Future Goals/Room for Improvement

This technology has been used for medicine far more than for dentistry. The model for the use, technical details and interstate regulation of this type of care delivery is constantly evolving but fairly well established, and seems to hold quite a few possibilities for increasing the access and quality of the care for persons living in remote rural areas. One challenge is to create training opportunities for dental professionals to learn additional teledentistry skills, including how to use intraoral digital equipment and communicate with specialists in the context of the new technology.

Workforce Development/Dental Education

A number of universities and federal and state government agencies have implemented programs designed to address the need for a dental workforce willing and able to treat underserved communities. These workforce and education programs focus both on encouraging potential candidates to enter dental and allied dental health professions and on encouraging new dentists to work in underserved areas or communities.

The most common type of workforce initiative is dental school loan repayment programs and dental scholarship programs where dentists make a commitment to serve a community in exchange for a scholarship or reduction of a percentage of their student loans. At the national level, the National Health Service Corps (NHSC) provides monies for loan repayment based on Dental Health Professional Shortage Area (DHPSA) designations. The Indian Health Service also administers both scholarships and loan repayment programs for dentists and dental hygienists. In California, the Office of Statewide Health Planning and Development (OSHPD) administers the California State Loan Repayment Program in conjunction with NHSC funding and criteria.

Most of these programs have been government run, but this is beginning to change. Delta Dental, through the UCSF School of Dentistry, has recently implemented a loan repayment program geared toward improving availability of services for Medicaid beneficiaries. In 2000, two grants of $36,000 each were awarded to UCSF dental students. The students are selected by a faculty committee. In order to participate in the program they must 1) be practicing or be about to practice in a denit-cal underserved community 2) agree to treat some denti-cal patients 3) provide at least one year of service 4) have financial need or high debt, and 5) have previous experience working with underserved populations.

Other financial programs also support potential safety net dentists while they are still in school. The OSHER Scholarship Program, for example, is a new scholarship at the UCSF School of Dentistry where the criteria for qualification are financial need and a demonstrated and continuous dedication to community service.

Finally, there are numerous community-based and national programs that encourage individuals from underserved communities to enter the field of dentistry. Much of the rational for the creation of such programs is based on studies that show that individuals from underserved communities are most likely to return to those communities after graduation (Komaromy, Grumbach et al. 1996). Two examples of programs implemented under this guidance in California and sponsored by the University of California, San Francisco, are the Dental Post-Baccalaureate Program and the Science and Health Education Partnership.

- The Dental Post-Baccalaureate Program is designed for students who know they want to enter the field of general/community dentistry, but who did not get into dental school primarily due to a lack of financial and educational resources. These students are sensitive to the needs of underserved communities, largely because they come from these communities. The program includes courses required to prepare them for dental school as well as exposure to a clinical environment.
- The Science and Health Education Partnership takes students from 3 high schools in the San Francisco area and provides summer and year-round science enrichment

programs. In addition, students are exposed to different health professions, including dentistry. The goal of the program is to encourage these students to enter the health professions.

Population Served

These programs enlist individuals who, provided with appropriate incentives, are likely to practice dentistry in underserved communities. Studies support that these individuals are likely to be racial or ethnic minorities and/or come from low-income and/or rural areas (Komaromy, Grumbach et al. 1996). However, many of the workforce initiatives do not require that individuals be of any particular background as long as they are willing to treat patients from communities in need.

The recipients or benefits of these programs are generally communities that have workforce shortages with respect to dentists. In California, communities are responsible for applying for "shortage" designation (DHPSA) to be eligible for services through federal programs such as NHSC. Once an area is designated, clinics and other safety nets can apply to recruit dentists participating in these programs.

Primary Financing and Administration

Dental workforce and education enhancement programs are generally administered at the state or federal level. Funding for many of these programs is provided by the federal government, although an increasing number of academic institutions and foundations are recognizing the need to enhance the dental workforce in order to increase access to oral health.

Current Strengths

Workforce and education programs seek to remove many of the barriers to oral health care that exist at the systematic level. Loan repayment programs and scholarship programs reduce the financial barriers preventing otherwise interested dentists from practicing in underserved communities. The federal loan repayment program places dentists in communities of greatest need, and pays the entire costs of their loan

repayment. Education programs seek to recruit students who will return to underserved communities after graduation and therefore increase the number of dentists committed to underserved populations.

Challenges and Sustainability

Not surprisingly, the greatest challenge in maintaining many of these programs is finding the funding to sustain them. A recent article in the New York Times revealed that the National Loan Repayment Program budget was cut, leaving healthcare professionals, who committed to a 2-year contract under the assumption that their loans would be paid, without any form of compensation beyond their salaries. The article pointed out that, without providing loan repayments, there is little to no incentive for healthcare professionals to take jobs in these areas (Winter 2000).

Even where there are funds from the government, the structure and design of loan repayment programs often limit which clinics are eligible to participate in the program. The California Loan Repayment Program requires that participating clinics match the amount of loan payment paid by the State. Often, those clinics most in need of a dentist cannot afford to honor this matching grant. However, this program allows for flexibility for the practitioner to decide in which underserved area to practice.

How effective are loan repayment programs in retaining health professionals in underserved areas? A survey done by the California Loan Repayment Program in 1995 measured the retention rate of physicians who participated in the program. The study found that 12-18 months after the end of the obligation, 56 percent of the physicians remained at the site. Dentists began participating in the program in 1995. Since that time there have been four dental loan repayment placements, all of which have completed their service agreements. Two dental placements remained at their original sites as of June 1999, a 50 percent retention rate (Mertz 2000).

These programs have great appeal and participation both for communities of need and for providers. However, the retention rates indicate an inability of the current program to

provide a permanent fix to workforce shortages. Recruiting providers who would be more likely to settle in rural or underserved areas may help increase the retention rate. The following case study is an example of how the NHSC is attempting to do this.

Case Study: Educational Partnership Agreement Dental Pilot Initiative

In 1993, due to State licensure restrictions and placement difficulties, the National Health Service Corps (NHSC) Scholarship Program discontinued awarding dental scholarships. Since then, due to the critical need and demand for dentists who treat Medicaid patients and the uninsured, dental scholarships have been reinstated through a pilot program, the Educational Partnership Agreement Dental Pilot Initiative. The pilot awarded 13 scholarships to third and fourth year dental students in the fall of 2000, and anticipates awarding an additional 16 scholarships in the fall of 2001. The pilot departs from the usual practice of awarding NHSC scholarships in other disciplines in one important respect: applicants must attend dental schools located in pre-selected States that exhibit a high dental need and that have signed an Educational Partnerships Agreement with the NHSC Scholarship Program. The Educational Partnership Agreement (EPA) is a collaborative partnership between the NHSC Scholarship Program and a health professional school, signed by the school's dean. As of December 2000, 23 dental schools located in 17 states have signed EPAs, including three in California: The University of Southern California, the University of California-Los Angeles and the University of Pacific.

The purpose of the EPA is to comprehensively prepare NHSC scholars during their training for service to the underserved by offering scholars a menu of mentoring and learning opportunities. Dental schools that have signed the EPA are expected to:

- Develop and implement activities that reinforce the mission of the NHSC. These activities could include starting an NHSC student organization, hosting NHSC clinicians on campus as speakers, and sponsoring a seminar series on health disparities.
- Offer service-learning experiences in underserved communities that provide students with valuable "hands-on" experience in the provision of primary and preventive health care and opportunities to critically reflect on these experiences.
- Assist in matching NHSC Scholars with NHSC alumni and other clinicians with experience in providing primary care to underserved communities, who can serve as personal and professional mentors and advisors.
- Integrate into the curriculum a focus on providing culturally competent care to diverse populations.
- Assist in placing NHSC dental scholar graduates in communities designated as health professional shortage areas.

Community and professional partnerships will be critical for dental schools to successfully meet the EPA expectations. Schools are encouraged by the NHSC to develop relationships with NHSC program staff, Area Health Education Centers and Primary Care Associations in their state, community and migrant health centers, local health departments and other key stakeholders in the provision of primary health care in underserved communities. The NHSC scholarship program has entered into contracts with two national organizations to provide training and technical assistance to the dental schools that have signed EPAs. Community-Campus Partnerships for Health (CCPH) serves as a resource for all components of the EPA by convening a national advisory group, distributing resource materials, developing an EPA website and hosting teleconference discussions.

CCPH will also sponsor a service-learning training institute at the March 2001 American Dental Education Association conference. The Association of Clinicians for the Underserved (ACU) is identifying and training NHSC alumni and other clinicians as advisors for NHSC dental scholars. ACU also matches advisors with NHSC scholars and other students attending EPA schools.

A team of investigators at the Oregon Health Sciences University has been hired to evaluate the impact of the EPA dental pilot initiative. Although it is too soon to comment on the initiative's outcomes, the strategy of a contractual agreement with the scholar's school, and providing resources to assist the school in fulfilling the contract's expectations, is an innovative approach to creating a supportive educational climate for attracting more dentists in underserved communities.

Future Goals/Room for Improvement

Even if recruitment programs are successful in increasing minority applicants to the dental and dental hygiene programs, admissions committees still make decisions primarily based on previous academic records and test scores. This process effectively weeds out dedicated students who are socially conscious and committed to community-based care, but may not have the highest academic scores.

Given low retention rates for dentists whose loans or scholarships have been paid off, administrators of these programs might consider revamping the selection criteria and creating better orientation and incentive programs to integrate the providers into their assigned communities.

State Level Funding and Financing

As discussed in depth in Chapter 2, there are a number of state level funding and financing programs that seek to increase access to oral health services by either funding the services directly or by providing public insurance to reduce financial barriers to care. About $700 million is generated annually by the Children and Families Act (Prop 10) from tobacco taxes to provide non-categorical resources to support the healthy development of children prenatally to five years of age. Newly created county commissions in each of California's 58 counties receive 80% of the funds based on strategic plans developed with extensive community input. County commissions use these funds to complement existing funds to fill resource gaps or to create new

crosscutting projects that bring together resources from different programs and parts of the community.

A dental coalition in Monterey county recently received Prop 10 funding for a multi-pronged program to provide screening, preventive and treatment services to young children, along with a training component for child care workers, dental professionals and health professionals. The Lassen county commission also received Prop 10 funding for a dental health initiative, and in October 2000 held a regional oral health summit for Lassen, Plumas, Modoc and Sierra counties. This multidisciplinary meeting resulted in the formation of a regional oral health coalition with priorities for regional action and strategies for each county to consider. Participants received a binder of information and resources, particularly on strategies for leveraging other resources for oral health programs.

Population Served

These programs have income eligibility requirements that vary, however most of the population eligible for these program are under 250 percent of poverty. In addition to income requirements, some programs, such as the Rural Health Services Program, target certain regions, while others, such as the Children's Treatment Program, target certain age groups.

Primary Financing and Administration

These programs are funded by state monies, either through general funds, special block grant money, or special taxes. The administration of the program is usually in a state department, such as the department of Medi-Cal dental services, but it varies by program. In the case of the Children and Families First funds, local commissions administer the granting program, and the local initiatives that administers the actual programs. Traditionally, Title V MCH block grant monies have funded many state and local dental health programs. While some states still devote significant funding to oral health services, California does not provide any Title V money for programs, other than for a part-time dental health consultant in the MCH Branch and some educational materials.

CURRENT STRENGTHS

Most of these monies directly benefit local communities, families and individuals. Special taxes often target unhealthy behaviors to help pay for programs that promote healthy lifestyles.

CHALLENGES AND SUSTAINABILITY

Sporadic and inadequate funding, as well as politics hamper these programs from reaching the full audience that would be eligible for services. Denti-Cal fraud is one situation that compromises care, wastes funding and prompts honest providers to be wary of participating in the program. AB 1098, sponsored by Assembly member Gloria Romero (D-Los Angeles), strengthens the state's role in fighting Medi-Cal fraud by allowing the convening of a grand jury to investigate potential cases and to confiscate assets of offenders. The bill also tightens state controls on Medi-Cal documentation and mandates that providers give "detailed information" to assist investigators in identifying abuses. The legislation also increases prison sentences for offenders to five years and allows fraud cases to be prosecuted under organized crime laws. California has earmarked $21 million to fight Medi-Cal fraud this year (Cavanaugh 2000).

FUTURE GOALS/ROOM FOR IMPROVEMENT

State funding is greatly influenced by federal and state priorities, politics and regulations. This situation is not likely to change unless a universal health care program is instituted.

PRIVATE FUNDING/GRANT PROGRAMS

A number of foundations, corporations and dental societies recognize the need for additional support to improve the quality and quantity of oral health care to underserved communities. These organizations provide support to local programs or collaboratives through targeted monies, usually in the form of grants. While not directly providing safety net services, their funding allows the delivery of many services to continue. There is an understanding, however, that programs initiated or expanded with grant funds will identify other ways to sustain themselves. For example, the Josiah Macy, Jr Foundation

in New York recently funded a consortium of three dental schools (Connecticut, Columbia and Michigan) to assess the feasibility of teaching dental students and residents in a community setting instead of the traditional venue of the dental school clinic. They will enlist senior dental practitioners from underserved communities to serve as mentors, especially in aspects of practice management and community health.

Population Served

Any of the underserved populations already discussed who meet the target requirements for each grant cycle.

Primary Financing and Administration

Foundation monies, corporate donations, and private donations all support programs. All of these are highly dependent on economic conditions and a "spirit of giving." When the economy is unstable, with individual profits and earnings down, charitable contributions are reduced. Unfortunately, the numbers and needs of underserved communities increase at the same time.

Current Strengths

Such funding is vital to the survival of many programs, especially when government funds are scarce or only cover certain categories of people. These funds also allow programs to expand beyond their current infrastructure. In the past few years, Sierra Health Foundation, the California Wellness Foundation and the California Endowment have provided increasing levels of funding for oral health projects. In 1997 the Dental Health Foundation received a grant from the Endowment to support school-based screenings and preventive dental services in 10 California counties. By March 2000 a total of 27,552 children were screened and 7,092 received sealants (Dental Health Foundation 2000). At the end of the 1999-2000 school year, 37% of the children at the project schools had dental sealants compared to only 15 percent at the non-project schools. At the project schools, 30% of the teeth needing dental sealants received sealants during the school year, compared to only 6% at the non-project schools. The primary barrier for not placing more sealants was the failure of parents to return a consent form,

although some schools experienced a problem finding staff and volunteers to place the sealants (Dark and Phipps 2000). Three technical assistance workshops are being held in 2000/2001 to help grantees seek additional funding to sustain their programs.

The Rose Community Foundation in Denver has recently awarded an $86,000 grant to an Early Education Health Care Center for the first county health center to be located in a preschool. Services will include well child care, immunizations, simple laboratory work, dental and mental health care.

The Dental Health Foundation, in partnership with the California Primary Care Association, also received funding from the Endowment and The California Wellness Foundation to seek ways to reduce access barriers and integrate oral health into primary care, focusing on primary care systems development, integration and quality. Both the California Endowment and the Wellness Foundation have provided significant funding for fluoridation. The focus of Sierra Health Foundation funding has been on collaborative projects and many different types of community-based and school-based programs, including fluoridation. For example, school-based programs were established in Sacramento, Sutter/Yuba and Shasta counties and a mobile dental program was started using portable equipment in Modoc county. They also provide significant technical as assistance to Northern rural counties on grant writing and leveraging other funds.

Local foundations and businesses also provide sporadic funding. In Monterey county, the Childrens Miracle Network provided matching fund to supplement Prop 10 monies to purchase a dental van to travel to remote areas of the county. Dental products manufacturers often contribute free supplies or promotional items such as fluoride rinses, toothbrushes, toothpaste, floss, sealants, and mouthguards, as well as educational materials to community programs, especially if the programs participate in research or special education projects. Many companies such as Procter and Gamble have developed extensive websites that include educational materials for the public and continuing education courses for health professionals. They play an important role in diffusion of new information.

Challenges and Sustainability

County or local data are not always available to support the need for services, which limits the ability to write convincing grant proposals. State and regional programs need to provide technical assistance to local communities to enhance their needs assessment and grant writing capabilities for oral health services. Since grant funds are time and focus limited, program managers are continually looking for multiple funding sources to sustain programs. In many cases, local programs are competing with each other for limited funds. This often creates a spirit of competitiveness rather than collaboration.

Future Goals/Room for Improvement

Privately grant-funded service delivery programs have enormous flexibility in determining how the services should be delivered, within current law and regulation, at the local level. Many of the programs interviewed in this project used grant funds creatively to expand services or replace revenue lost from uncompensated care. The challenge is to translate knowledge gained in pilot projects into sustainable programs.

Research and Information Collaborations and Initiatives

The past few years have seen a significant increase in the number of research and advocacy programs aimed at increasing the understanding of oral health issues, services, and effective preventive strategies. AAPD's "Filling Gaps" is identifying and collecting examples of "best practice" protocols designed to increase the access of preschool children to dental care and to improve their oral health, although their definition of best practices does not appear to be evidence-based. Association of State and Territorial Dental Directors (ASTDD) is conducting a similar project, but convening an advisory group and reviewers to critically review the evidence for effectiveness of community-based programs. The Guide to Clinical Preventive Services, a summary of evidence-based practices written by the US Preventive Services Task Force, is a handbook for primary care providers and is in the process of revising some of the oral health chapter. A companion guide for community-based programs does not yet include much information on oral health, particularly from an evidence-based standpoint. The HRSA/HCFA Oral

Health Initiative and the Healthy People 2010 Oral Health Objectives are advancing federal action around oral health issues, as well as becoming a major resource for information. A variety of national professional associations such as the American Public Health Association, The American Association of Public Health Dentistry (AAPHD) and the ASTDD have also undertaken initiatives to help reduce disparities in oral health. Recent funding from HRSA will promote research and policy development by the newly formed National Oral Health Policy Center at Columbia University.

Population Served

These programs tend to target policy makers, practitioners, and program administrators who are responsible for addressing issues of oral health care access for various subgroups of underserved populations. Each individual initiative may look at issues for different populations (ie. developmentally disabled or elderly) or may look at general issues that need to be addressed to increase access to care for all populations.

Primary Financing and Administration

Much of the basic science oral health research, health services research and demonstration projects benefiting underserved populations is funded by federal monies through CDC, NIDCR, HRSA or HCFA. CDC and NIDCR are making significant contributions in terms of data surveillance systems and funding research centers to reduce oral health disparities and conduct prevention research. However, foundations and dental manufacturers also provide significant levels of funding, particularly for clinical research. Most of these funds are highly competitive and are awarded to investigators in universities or other research centers. Community-based programs that want to become involved in research projects need to partner with these centers in collaborative relationships that will benefit members of the community.

Current Strengths

California receives a great deal of research funding for oral health projects because of the number of dental schools in the state and affiliated research centers or institutes. Recently researchers have been partnering with agencies such as the Department of Health

Services and the California Dental Association to conduct joint projects. The following case study exemplifies one recent joint effort.

Case Study: Alameda County Demonstration Project

In September 2000 the California Medicaid Dental Contracts Program received a grant from HCFA to address the following problems: 1) the relatively low level of access to dental care of children ages 0-5 enrolled in Medi-Cal in California and Healthy Families Program; 2) the disproportionately high caries rates in these children; and 3) the high costs faced by publicly-funded dental care programs as a result of children's reduced access to care, high caries rates, and lack of appropriate and early preventive care. The goals of the project are thus to increase access to dental care, reduce the prevalence of early childhood caries, and reduce the costs of dental care for children participating in the project sites.

The project intends to accomplish these goals by: 1) conducting an aggressive outreach campaign to recruit families (or families-to-be) of children ages 0-5 enrolled in Medi-Cal or the HFP into the project; 2) orientating enrollees on office expectations and responsibilities, helping to resolve barriers to access, and providing case management services, including linking families with participating providers; 3) conducting an aggressive outreach campaign to recruit medical and dental providers to the project; 4) training and certifying medical and dental providers on child management, caries risk assessment, family education, use of preventive agents, including fluoride varnish and chlorhexidine, and use of glass ionomer sealants and restorations; 5) offering enhanced benefits to enrolled families (see below); and 6) offering enhanced Medi-Cal and HFP reimbursement for the enhanced benefits and other selected dental procedures to medical and dental providers certified by the project who care for project enrollees.

Medi-Cal and HFP administrative data sets will be analyzed to determine demographic characteristics, dental services utilization rates, dentally-related services utilization rates, and expenditures for the intervention and control groups. A sample of children in the two groups will be examined for changes in caries increments over the life of the project. Data will also be collected on the administrative costs of the program.

A number of organizations have made major commitments to this collaborative project. Overall project direction will come from the Medi-Cal dental program, offering both direct and in-kind support. The Alameda County Health Care Services Agency has committed $100,000/year for the 3 operational years of the project for enhanced reimbursements to medical and dental providers participating in the program, as well as in-kind support of the co-Principal Investigator. A contract with the UCSF School of Dentistry will provide support for the project's Principal Investigator, as well as for project evaluation and training of medical and dental providers. Many community clinics and other community-based organizations, including those serving Native Americans and other racial/ethnic minorities, will also be actively involved in the project.

Challenges and Sustainability

Many of these initiatives are so new that they have not yet been fully implemented or evaluated. It is hoped that these initiatives will be successful in advancing the understanding of access problems and possible solutions, as well as providing visibility for oral health issues. Disseminating and translating the findings to local communities is a constant challenge and needs new approaches.

Future Goals/Room for Improvement

Researchers and administrators in universities and research institutes are not usually very connected to communities where they conduct research projects. Their primary focus is maintaining the integrity of the research so that the findings are valid and publishable. In many cases, local communities do not garner any significant useful funding from these projects or gong-term benefits. In many cases, they were not involved in the planning process, but only expected to write letters of support and comply with grant protocols. Local communities and advocacy groups are becoming more wary of participating in such projects and are beginning to demand more involvement at all stages of the grant writing/research process to assure that they will derive some benefits from the process and not just serve a "guinea pigs".

Community Water Fluoridation

California has required the fluoridation of drinking water for water systems of over 10,000 service connections since 1996. Yet, the law provides no funds for construction of new systems or their operation. This has somewhat diminished the impact of the law. Fluoridation is still not a community standard in most parts of California. This is particularly true in rural areas where water systems are under local control or where families use private wells. While the cities of Sacramento and Los Angeles have recently gone "on-line," there are still 35 counties in California that do not have any fluoridated public water systems (Imperial, Riverside, San Bernardino, Inyo, Kern, Santa Barbara, Tulare, Kings, Santa Cruz, San Benito, Merced, Stanislaus, Tuolomne, Sierra, Mono, Amador, El Dorado, Tehama, Shasta, Trinity, Mendocino, Siskiyou, Modoc, Madera,

Lassen, Lake, Plumas, Monterey, Alpine, Mariposa, Calaveras, Sutter, Glenn, Colusa. San Diego voted in fluoridation, but has not yet implemented it). Some counties have scattered areas of natural fluorides or use primarily small or individual private wells. These counties represent 30 percent of the population. Even in counties with fluoridation, not everyone is served by these water systems. More significantly, those communities still not fluoridated tend to be communities with less oral health resources and services (Manuel-Barkin, Mertz et al. 2000).

- Public health professionals and dental professionals are almost universally in favor of fluoridation, and much has been done to demonstrate the safety, efficacy and cost savings from community water fluoridation (Ripa 1993). Efforts to implement water fluoridation consist of public awareness, rebuttals to antifluoridationist claims and advocacy for funding. Examples of current efforts are:
- The Sierra Health Foundation's brightSMILES program has provided community grants for implementation activities to improve oral health in their funding region. The most recent awards of $500,000 (September 2000) are totally devoted to support fluoridation activities.
- California recently hosted the first National Fluoridation Summit which brought water fluoridation advocates and public health specialists from 22 states and Canada together to confer about promoting and implementing community water fluoridation. The Summit was praised by Surgeon General David Satcher as being a timely and monumental event, and he stressed that fluoridation is an effective and necessary tool in reducing oral health disparities.
- In its effort to promote statewide fluoridation, the Washington Dental Service Foundation provides financial aid to campaigns across the state. In some counties, it provides technical assistance to local fluoride coalitions and education messages in Spanish. In Yakima, they provided $180,000 for all startup costs, training of staff and costs for the first year of fluoridation. They also provided fluoridation equipment for Pasco and Yakima counties. The WDSF has developed a "FluorideWorks" website that gives information and promotes fluoridation of Washington counties. The website also gives fluoridation maps, and is sponsored by over 20 organizations.

Population Served

While community water fluoridation benefits the entire population, it is considered by many experts to be the most effective and efficient means of preventing dental caries in children, regardless of race or income level (Aved 1996). The benefits of fluoridation include reduced frequency and severity of tooth decay, decreased need for tooth extractions and fillings, and reduced pain and suffering associated with tooth decay. The 1993-1994 California Oral Health Needs Assessment of children found that children in non-Head Start preschools in rural areas had, on average, 206% more tooth decay than the preschool children in fluoridated areas (Dental Health Foundation 1997).

Primary Financing and Administration

While there are both political and logistical barriers to community water fluoridation, financing these efforts is also been a barrier. Usually the state or a local community must pass legislation, pass a ballot measure, or decide administratively to fluoridate the water. Funding may or may not be included in these measures. The overall cost-savings are significant, but it can still be an expensive endeavor for extremely small water systems at start-up. Equipment must be purchased and installed, and water engineers must be trained to use the new equipment and monitor the process. In California and other states, many local communities are reluctant to allocate funds, thus community foundations have funded many initial projects. Regardless of funding, it is the water supplier that must administer and monitor the process.

Current Strengths

While California is still far below the national average, with only 62% of the population drinking fluoridated water, but the past few years have seen some significant improvements with major cities coming online. Local oral health coalitions and technical assistance from national agencies and experts have strengthened fluoridation efforts.

Challenges and Sustainability

Fluoridation efforts are hampered by political opposition, lack of funding, and logistical issues. Community water fluoridation is not considered controversial by a majority of the

scientific and public health communities; however, politically it has persisted as an issue that many legislators and community leaders have avoided because it has been a battleground for vigorous opposition by a small but outspoken minority who have fought it with the dedication of religious zealots. (Newbrun 1996).

The CDC has revised its fluoride recommendations, creating controversy over the language that has caused a rift at the national and state level and delayed their public release.

Fluoridation is most cost-effective when introduced in large public water systems. Much of California is not on these systems, and private wells and smaller systems are not easily or cost effectively fluoridated. Those without access to fluoridated water can use supplements to increase their fluoride intake, although compliance is less than optimal. The challenge is to monitor and inform the population about which areas are receiving the benefits of fluoridated water and who should use supplements. The CDC has created an extensive support network and reporting system for communities that want to fluoridate.

Future Goals/Room for Improvement

The mandate to fluoridate in California exists, and the benefits of community water fluoridation are well proven (Newbrun 1999). With additional funding, training of water engineers, and advocacy to dispel antifluoridationist objections, more communities could implement this simple, effective, and economical public health measure.

Interdisciplinary and Multidisciplinary Efforts

The Surgeon General's Report on Oral Health (2000) and numerous other reports that include recommendations for reducing barriers to care/access problems, suggest that oral health is a community-wide/national concern that cannot be addressed solely by dental professionals. Multidisciplinary and interdisciplinary collaboration and program integration are needed in the areas of community outreach, referrals to services, health

promotion, prevention services, primary care, specialty care, tracking and follow-up, financing, health professions education, and practitioner continuing education. This extends to all aspects of needs assessment, program planning, implementation and evaluation, including not only how things are done, but settings where they are done and who does them.

Interdisciplinary efforts began in the late 1940s around teams for delivering primary care, then expanded to teams for assessing and coordinating care for disabled children, and later to the field of geriatrics and rural health. Recently, federal and state regulators such as the Joint Commission on Accreditation of Health Care Organizations (JCAHCO) are asking professionals to be accountable for the care they provide, using evaluation language related to interdisciplinary, not multidisciplinary functioning (Klein 1996).

The theory behind interdisciplinary teams outlines unique, complementary and substitutionary roles to team members, depending on the circumstances, with the assumption that all team members' skills are valuable and everyone functions as an equal partner in decision-making. There is no hierarchy as in the traditional medical/dental model of care. Anyone with strong leadership, group facilitation and communication skills can be the team leader, no matter what discipline they represent. Team members work together in a collaborative manner and also are able to work independently. Multidisciplinary teams, on the other hand, work independently with more of a hierarchical structure, often maintaining their traditional professional roles.

Populations Served

Any population group

Primary Financing and Administration

The financing for these arrangements varies, and will depending on whether the program is under the administration of one agency or if it is a collaborative effort across agencies. Financing and administration of interdisciplinary efforts can be challenging, for these efforts may not directly correspond with staffing or control over service delivery.

Funding partnerships are possible, consisting of public, private practice, and foundation support.

CURRENT STRENGTHS

Oral health arenas that have benefited from multidisciplinary and interdisciplinary approaches are community water fluoridation, cleft plate/lip care, tobacco use prevention/cessation, and, to a limited degree, dietary changes toward more healthy food choices, and use of dental sealants. Although many efforts to reduce BBTD or ECC have used these approaches, the fact is that the average number of decayed and filled teeth among 2-4-year-olds has remained unchanged over the past 25 years. This in part has been a result of insufficient research or translation of research into practice, as well as inadequate sensitivity to cultural variations in health beliefs and behaviors among populations.

There are a number of significant encounters that families have in relation to their children where oral health information and services could be provided outside of the dental care system. Some of these are through state or local programs funded by federal, state, local or other monies. Research shows that early contacts with families might prevent much of the early childhood caries and other oral conditions that affect young children (Casamassimo 1995). Costs for treating this disease are very high, and its consequences on long term health are unclear (Barnett 2000). The American Academy of Pediatric Dentistry and other national organizations such as the American Public Health Association, are trying to change dental practice so that health practitioners and dental practitioners incorporate anticipatory guidance and early dental visits (by age one—earlier for high risk children) into their usual practice. This is difficult since most professionals lack the training or experience to do so.

The California Dental Association already has adopted formal policy related to dental visits by age one and is collaborating on a grant-funded project with the California Society of Pediatric Dentists (CSPD) to develop a pediatric dental continuing education

curriculum for general dentists. Other efforts around the country are incorporating outreach, screening and anticipatory guidance into WIC and Well Child clinic visits.

Encounters may be envisioned as a pathway starting when the mother is pregnant, at birth, and then continuing on through childhood and adolescence. This model has been outlined in a very detailed fashion in the publication *Bright Futures in Practice. Oral Health* (Casamassimo 1996). Baseline data collection through a knowledge, attitudes and practice (KAP) survey would provide valuable information for subsequent anticipatory guidance approaches. Approaches that are being suggested and tried in various programs follow:

Figure 4.3
Possible MCH Pathways for Care

Prenatal care: The mother's own oral status could be assessed, including a micobiological assay, and improved through an appropriate oral hygiene regimen, such as use of chlorhexidine rinses, and treatment of any immediate needs.

Birth: Upon discharge, mothers could receive counseling and a kit/package of helpful oral health information and oral hygiene supplies. Some IHS programs and local programs are including oral health information about oral development milestones and oral care, and a baby toothbrush/pacifier in this packet. The California Children and Families Commission is in the process of field testing a toolbox kit of pamphlets, a booklet and video for all new mothers in the state.

Infancy: If the family is eligible for WIC, Well Child clinics or CHDP, then a risk assessment could be performed, including an oral screening by age 1, and anticipatory guidance information could be given by one of the staff. This would necessitate additional training of staff or use of RDHAPs employed by or consulting to such programs. An oral health component already is included in both programs, but it could be greatly expanded. The periodicity schedule could also be used more effectively with the application of fluoride varnishes, demonstrating cleaning the baby's mouth, etc. Dental offices could send the baby a one-year birthday card and offer an oral exam and counseling to the parents.

Early childhood: Head Start already has an oral health component, but much of it relates merely to screening and referral for care. It is a good opportunity to reach parents. Early Start Programs and day care centers are another opportunity to educate staff and parents and to promote oral care.

Challenges and Sustainability

Current MCH programs in California do not adequately address oral health, although they are slowly improving. Figure 4.3 provides a few examples, using prenatal or perinatal government-funded programs only, of ways to integrate oral health into already existing MCH programs in California. Programs for other age groups are equally void of an interdisciplinary approach, often because of categorical funding, the separation of dental financing from medical financing systems, isolation of dental professionals from the rest of the health care team, and health professional's general lack of knowledge about oral health.

Gaps in the Current Safety Net: Barriers Not Addressed

This analysis of safety net programs has demonstrated there are significant gaps not addressed within the current system. Failure to address many of these barriers is partly the result of insufficient resources and lack of external support which force safety net programs to focus on immediate care delivery over what might be considered long-term goals. Yet, some of these issues are equally important in increasing access to oral health. In creating a new model for care delivery, it is necessary to critically examine the significant shortcomings of the current system.

Practice Characteristics

One area that has been given little attention and therefore remains a barrier to underserved populations is provider practice characteristics. This includes personal safety concerns when traveling to the clinic, crowded waiting rooms, long waiting times, and general upkeep and equipment of a facility. It has been shown that underserved populations receive lower quality care and that their perception of this fact is itself one reason that these populations do not seek care regularly (Grembowski 1988). For example, if a practice is extremely busy (as is the case in most public clinics) the provider may take less time to share information with the client; lack of information may be the greatest source of dissatisfaction among dental patients (Grembowski 1988). Most dental patients do not take an interest in or have the ability to judge the technical quality of the

care they receive. However they may judge "quality" on other practice characteristics such as location, waiting time, privacy, office décor, size and staffing, as well as the age, class, race/ethnicity and personal characteristics of the dentists. Usually patient satisfaction has been related to the "personal caring" of the dentist and staff (Bader and Ismail 1999).

Research in primary care has shown that control over treatment decisions and a feeling of personal participation in care decisions lead to better compliance and a propensity to seek care more often for low income women (Bushnell, Cook et al. 2000).

One major complaint among providers who see underserved patients is their perceived low level of compliance with personal oral health practices. One provider suggested that more rigorous case management of patients is needed to help ensure compliance with appointments as well as attention to personal health. Unfortunately, our phone interviews did not reveal that any programs had explicitly found any meaningful solutions to this problem. One might hypothesize that if providers took more time to share information, created a comfortable and caring environment and sought to provide the highest quality care possible, the compliance and participation by patients in their own health might increase. This is the kind of intervention that could be done in existing settings and be measured with patient satisfaction surveys and by improved health outcomes. Currently, however, these patients, if they can get services at all, wait for hours in crowded public clinics or are seen in the margins of traditional private practices. Our surveys were conducted by phone so we did not have the ability to judge whether each program addressed these issues.

CONSUMER AWARENESS AND EDUCATION

While there are some innovative and possibly successful models for consumer education and awareness among underserved populations, this area is not being addressed as comprehensively or systematically as needed to shift the current paradigm of dental care in favor of those who need it most. The inverse care law, that those who need care the

most are least likely to get it, compounds the fact that the poor have a greater risk of oral disease and lower levels of oral health than other groups (Grembowski 1989).

Analysis of the barriers to care showed though, that economic situation is not the only factor contributing to poor access. In California in particular, cultural and language issues may have a significant impact the knowledge base of some populations. Programs that emphasized culturally appropriate messages and had targeted outreach are in short supply. This is an area that could use considerable expansion.

The more information consumers have about their health and what personal steps they can take to improve it, the more they can become partners in maintaining their oral health. This education can come in many different forms, and may not necessarily be most effective coming from the dentists themselves (Grembowski 1988). Lack of knowledge about disease, availability of services, and treatment options all lead to underserved populations having less access to care.

Mobility of the Population

Research continually demonstrates the importance of having a usual source of care or "dental home" in utilizing dental care services and maintaining good oral health (Dental Health Foundation 2000; USDHHS 2000). Regular visits to the dental office promote better personal habits and allow dental professionals to track oral history through patient records. Yet, as noted in Chapter 3, the lifestyles of many individuals in California do not readily conform to establishing a regular source for oral health care. For example, migrant farmworkers, fishermen, loggers, and their families must may seasonally depending on availability of work.

Various statewide programs, such as the Rural Demonstration Project, provide funding to local communities that try to address the special needs of these populations. Local safety net programs, such as the Trinity County mobile dental van, the Children's Miracle Network, or various migrant health clinics meet the immediate care needs of these communities. Yet these programs face limitations in establishing a usual source of care,

the consequences of which range from not being able to complete a patient, to not being able to track a patient from one year to the next. For the programs interviewed in this study, inability to track patients limits not only their ability to provide a continuum of care, but also their ability to evaluate the effectiveness of their program in terms of oral health outcomes.

Addressing the issue of record portability will require utilizing innovative technologies and information systems. This may include dental networks to track patients, or new technologies that allow patients to carry their own records on a wallet-size card.

Effective Financing Changes

Many states have raised Medicaid rates and include dental services in SCHIP, but the effectiveness of this approach on increasing dentist participation in the program and beneficiary utilization is unclear. Some states have increased rates across the board while others have increased rates only for specific procedures. Some states have seen little change despite the increases, while others have met significant increases in participation. State efforts to increase reimbursement rates have come with mixed results largely because a number of other factors (such as workforce shortages) contribute to low provider participation in public programs. Increasing the reimbursement rates is a first step, but additional measures, perhaps even overhauling how the programs function, may be necessary to truly encourage participation. California is considering overhauling its Denti-Cal program, increasing rates, reducing administrative burden, and reimbursing for more services. To date, the Denti-Cal program has increased select rates. The average increase for all procedures was 83 percent, and across procedures with an increase was over 100 percent. However, many of the procedures dentists view as their "bread and butter" did not get increases (Isman 2000). What effect this will actually have on increasing access for Medicaid populations remains to be seen.

Administrative Burden of Safety Nets

No programs were interviewed that seek to simplify the burden of fundraising and program management for safety net programs.

KNOWLEDGE BASE, TECHNOLOGY AND EVIDENCE BASE

Chapter 5 will address the need to incorporate evidence-based practice into the delivery of oral health care. What is important to note in preparation for this discussion is how few programs are currently using this approach. Only a few program staff interviewed during this study knew what evidence-based dentistry means, and of these, even fewer are actually conducting such programs. As well, few programs noted use of information technology to assist them in tracking patient outcomes, program goals, or to access information on new technology or clinical advances. Teledentistry is one example of use of new technology, but this area has yet to be tapped for its enormous potential to improve service delivery and dissemination of information.

POLITICAL WILL AND ISSUE EXPOSURE

Dentists and members of the dental community are rarely seen as change agents in the process of creating a better health care system; "dentists are not proactive, they're reactive." Much of this may be due to the incentives within private dental practice to promote the current system. Recently, spurred by the Surgeon General's report, many groups are finding ways to promote oral health at the systemic level. Yet this is not an organized effort. Dental safety net programs are not well organized, and therefore lack the power to effectively advocate for their constituents. While many programs mentioned educating individuals on personal health and health care, none mentioned teaching individuals about their rights as oral health consumers.

DENTAL EDUCATION

For change to occur at the systemic level, providers must be educated early in their career to meet the needs of underserved communities. As the previous section on dental education discussed, incremental steps are being taken to encourage individuals with a propensity to care for underserved communities to enter the dental profession. Yet, medicine continues to be ahead of dentistry in its programs to recruit and retain individuals from diverse backgrounds. Similarly, the dental profession is behind the medical field in creating a curriculum that addresses issues such as access to care, cultural sensitivity, and commitment to communities. The IOM and Pew Health

Professions Commission both identified these issues in the 1990s, and released recommendations for reform. The ADEA is now beginning to look at issue of access, but dental curriculum reform is slow coming.

PRIVATE INSURANCE INDUSTRY

At the systemic level, the private insurance industry has not assumed the financing of care delivery that they have in other aspects of health care. As critical as our society may be of managed care and other types of private insurance, the insurance industry plays a critical role in promoting case management and evaluation. Dental professionals have been successful in maintaining their autonomy, separating the dental reimbursement process from the way care is delivered. Many times, this is a disservice to the patient, the dentist, and the insurer. For example, reimbursement by procedure rather than diagnosis creates incentives to deliver inappropriate care at potential cost to the insurer, the consumer and, in cases where public insurance is involved, to society. Chapter 5 discusses the need to incorporate evidence into the dental practice. The private insurance industry can assume more responsibility for promoting an evidence-based model.

SUMMARY

The number and scope of safety net programs is on the rise due to the increased focus on oral health issues and new money for dental programs and expansion. Creativity and innovation in some of these programs, especially considering the funding restraints they face, is quite impressive. However, current efforts are not enough, and it is unlikely that simply expanding the safety net in its current form will increase access for underserved populations in a sustainable manner. Given the current lack of State Government leadership in dental health (other than through the Medicaid program), either in Prevention Services or MCH, local community-based solutions and advocacy are crucial for reducing existing access problems.

Much has been written lately of developing best practice guidelines for oral health care. During our program interviews we attempted to find “best practices” based on any forms of evaluation, especially any measured health outcomes. Unfortunately, the information

needed to conduct that kind of comparison between programs is simply not available. Evaluations have only been based on programmatic goals, if they are done at all. Without standard criteria for evaluation, comparison of efforts is difficult at best.

Current programs and policies do, however, provide a base upon which to build additional efforts in research, program expansion and improvement, and community outreach. There is no one answer to the oral health problems California currently faces. While changes and initiatives at the broadest state and federal level are necessary to enable local service delivery, any local strategy is going to depend on local conditions. It is important to consider a community's population mix, cultural and economic situation, barriers to accessing care, and supply of actual or potential dental resources in order to choose an appropriate strategy for addressing a population's oral health needs. For example:

- If a community has many low-income children and few private practice dentists, they might consider setting up a school-based screening and sealant program and recruiting a dental hygienist to staff the program in tandem with local providers.
- If an urban community is concerned about its elderly and has plenty of local dental resources, they might consider starting a mobile dental program to specifically serve the institutionalized elderly.
- If a rural community is relatively isolated with a low-income or migrant population, but has a local medical clinic where many of these people get care, a logical alternative is to add a dental component to the community clinic, thereby expanding access to care in an existing setting.

As these initiatives progress, they may encounter systemic barriers such as workforce supply issues, and state financing restrictions. These lessons learned locally must be translated upward to help determine policy for enabling service delivery improvements, thereby working towards a more comprehensive *system* for oral health care.

The next chapter discusses some of the "future directions" for oral health service delivery. We draw from the literature and a few program examples to highlight the themes and innovations of a system where best practices can start to be measured.

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Chapter 5
Evidence-Based Dentistry

Evidence-Based Dentistry (EBD)

This chapter focuses on our theme of basing clinical practice, policies, and funding on evidence-based approaches. We provide an overview of evidence-based dentistry, why an evidence-based approach is needed, what the status is of EBD in the U.S., and how these approaches can help to frame efforts in California to document specific access problems and inequalities and reform the oral health care system.

WHAT IS EVIDENCE-BASED DENTISTRY?

In the last decade, the concept of evidence-based health care and evidence-based dentistry has emerged as a catalyst for the development of clinical practice guidelines and new avenues for health services research. The goal is to facilitate timely translation of research findings into clinical practice, which results in improved oral health outcomes. Rapid advances in the biological sciences, information technologies, and new diagnostic and treatment technologies are prompting researchers and healthcare administrators to promote a decision-making process based on the integration of new external evidence for effectiveness with clinical experience, expert opinion and personal judgment.

The Evidence-Based Medicine Working Group at the University of Illinois at Chicago defines evidence-based medicine as "an approach to practicing medicine in which the clinician is aware of the evidence in support of clinical practice, and the strength of that evidence." This approach involves:

1. Converting information needs into focused questions
2. Efficiently tracking down the best evidence with which to answer the question
3. Critically appraising the evidence for validity and clinical usefulness
4. Applying the results in clinical practice
5. Evaluating performance of the evidence in clinical application.

Evidence-based medicine, originally developed by internists, is important to all aspects of health care and is now being embraced by other disciplines. Evidence-based dentistry incorporates the judicious use of the best evidence available from systematic reviews

when possible, with knowledge of patients' preferences and clinicians' experiences to make recommendations for the processing of the right care, for the right patient, and at the right time (Ismail 1999). Although the field of medicine is ahead of dentistry in developing clinical guidelines and applying evidence based care to clinical practice, recent efforts by a number of groups have resulted in 1) research on evidence-based dental procedures as well as systems approaches to evidence-based care, 2) dental public health leaders promoting this concept for publicly funded programs, 3) development of a few clinical protocols, and 4) continuing education courses to increase professionals' skills in this approach.

WHY DO WE NEED AN EVIDENCE-BASED APPROACH?

Insufficient scientific and professional attention has been given to justification for dental treatments and their health outcomes, despite a growing public awareness of this deficiency (Chalmers 1993). Traditionally, most clinical decision-making and reimbursement for services has been based on clinicians' experience and expert opinion rather than on critical review of the research. The new journal, *Evidence Based Dentistry*, published as a supplement to the *British Dental Journal*, contains numerous articles summarizing procedures that are performed with little justification for their effectiveness (e.g., removal of pathology-free third molars) and those that are effective but not widely used (e.g., fluoride varnishes). There is a gap between current dental knowledge derived from research and the clinical care that is practiced by dentists and dental hygienists. This may in part reflect differences between researchers (producers of research), who work primarily in government, industry, or universities, basic science laboratories, and clinicians (users of research), who primarily work in private practice or in various types of dental clinics. These two groups generally differ in professional interests, years of postdoctoral education, attitudes toward lifelong learning, commitment to reading the scientific literature, and orientation to personal and professional goals and fulfillment. These differences cause a major communication and credibility gap.

Dental faculty, in theory, act as a bridge across this gap. Most are required to engage in research or are at least exposed to recent research findings. They pass this knowledge on

to undergraduate and graduate students through changes in curricula and engaging students in research projects. They contribute to the scientific literature and serve as expert speakers at continuing education courses. Some also maintain part-time private practices in the community.

Dental public health professionals also act as a bridge across the gap, particularly from a policy perspective. They serve populations at highest risk for oral diseases and try to use public health measures that will benefit the most people and be cost-effective. Researchers, in many cases, prefer to partner with public health programs who have large patient populations with varying levels of disease to test the efficacy of various products or preventive measures. Therefore, many dental public health professionals are more aware of scientific advances, can advocate for early adoption, and can promote development of policies that favor their use and reimbursement. Professional organizations such as the American Association of Public Health Dentistry (AAPHD) and the Behavioral Sciences Section of the International Association for Dental Research (IADR) act as a forum for the interface between researchers and public health professionals. Dental insurance companies also can bridge this gap by funding clinical and actuarial research. They can have a positive influence on analysis and provision of cost-effective procedures as they are the single largest repository for dental claims and cost data.

WHAT IMPACT DOES THIS SITUATION HAVE ON ACCESS TO PREVENTIVE CARE BY UNDERSERVED GROUPS?

Diffusion of innovation research (Rogers 1983) has demonstrated that it takes at least ten years for practitioners to adopt new techniques or procedures. Additional time lapses before third party payors reimburse for the procedure or before the public (employers, unions) negotiates for coverage of the procedures. Use of dental sealants by the dental profession in the U.S. is a good example. Sealants were proven effective for caries prevention in the 1950's. California dental schools were teaching placement of sealants in the 1970's. Denti-Cal did not start reimbursing for sealants until 1994. Sealants were not a covered benefit for State employees until 1999 (Isman 2000).

The process for FDA and ADA approval of dental and medical products also delays use of preventive and treatment measures by clinicians and coverage by third party payors. Materials and procedures used in Europe and Scandinavia for prevention of dental caries and gingivitis have taken years to gain FDA approval. Two examples are chlorhexidine rinses and fluoride varnishes, now considered key components to early childhood caries prevention programs.

Public health programs tend to be earlier adopters of preventive measures than private practitioners. Low-income groups with higher risk for disease, who seek care in clinics, therefore, have benefited from sealants and fluoride varnishes sooner than persons in private practice with dental insurance or those who pay out of pocket. Sealants have been widely used in school-based programs and public health clinics for over 20 years. In the early 1990's the Indian Health Service initiated caries prevention programs using fluoride varnishes in young children and xylitol gum in older children, as well as antimicrobial therapy for periodontal disease in diabetics. Chlorhexidine has been used in institutional settings to reduce gingivitis in chronically disabled individuals (Al-Tannir and Goodman 1994). Early adoption, however, depends on dental public health leaders who believe in evidence-based care and keep current on new research, and who can convince clinicians, administrators, and insurers to incorporate evidence-based innovations that will improve oral health in a cost-effective manner.

" Being on the *cutting edge* does not refer to the dental burr."
Phil Weinstein (11/30)

Adoption of procedures by private practitioners also requires professional leadership from organized dentistry/dental hygiene by respected members of the community or dental schools. Generally these are the individuals who have read the scientific literature, attended courses on the topic, used the approaches with their patients, and carefully documented the outcomes for patients. This clinical validation is what convinces other clinicians to change their practices. Third party payors may need another layer of evidence—cost-effectiveness, before they change their reimbursement policies, although they don't necessarily apply this criterion to most of what they already cover.

The following case study shows how a few visionary public health researchers and administrators in North York (Toronto) have implemented an EBD system in their public health clinics and are gradually changing practice norms in private sector providers who see their patients.

Case Study 1: North York Dental Public Health System

In 1978, after working as a clinical dentist in a public health clinic with non-English speaking immigrants, Dr. Pat Main became an administrator of a number of public dental clinics under the North York Health Department, Ontario, Canada. She and others developed a quality assurance program to answer the question, "Are we providing quality care to our clients?" Based on findings from site inspections, chart audits and literature reviews, a quality assurance manual was developed and funding received from the Ministry of Health to do collaborative health services research with the University of Toronto.

Over the next ten years the team conducted a major review of the literature on use of fluorides, dental sealants, space maintainers, radiographs, when to place an initial restoration, and various infection control procedures. These reviews were compared to the existing practices in the clinics and then developed into clinical guidelines and quality assurance reports **(**see their QA reports 1,-5, 8 and 9 in the references**.)** A multidisciplinary group participated as reviewers before the guidelines were finalized and implemented. The quality assurance reports contain:

- an overview of the clinical problem
- summary of the evidence for efficacy
- comparison of relative outcomes and costs
- relative importance of the potential outcomes
- evidence-based recommendations and minority views
- references

The following paragraph reflects their evidence-based approach:

"…sealants should be preferred over waiting for the tooth to decay and providing an amalgam since the same or better outcomes can be provided with lower labor costs.

This only holds true as long as the accuracy of the predictive measures are high and few efforts are wasted on false positive predictions, and few teeth decay because of false-negative predictions" (Jokovic, Leake et al. 1999, p18).

A second wave of research assessed private practice dentists' knowledge and practice patterns in relation to the Health Department's dental practice guidelines and also assessed the dentists' opinions of quality assurance. (Woodward, Leake, Main and Ryding, 1996; Woodward, Main, Leake, Lewis and Miller, 1996) The questionnaires asked:

1. reasons dentists start to use new and different practices and materials,
2. what other factors besides diagnosis and prognosis they use to make decisions on treatment options, and
3. how much time they spend in care.

Analysis of responses revealed areas where the clinicians were not following guidelines and whether non-compliance was due to lack of knowledge or other factors. This information enabled the administrator to develop appropriate methods for assuring compliance.

The Quality Assurance survey provided the following interesting data:

- Most of the dentists felt that standards of care should first be based on the experience and knowledge of practicing dentists, next on expert opinion, and then on research in journals.
- 40% felt that practice guidelines and standards of care promote litigious patients and create unrealistic expectations.
- Not many dentists felt that quality assurance should involve an evaluation of patient satisfaction.

To get more practitioner buy-in to clinical guidelines, North York Health Department sponsored a workshop for practitioners to participate in a guideline development process. This was also a way to test and gather feedback on the guideline process they had used. This process was extremely effective in:

1. getting the regulatory process committed to requiring the guidelines,

2. eventually converting their prime opponent to EBD (a leader in the dental association) into a proponent who is now sponsoring a major national EBD course in January 2001,
3. interesting the dental consultant group that reviews plans for insurance companies in the guidelines.

The other major inroad they have achieved is use of diagnostic codes to track clinical outcomes and patterns of care. These are now being integrated into the dental school curriculum, along with a case scenario approach to teaching EBD. Leake, Main and Sabbah (1999) recently disseminated this information for use by other researchers.

WHAT ARE SOME BARRIERS TO IMPLEMENTATION OF EBD?

Richards and Lawrence (1998) note four problems of introducing evidence-based dentistry:

- amount of evidence available
- quality of the evidence
- dissemination of the evidence
- clinical practice based on authority rather than evidence.

Other challenges to successful implementation of the EBD approach include:

1. inadequate preparation of dental/dental hygiene faculty for teaching and using the approach with undergraduate and graduate students,
2. motivating practicing clinicians to acquire the skills and interest to read and critically review the scientific literature,
3. convincing practitioners to base their practice on procedures where there is proven evidence of effectiveness,
4. asking clinicians to document and evaluate the outcomes of their clinical care,
5. convincing third party payors to structure reimbursement systems around accepted practice guidelines,
6. implementing standard diagnostic codes that are acceptable to public health and private practice clinicians and insurance companies.

Advantages of EBD, according to Richards and Lawrence, include:

- improving the effective use of research evidence in clinical practice
- using resources more effectively
- relying on evidence rather than authority for clinical decision making
- enabling the practitioner to monitor and improve clinical performance.

Potential solutions to these challenges, taking into account the advantages, will be discussed later in this section.

WHAT IS THE FOCUS OF CURRENT RESEARCH?

NATIONAL GROUPS

Recent meetings of the American Public Health Association, American Association of Public Health Dentistry, National Oral Health Conference, National Institute for Dental and Craniofacial Research, American Association for Dental Research and other groups have featured sessions on evidence based approaches. Two continuing education courses are planned for 2001: a 2-day course in Winnipeg, Manitoba in January 2001 and a 5-day course in Oxford, United Kingdom in February 2001. Some groups such as APHA have promulgated EBD policies. A portion of APHA's policy reads:

- "Realizing that misapplied fee-for-service systems may promote overtreatment and that poorly organized capitated systems may lead to underprevention, and
- …Knowing that underprevention and overtreatment of oral disease involves retreatment and cost escalation throughout the lifetime, to maintain functions of chewing, speech, facial expressive communication and appearance, and
- Realizing that the burden of oral diseases, and consequent pain and infection remains significantly higher in those without access to care, and
- Concluding that the forty percent of U.S. adults and children who have inadequate access could improve their accessibility and oral health outcome under more effective public health programs, and that the quality of oral health care generally would benefit from systematic, evidence-based review…, APHA
    1. Supports the principle and application of evidence-based dental services; and

2. Encourages the collection, review, dissemination and policy applications of knowledge supporting or negating the efficiency and cost-effectiveness of specific forms of dental care; and
3. Supports federal agencies…as well as state health agencies and the health industry in adequately funding systematic reviews and research projects which provide further evidence of efficiency and cost-effectiveness of oral health care; and
4. Encourages dental professionals, consumers, private and public health care financing agencies, and state licensing authorities to adopt an evidence-based approach to dental services, in order to rationally control costs, help assure quality and favorable outcomes, and extend more affordable dental care to a wider public; and
5. Supports dental care programs for underserved populations, and urges their inclusion in evidence-based care research and development." (APHA 1997)

CDC has joined forces with dental schools, professional organizations, schools of public health and NIDCR to apply public health tools to improve oral health outcomes. As part of this effort, CDC supported seven oral health projects in 1999 in the following Prevention Research Centers:

- University of Alabama at Birmingham
- University of California, Berkeley
- Yale University
- University of Michigan
- Columbia University
- University of North Carolina at Chapel Hill
- University of Texas—Houston.

Groups that are resources for evidence-based dentistry are listed in Figure 5.1.

Figure 5.1 Examples of Evidence-Based Groups

Cochrane Oral Health Group (Cochrane Collaboration)
Center for Evidence Based Medicine, Univ of Illinois at Chicago
Workgroup on Evidence Based Dentistry, Univ of Illinois at Chicago
Foundation for Accountability
National Center for Quality Assurance (NCQA)
Agency for Healthcare Research and Quality
Scottish Dental Practice Based Research Network, Dundee
University of York, NHS Center for Reviews and Dissemination
Center for Evidence Based Dentistry, Oxford
Office of Evidence Based Dentistry, Harvard School of Dental Medicine

The Cochrane Oral Health Group has at least 10 reviews completed or in progress, including use of fluorides and pit and fissure sealants. Professional dental associations, government agencies and other groups such as the US Preventive Services Task Force, also conduct reviews and promulgate algorithms, protocols, and guidelines. Evidence-based protocols should summarize the strength of the evidence for the effectiveness of a clinical practice in relation to risks and costs (Fletcher and Fletcher 1998). Most of those developed by professional dental groups in the U.S. have not met these criteria (USDHHS 2000).

Performance Measures and Outcomes

A variety of protocols and performance measures are emerging from recent research. Most outcomes have looked only at tooth mortality and morbidity and people's use of services. Much of this is too clinical and procedure-oriented to be of any use to program planners and policy-makers. Bader, Shugars, White and Rindal (1999) looked at standardized measures to evaluate effectiveness of care and use of services that could be calculated using a dental or managed care plan's administrative data. They noted that although these measures are available for immediate use, changes are needed in plans' data systems and data collection policies because most measures depend on diagnostic information that is not being recorded. In 1998 an expert panel formed by the National Center on Quality Assurance (NCQA) was established to identify and evaluate pediatric

oral health performance measures, particularly for use in managed care plans and programs providing care to Medicaid and SCHIP populations. They concluded that few measures that meet contemporary criteria exist for pediatric oral health and recommended that *immediate* efforts be focused on:

1. revising the annual dental visit HEDIS measure,
2. revising the use of dental services by children measure to provide information on access, use of services, and effectiveness of care,
3. dental sealant ratio (ratio of occlusal sealants to occlusal restorations)

and that *future* efforts be focused on:

1. assessment of disease status: % of all child enrollees who have had their periodontal and caries status assessed within the past year,
2. new caries among caries-active children: the proportion of all caries-active child enrollees who receive treatment for caries-related reasons within the reporting year,
3. new caries among caries-inactive children: the proportion of all previously caries-inactive child enrollees who receive treatment for caries-related reasons within the reporting year,
4. preventive treatment for caries-active children: % of all caries-active child enrollees who receive a dental sealant or a fluoride treatment within the reporting year
5. pediatric oral health survey that asks about access, regular source of care (availability), timeliness, involvement in decision-making, overall satisfaction with care, and level of unmet needs (add to existing CAHPS surveys),
6. value of services: look at either the proportion of a plan's premium dollars spent on clinical services, or a plan's actual expenditures for clinical services per member per month (Crall, Szlyk et al. 1999).

A classification scheme of outcomes of oral health care by Bader and Ismail (1999) is summarized in Table 5.2.

Table 5.2 Classification of Outcomes of Oral Health Care

Dimension	Example
Biological status	
Physiological	Inflammation
Microbiological	Oral microflora composition
Sensory	Presence of pain
Clinical status	
Survival	Loss of tooth or tooth surface
Mechanical	Smoothness of margins
Diagnostic	Presence of caries
Functional	Ability to chew
Psychosocial	
Satisfaction	With treatment
Perceptions	Oral health self-rating
Preferences	Values for oral health
Oral health-related quality of life	How does health affect daily life
Economic costs	
Direct	Out-of-pocket payments
Indirect	Lost wages

(Bader and Ismail 1999)

The authors note that outcomes are based on the following perspectives:

- consumers
- providers
- purchasers
- society
- dental health planners and regulatory agencies
- educators
- researchers

These categories are similar to those used in this report to analyze barriers and frame recommendations. When analyzing barriers to care and issues that will improve access, the following outcomes can be used to measure changes:

- awareness and knowledge
- attitudes and behaviors
- acceptability of procedures, services, and materials (satisfaction)
- timeliness of diagnosis and treatment
- perceptions of risks/benefits of dental procedures and preventive measures
- oral health measures

In addition, the literature related to oral health of adults and elders looks at perceived quality of life as a multidimensional concept that reflects domains such as opportunity, perception, function, impairments, and duration of life (Gift and others 1996). Quality of life indicators show a person's capacity to perform desired roles and activities, such as being able to chew favorite foods, talking and smiling without worrying about their dentures coming loose or without large gaps between their teeth. CDC's Behavioral Risk Factor Surveillance Survey (BRFSS) is beginning to use some quality of life questions in their oral health module.

Awareness, attitudes, and knowledge have been used most often to track outcomes of health education and outreach. Behaviors have been noted primarily through self-report or by documented patient visits in charts or from insurance claims. Little observational research has been conducted, so data on actual outcomes is scarce. More longitudinal and retrospective studies are needed of patterns of care related to demographics, oral health status, perceived needs and attitudes (Payne 1996). These studies would provide a more detailed analysis of access problems and inequalities in health care.

Locker (1994) reports that not enough quality research has been conducted on patients' perceptions of their oral health and the care that is provided by dental professionals and oral health outcomes. In the traditional practitioner/patient system, practitioners define the patients' needs and how to manage them, while patients are only involved as recipients of advice. He feels that dentists attach little significance to what patients have to say. Bader and Ismail (1999) report that patient satisfaction is strongly related to the interpersonal qualities of the dentist rather than to actual outcomes of the care they receive.

"Despite hundreds of studies involving thousands of individuals, we know remarkably little about how best to promote oral health."
Kay and Locker, 1997 pg. 3

EBD and Oral Health Promotion

Kay and Locker (1997) performed an extensive review of the oral health promotion literature. They arrived

at a number of key findings, some of which are summarized here:

1. There is no evidence of effectiveness of dental health education programs aimed at caries reduction if they don't involve use of fluoride agents and sealants (for permanent teeth); fluorides and sealants prevent initiation and spread of dental caries.
2. School-based group health education to improve oral hygiene has not been shown to be effective, while 1:1 clinical chairside interaction has been proven effective.
3. Plaque reduction levels are not sustained over time without reinforcement; reduced plaque levels usually lead to reductions in gingivitis.
4. Dental health education can increase knowledge levels, but we need a standardized measurement instrument to really prove this.
5. Changes in knowledge don't often translate to changes in behavior; however, there is an ethical responsibility to impart knowledge irrespective of what people do with it.
6. Effects of oral health promotion on attitudes are unclear because there is no standardized way to measure this.
7. It is difficult to determine how effective oral health promotion is in decreasing consumption of cariogenic foods; most studies measure changes in knowledge levels or reported behavior rather than actual behavior.
8. There is no evidence of the effectiveness of mass media programs designed to improve oral health, although tobacco-related efforts have reduced tobacco use, which then impacts oral health.

This may change with more sophisticated multimedia options and better ways to track the impact of media messages.

BEST PRACTICES APPROACH

Another approach to EBD is the concept of "best practices". Programs developed using best practices are based on standards and consensus statements that offer clients the latest knowledge, technology and procedures (Zemelman, Daniaels et al. 1993). Consensus statements are based on documentation from national reports, research summaries and professional association position papers. Through this process, programs identify

principles, assumptions, and theories that characterize modes of prevention or service delivery, and ways that people and agencies can work together to provide the best services. The goal is to look at strategies to improve best practices, reduce barriers to care and improve outcomes of care. This approach has been used extensively in the field of education, but only recently is the term being applied to dental programs, in most cases inappropriately. The American Academy of Pediatric Dentistry (AAPD) has received a 4-year grant to identify best practices in oral health care targeted at SCHIP/Medicaid eligible children of preschool age. The criteria used for grant review were developed after the RFP process, and relate to efficient use of resources, cultural competence, replicability, using an integrative approach, and sustainability.

ASTDD is also collecting examples of Best Practices administered by state and territorial oral health programs that aim to improve oral health outcomes of individuals and communities, improve administrative efficiencies, and reduce costs in dental health care. In addition to identifying best practices, they will provide administrative, service and budget guidelines for implementation; provide a more supportive environment that leads to further development of best practices; and provide a tool to inform state health officers and state policy makers about what is possible and what it will take to develop best practices. An advisory committee will be developing the review criteria, and a national group of experts will be used for review.

Maybe a more appropriate term to use in relation to programs that are effective in addressing access problems is “field lessons”. The California Center for Health Improvement recently released “Field Lessons: Strategies to Support California’s Children and Families First Act” to highlight oral health data and some innovative programs that target the 0-5 age population (CCHI 2000).

IMPLEMENTATION

Implementation of an EBD model into a clinical setting could include a package of “benefits and services” based on each person’s age, risk for specific oral diseases, and diagnosis of existing conditions. This orientation is different from the current system,

where benefits packages consist of various levels of procedures that don't really relate to the patient's oral health status, their risk for disease, or their actual diagnoses. Included in such a package would be procedures to document each person's baseline oral health status, an assessment of their risks for various oral diseases and conditions, what options were chosen to reduce these risks or to minimize the impact of the diseases or conditions, how well the options worked, and what factors contributed to their success or failure. This approach uses outcomes measures rather than just a listing of services. Risk assessment and risk reduction would be documented separately for caries, periodontal disease, malocclusion, oral cancer, oral injuries, and other oral conditions. Successful implementation of this approach requires buy-in by clinicians, a transition period for implementation, and careful documentation to enable measurement of outcomes and quality of care. Economics is also important as the next case study exemplifies.

Case Study 2: DentiQuest: Massachusetts Delta Dental Plan Risk-Based Clinic

Purpose and Sponsorship

Delta bought a clinic to pilot a program for the Massachusetts Public Employees Fund, which covers 30,000 employees. They are trying to offer the Evidence Based Care Model to their employees as an option. This clinic pilot is a 3-year study to show effectiveness of the method. The capitation fee is $8/employee/week for dental and vision services. The clinic will provide primary care services and some specialty care. If additional specialty care is needed, their members are referred to a closed plan and covered through a fee-for–service arrangement. Although the plan is optional for employees, those who enroll have to remain with the plan for at least a year.

Marketing and Enrollment

To market the new option, Delta did a targeted mailing to employees in zip codes within a 30 mile radius of the clinic (about 400 employees). They are hoping for 40 of these families to enroll in the first year. If one member of the family signs up, the rest of the family members will have to enroll.

Clinical Program

Clinic hours include Saturdays and some evenings to reduce some access barriers. They are using a risk assessment software system designed by the University of Florida, the Oral Health Decision Support System. Notations made in the dental chart are linked to the software. Services focus on primary and secondary prevention—remineralization, varnishes, xylitol gum, Prevident 5000+ toothpaste. Children are seen as soon as the first teeth come in. They have established 5 unique procedure codes, e.g., placing a sealant over a restoration, and will track usage and outcomes in terms of oral health. They do not have any plans yet for community-based outreach.

Challenges

One of their biggest challenges is changing the awareness and knowledge of practitioners outside the clinic system and trying to determine the costs associated with the new procedures. Outcome measures will look at utilization patterns and needs of the patients and compare clinicians' services with other providers. A grant has been submitted to fund the evaluation component with Harvard. Their key question is whether this approach is economically feasible and competitive with the more traditional approaches.

HOW CAN AN EVIDENCE-BASED APPROACH HELP TO ANALYZE THE CURRENT SYSTEM IN CALIFORNIA AND LEAD TO REFORMS?

The following questions and considerations may help researchers, policymakers, and philanthropists frame future research and funding agendas.

- Are computerized decision-support systems appropriate for use in dentistry? They work well in large medical practices such as hospitals and managed care clinics, but will they work in single practitioner private offices? Who will determine compliance?
- Can dental recall systems for preventive care or follow-up be individualized and based on a risk assessment model so that recall for management of caries is not automatically combined with recall for management of periodontal diseases or other diseases reimbursed in the same manner?

- A combined, coordinated effort to educate funders about EBD is needed; current efforts are fragmented and repetitive.
- What incentive systems will motivate patients to improve their oral health and motivate providers to document improvements in health?
- Can we implement more useful documentation and tracking systems that provide individual longitudinal oral health data and systems data? Office staff and providers will need more training and computer capability to use these systems.
- How can EBD researchers partner with clinic managers, Board/community representatives, clinicians, and funders to create viable evidence-based models?
- Can we create a cooperative process among third party payors, dental care administrators, clinicians, dental faculty and health services researchers to develop clinical practice guidelines, where a certain level of consensus is reached and factors outlined that might change the clinical pathways for certain patients? Development and acceptance of practice parameters and clinical guidelines might then reduce the frequency of and the need for preauthorizations for certain procedures. This might reduce administrative bottlenecks and paperwork that hinder timely provision of care and prompt reimbursement. It would also enable creation of more consistent and informative patient information on preventive measures and treatment options.
- Diagnostic codes have been developed in North Carolina, the UK, and Toronto, for example, and the ADA has contracted with a group for this purpose. Yet it is not known who is trying to use these codes or what the outcomes have been. How can this information be disseminated to facilitate critical review and wider adoption?
- Can we use an interdisciplinary (or at least a multidisciplinary) team approach to develop and evaluate evidence-based approaches? Within dentistry this could include NIDCR, ADA, ADHA, AAPHD, AADR, and dental specialty organizations. Involving other groups representing behavioral sciences, health services research, marketing, etc., would, however, provide a broader perspective.
- Can we develop a training approach that incorporates the process of guideline development or other evidence based outcomes so that participants have hands-on

experience with the process, including a needs assessment prior to training so that participants have input into the training process.

- When disseminating EBD information to clinicians, how can we accommodate their concerns about "lack of time" for continuing education?
- Who can fund establishment of EBD Research units within dental schools, managed care groups, or large public health programs that can serve as a resource to other departments or practitioners in the community? AEGD or GPR programs are beginning to take this approach.
- How can we change the culture of the learning environment, starting in dental education, where students are encouraged to ask questions and to challenge traditional ways of thinking or performing care? This has been suggested in early IOM and PEW reports, and is gradually being addressed by ADEA.
- What are the best pathways for introducing EBD approaches to public delivery settings? Private practice?
- Are there opportunities for quick wins where EBD can solve a pressing problem in either the private or public sectors?
- What might private funders do to advance EBD what type of incentives and where?

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Chapter 6
Overall Themes

OVERALL THEMES

Despite the presence of a dental safety net, large gaps in access to care and significant disparities in oral health remain. However, a strong foundation exists for bridging the gap. Programs and policies aimed at addressing these barriers will enhance their chance for success if they 1) use evidence-based care delivery models, (risk assessments, protocols, clinical guidelines), 2) promote professional leadership and community partnerships, 3) reinforce the concept of interdisciplinary training and care delivery, and 4) evaluate the strength and efficacy of efforts on a regular basis through monitoring and tracking.

Thus far, this report has provided a theoretical foundation for addressing issues of access to and quality of oral health services, described the current context for dental care delivery, and analyzed the barriers to dental care. It has examined what is lacking in safety net and traditional dental practices in terms of evidence-based practice and integration with other health services, and given examples of models that have been tried. In this section we discuss the themes that cut across the multiplicity of issues and problems that characterize California's oral health care system. New strategies must take these themes into account if they are to be successful. We also suggest new innovations that could be used in addressing each of the issues and problems. In determining what might be an "innovative" approach, we have drawn from our research and the literature, as well as from approaches taken in other health and social disciplines.

COMMUNITY AND INSTITUTIONAL PARTNERSHIPS

A theme in all of the successful models we found was the use of community and institutional partnerships. For example, community dental clinics partner with other local health agencies for referrals, mobile dental vans partner with local school districts to provide sealants, and dental education programs partner with a homeless dental clinic for student service learning rotations. Dental associations have partnered with state agencies to help understand barriers to participating in Medicaid and develop better incentive

programs. In the ABCD program, the state dental foundation, the Medicaid agency, the dental school, local dentists, and community social workers all partner to coordinate care and increase access for rural residents (Milgrom, Hujoel et al. 1999). Clearly partnerships are key to improving access for underserved populations. Some of the lessons show:

- When developing outreach to underserved populations, oral heath programs should use community-based solutions, partnering with local agencies that already interact with those populations and have their trust.
- Faculty should partner with community sites in dental education. This fosters better relations between communities and academic institutions, and provides exposure for students in working with underserved populations.
- Dentists, allied dental professionals, and their professional associations will be most effective in partnerships if they participate as coalition members, actively participating in efforts to improve a communities overall health and well-being, not simply as oral health experts informing other efforts.
- Needs are identified and solutions are addressed at the local level. Local dental societies will need training in issue management and program development to more effectively participate in community solutions.

LEADERSHIP AS A CATALYST FOR CHANGE

A resounding theme across every program and effort to address the changes that need to take place, is that it takes strong and devoted leadership to make any progress. Many community programs would not exist but for a dedicated leader or advocate to garner the needed resources and develop the partnerships needed to keep any program running. Community leadership and leadership development efforts are lagging in dental education and in dental professional associations. Many dental faculty are isolated from the community and most do not have a public health or community orientation.

Change in health care has often been stymied because practitioners, educators, insurers and policy makers have been unable to work effectively together. Hostility and accusations across sectors is common. To remedy this situation educators and

professionals will need to recognize new leadership roles and be more willing to work in a collaborative manner. Many of the resources needed to address these barriers in an interdisciplinary fashion already exist. However, they remain dormant because the catalyst of leadership has not provided the context and initial activation to move them forward to address the issues of improving oral health. (O'Neil and Commission 1998)

To advance this leadership several steps should be taken. First, a common agenda of values, future direction, problems to address and context for working together should be established. While this report establishes one version of these it lacks the ability to move to the second step. This will require key individuals from each of the sectors coming together to agree on an agenda for action. It is also likely to require that institutions and organizations be willing to advance these issues even in the face of conflicting interests.

These two straightforward suggestions may seem like insurmountable obstacles. But the reality is that it is only the dental health professionals that will have the interests and commitment to sustain such an effort. The larger and even more confounding problems associated with general medical care will easily distract public policy makers. So, without the commitment and leadership from the dental health professional community, there simply may not be action taken on these issues. More tragically, the opportunity of this particular moment when so many have called attention to issues of oral health may also be lost.

INCREASED AND SUSTAINABLE FUNDING

At the recent Surgeon General's Conference on Oral Health, Dr. Earl Fox commented on how difficult it is to provide seamless health services with categorical funding. Presently, there are too many gaps in oral health funding and service delivery for seamless service delivery in California. The funding mechanisms for safety net programs are difficult to obtain and generally inadequate in their coverage. This report has highlighted a multitude of innovative models for increasing access and improving quality, and suggested further steps that could be taken to enhance and expand current efforts. None of this can be accomplished however, without significant, sustainable funding increases. Although oral

health must compete with many other social and health issues for funding, there are some avenues to consider:

- The Public Health Service (PHS) and HCFA have made it clear that oral health is now a national health priority. This may be an opportunity to get more federal dollars to support existing efforts.
- Federal funds can be and are used for pilot projects; however this is an area where private funds such as foundation dollars can enhance implementation of innovative new models.
- Dental education and professional dental organizations can assume a greater role in providing or obtaining funding and lobbying for basic dental research and the creation of clinical guidelines, standardized diagnostic codes and protocols.

Over a decade ago it was pointed out that the underlying theme for any reform is the need for more money. “Dentistry needs additional resources if it is to bring members of the lower class into private or public treatment centers rather than passively waiting for them to seek care” (Grembowski 1989). The science base is being developed, effective treatments and preventive measures exist, and the political/policy window is open. It will take collaboration and communication, not accusations and resistance, and the time to act is now.

Federal or state funding and innovation may seem strange bedfellows, as this type of funding rarely comes without specific instructions for use, and for services that must fall within current regulatory and licensure guidelines. However, waivers for these rules also only come from the government. The ABCD program is a perfect example of how an innovative model of service delivery was aided through additional funding.

EVIDENCE-BASED DELIVERY MODELS

It is clear that there are few evidence-based care models. Evidence-based health care incorporates a decision-making process based on the integration of new external evidence for effectiveness with clinical experience, expert opinion and personal judgment. In this

process, the best available scientific evidence justifies the treatment. However, the science and technology is developing so rapidly that individual practitioners would be hard pressed to keep abreast of the most current information. Even if they had the time, few have received education in sound statistical methodology or research skills (Burt 1999).

Integrating evidence-based dentistry into education and practice is probably the most innovative change that the dental profession could accomplish. This mode of practice is more advanced in some aspects of medicine, and the dental professions could learn many lessons from medicine's experience. Evidenced-based models specific to dentistry have developed in other countries, and could be adapted to the US system. Research hubs for defining best practices and measuring outcomes could be developed in university settings, and serve as a resource for private practices or dental clinics. They could provide technical assistance in restructuring service delivery based on levels of evidence, and inform payment and financing systems about the most cost-effective methods for preventing, and treating oral diseases and conditions.

INFORMATION TECHNOLOGY

A key to any successful change, whether in health behavior, patient compliance, provider attitudes, or system processes, is having valid, relevant information in a timely manner. Dental services, more directly than medical services, operate under the basic economic theory of demand and supply. A fundamental assumption of this theory is the free flow of information enabling all parties to make informed and unbiased decisions, thereby balancing supply and demand. Much work lays ahead in creating a balanced flow of information about oral health for both consumers and providers. Even harder will be the task of verifying and integrating the "best" evidence and information available.

Innovations in information exchange and dissemination must utilize the full array of technological tools now available, and focus on developing new tools to extract the best

information, tailor it and disseminate it appropriately. The possibilities for significant transformations via information technology (IT) encompass all aspects of the oral health care system. IT will change how 1) consumers get information, 2) dental education is organized, 3) dental practices are managed, and 4) dental public health systems assess, monitor, and share oral health data.

The task of collecting quality data that are usable for multiple purposes is an ongoing struggle. State and federal programs collect oral health information for specific purposes, but rarely fully use their data collection resources to garner other important information. These programs also find it difficult to extract this data for other uses, such as extracting billing information to understand utilization patterns. The insurance industry and public benefits programs collect billing data, which is usually not transferable to meaningful information for oral health services research since billing data are procedure-based. Professional associations and licensing boards collect information on health professionals with varying degrees of accuracy, but often are unable or unwilling to share that information with other agencies. Collecting and maintaining data is an expensive, ongoing process. Streamlining collection efforts and combining resources by organizational collaborations may help make the process more efficient and of higher quality.

IT is also revolutionizing how care is provided. Patients are coming to their providers with pages of information from the Internet on their conditions. There are no standardized mechanisms to discern good versus bad information; health care providers are overwhelmed by multiple challenges in patient communication, and feel an erosion of their authority. Rather than dismissing or blaming the new information technologies, professionals could work in tandem with government and consumer protection agencies to improve the quality of information available.

The IT revolution is fundamentally about streamlining the process of gathering, storing and sharing information in a way that makes it most accessible and accurate. These new processes take time to develop and implement, and require a reorganization of how systems function. However, this is an invaluable tool for the future of oral health care systems.

EXPANDING EXISTING RESOURCES

The dental safety net contains many opportunities for expansion and improvement of existing programs and methodologies. Most programs are so overwhelmed with the task of delivering services that they have little time, energy or resources left for devising new models or evaluating current efforts. Assessing and building upon the current program foundations is the first step in developing new models.

HUMAN CAPITAL: Most dental professionals who are safety net providers are dedicated to their practices and patients, despite being overworked and underpaid. Existing safety net programs can be great learning sites for dental students, with dedicated professionals serving as mentors. The administrators are often seasoned fundraisers and advocates, as they must constantly scramble to maintain the patchwork of funding necessary to sustain the operation. These individuals have a wealth of knowledge to share about their community's struggles and successes to help form new efforts.

PHYSICAL CAPITAL: Equipment and supplies needed to deliver dental services are expensive and in many cases underutilized. Maximizing existing space and equipment is necessary to prevent over-expansion or underutilization of services. Implementing new dental services in existing clinics, health centers and hospitals will also take advantage of existing infrastructure instead of continuing the pattern of separated oral health services. For example, one successful program in Colorado, the Migrant Children's Health Program, uses local dentist's offices during off-hours to serve migrant farm workers and their children.

COMMUNITY PRESENCE: All safety net programs have some level of community participation and visibility. New efforts can learn from successful models, particularly models that are based on community partnerships or that have community-initiated solutions. This is particularly important in a state as diverse as California where communities' needs vary significantly.

INSTITUTIONAL STRENGTH: Most safety net programs are rooted in an institution, a university, government department or health system that provides some resources. Since institutional change is sometimes slow and cumbersome, dental programs probably develop new innovative models and then work to integrate them into the larger system. Larger institutions should promote innovation and create a change-friendly environment.

INTEGRATION: Safety net programs cannot function in a vacuum. They face financial and other resource constraints, and are always pushed to do more for less. Therefore, most safety net programs collaborate with other community institutions to help outreach to needy populations and deliver services more effectively. This could mean integrating dental programs with other community health programs, working with school districts to provide screenings, or streamlining community education with county health department outreach programs. These efforts may require re-envisioning "traditional" roles of each system, but should be evaluated and utilized wherever possible.

Innovative new models to expand available services should be formed by first assessing existing community resources. This does not mean simply finding the dental services available, but assessing the other health, social service, community action, faith community and business groups that bind a community together and provide access to populations in need. In many cases the solutions developed by communities themselves are the most innovative, relevant, and effective in communicating the importance of oral health and well being.

WORKFORCE SHORTAGES

The capacity of oral health practitioners, under the current private practice model, does not seem adequate to deliver care to all Californians in need of it. The safety net programs that focus on direct service delivery universally lament the difficulty of recruiting and retaining providers. Private practices are overflowing with full paying patients, and recent graduates with high debts are drawn, understandably, to the profits to be made in these settings. The dental school closures in the 1980s are now beginning to take their toll, as retirement starts to outpace new graduates. Two strategies emerge as the primary options for expanding the capacity for delivering oral health services, particularly to underserved populations. The first is a more traditional model, and the second requires innovative new strategies, but may prove more successful.

INCREASE THE NUMBER OF DENTISTS AND ALLIED DENTAL PROFESSIONALS WHO WILL SERVE UNDERSERVED POPULATIONS. Targeted programs to increase the number of oral health professionals who will serve the underserved are needed. Simply increasing overall numbers of dentists will not suffice. Despite an oversupply of physicians, the same maldistribution and lack of diversity that we see in dentistry exists in medicine. Any increase in supply should focus as much on the *type* of provider as the *number* of providers. There are a variety of mentor and scholarship programs that focus on increasing student diversity in dental educational programs. Exposure of dental and dental hygiene students to model outreach programs would also encourage their participation in these areas. There are also programs that address distribution of practitioners across the state that could be evaluated and expanded.

California has recently expanded practice for dental hygienists, specifically to increase access for underserved populations. Increasing the number of these providers is another targeted option.

Another mechanism to secure an adequate number of dentists is changing licensure requirements. Each state has different criteria, so dentists and hygienists must reapply for licensure if they move from state to state. A solution to this problem is allowing *licensure*

by credential. New Mexico implemented this policy in 1999 and was inundated with requests for licensure. If a dental professional possesses a valid license by examination from another state or territory, they can get a license in New Mexico with out re-examination. The results of restrictive licensure policy are evident in a clinic in northern California that had an unfilled dentist position for 8 months despite many applications from out-of-state dentists. California does not engage in regional reciprocity for licensing, nor licensure by credential, which creates major barrier for practitioners moving to the state. They must take new exams and under different standards than surrounding areas.

REDEFINE THE ORAL HEALTH CARE WORKFORCE AND EXPAND ROLES OF ALL PRACTITIONERS AS APPROPRIATE. Much of this report has focused on the traditional pathways that exist for expanding oral health services. Interdisciplinary models exist that would require some redefinition of professional roles in the delivery of oral health services, but that provide a model necessary for accessing the communities most in need.

For example, the application of fluoride varnish for young children (age 0-3) at high risk for ECC is one preventive measure that could have positive effects in preventing caries in underserved children. However, most dentists will not see children this young, and most parents are unaware that they should bring their children in for screenings at this young of an age. An alternate approach is to place the varnishes on at-risk children in other settings such as doctors' offices or WIC/MCH offices. Unfortunately state practice acts may restrict hygienists or other health professionals such as physicians or nurses from performing this procedure, despite their interest in providing preventive dental services. Demands of time, tight scheduling and lack of reimbursement may also preclude them from providing these preventive interventions. Additional training is also needed.

The North Carolina medical practice act does not restrict physicians from providing dental services, so with some additional training of pediatricians and nurses through their "Smart Smiles" program they have been able to increase the application of varnishes (Terhune 2000). Hygienists are restricted from independently providing this procedure,

however, because they must work under direct supervision of a dentist. Conversely, in California and Colorado, hygienists have some degree of independent practice, and can apply varnishes, but it is questionable whether doctors or nurses could do so.

The oral health workforce is inadequately prepared and many times unwilling to serve the populations that are in most need of care. New strategies to address this must be a component of all attempts to increase access and improve service delivery. This will require the flexibility of all parties involved. Health professionals must think outside the professional boundaries and traditional view of themselves if they are truly committed to addressing the oral health needs of ALL Californians.

As discussed in the previous section, innovative new models of care delivery are those that involve both oral health professionals and other service providers who can provide oral health education, and encourage patient participation in appropriate oral health practices.

EVALUATION

Interviews with program staff across the country made apparent that few programs had developed and implemented an evaluation plan. Outcomes were mainly reported as number of clients served, number of procedures, or renewal of funding. A review of the literature on barriers to care verified these findings. Very few studies assess oral health needs of consumers and whether dental care met those needs, or if programs have really reduced the barriers to care that the consumers perceived as barriers. Also, programs may report selected data for their entire clinic population, but they may not be able to select for certain variables such as age, residence, payment source or language spoken. Most studies that address access issues stratify their data by ethnicity, when in fact, cultural issues such as language spoken or read, or attitudes toward preventive measures may be more useful for initiating program changes or documenting program effectiveness.

The information needed to compare the efficacy and cost-effectiveness of different safety net programs and financing schemes is simply not available. Evaluation, both of

programmatic goals and health outcomes, is a much-needed component, especially when considering how to expand the use of public dollars for oral health services.

A new innovation in this area would be to develop a system for community programs to devise simple tools for evaluating their programs and understanding how to track and understand their data. An example of a model for assessing and documenting reduction of barriers to care is included as Appendix 5. The model looks at the three categories (consumer, provider, system) and provides a sample of a specific barrier, data collection questions to ask at baseline, data questions to ask at a specified evaluation interval, and outcome measures that address program effectiveness in reducing that barrier.

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Chapter 7
Building from Existing Knowledge, Strategies and Recommendations

BUILDING FROM EXISTING KNOWLEDGE, STRATEGIES & RECOMMENDATIONS

HISTORY

Many different agencies, organizations and research groups are now recommending significant changes in the way that dental care is delivered. Despite the plethora of activities around oral health, the issues that the dental care system is facing are not new. Many of the current recommendations these groups are making have been made in the past. The Pew Health Professions Commission for example, recommends that dental professionals gain experience delivering care to diverse populations in community-based settings, a recommendation that has been made repeatedly in numerous reports released in the 1990-2000 period. Other recommendations specifically address equity in access to care, including increasing the diversity and supply of dentists for public clinics (Grembowski 1989).

SO WHAT HAS CHANGED?

Three factors have contributed to increased visibility and action on oral health issues. First, the magnitude of the problem of oral health disparities has been increasing. Data collected by NHANES III, reports such as Healthy People 2000, and 2010, and a variety of other surveillance mechanisms have shown consistent and even increasing disparities in oral health despite economic prosperity and overall improvements in oral health. This issue is particularly salient in California, with the increase of racial/ethnic populations in the state and the sheer numbers of low-income and migrant populations, all notably underserved.

Second, the last decade has seen an increase in the science base and testing of measures to understand and prevent most oral health problems. The diffusion of this technology has been slow, but the recent advent of the "Journal of Evidence Based Dentistry", and upcoming conferences on EBD in Oxford and Winnipeg portend an increase in awareness and use of evidence-based methods for prevention and treatment of oral diseases. While the ADA has not yet implemented diagnostic codes to help in the disease management

process, many universities and programs have developed their own codes and are teaching their students how to use them.

Third, there is a level of political visibility and will to address oral health disparities that has not existed in the past. During the 1980s, many dental public health programs were significantly reduced. Many states currently do not have a dental director, and public dollars spent on oral health are dwarfed in comparison to medicine. However, the past year has seen a growing level of activity at both the state and federal level. HRSA and HCFA have jointly launched an Oral Health Initiative that seeks to expand oral health activities and integrate an oral health component into many ongoing activities (HRSA 2000). NIDCR and CDC have also initiated a variety of new research, technical assistance and surveillance initiatives on oral health disparities. Local visibility has also increased. Many of California's county Children and Family's Commissions created by Proposition 10 have funded local dental programs or prioritized oral health as a need.

These factors add up to a window of opportunity to start a change process and initiate new programs and policies with the goal of increasing access to care and reducing disparities in oral health. One must be careful, however, not to run in circles and simply repeat the past. While oral health issues have visibility, they are not a funding priority for most states, and must compete with other health care issues. Stakeholders must collaborate and prioritize strategies to reach our goals, and these strategies must be framed in a way that makes them palatable for policy-makers, providers and the public.

SUMMARY OF RECOMMENDATIONS

The recommendations made by various groups over the past decade provide a context for what is currently in the strategic scope of dental leaders and a basis for considering what additionally might be done. These 150 recommendations from over 20 different expert panels, commissions and researchers are reviewed here.

The recommendations can be categorized into 14 areas, based on the target of the recommendation (consumer, provider or system) and the barriers they overcome

(physical, financial, attitudinal, process, and quality). An exhaustive list of the recommendations and the groups that made them is provided in Appendix 6.

I. CONSUMER EDUCATION AND ATTITUDES. These strategies seek to: increase outreach activities (both personal and mass media) that educate consumers on oral health issues, encourage the use of personal oral health services, survey consumers regarding their attitudes and understanding of oral health, and, bring consumers in as advocates and participants in shaping oral health policy.

II. CONSUMER DENTAL COVERAGE AND BENEFITS. These recommendations focus on, increasing private and public dental benefit programs, understanding of these benefits, and provision of third party coverage for preventive procedures.

III. CONSUMER PROXIMITY AND ACCESSIBILITY OF SERVICES. These recommendations focus on funding transportation for patients or using mobile clinics to remove the physical barriers for consumers.

IV. PROVIDER EDUCATION AND ATTITUDES. These recommendations focus on removing the cultural and attitudinal barriers that dentists may have in treating underserved populations and changing provider perceptions so oral health is seen as a component of overall health. They include; increasing diversity by recruiting and retaining minority dentists through outreach such as mentoring programs, fostering a practitioner more accepting of diversity and underserved populations, developing curriculum to foster cultural competencies, using team educational models and interdisciplinary training, and expanding community-based learning.

V. PROVIDER FINANCIAL INCENTIVES. These recommendations focus mostly on increasing Medicaid reimbursement levels, or other strategies related to increasing dentists participation in Medicaid such as providing tax credits, including an inflation factor in rates, and reducing administrative burden. Other financial incentives suggested

are to directly reimburse hygienists, reward disproportionate share providers, and expand loan forgiveness programs.

VI. PROVIDER SUPPLY AND DISTRIBUTION. These recommendations focus on the providers and their incentives or tendencies to work in and with underserved populations. Loan repayment and scholarship programs provide incentives for increasing the supply of dentists in areas of need. The remaining recommendations focus on the redefinition of traditional provider roles and service delivery models, suggesting that increased use of auxiliaries or other professionals would expand the supply and distribution of oral health services.

VII. PROVIDER PROCESSES AND ADMINISTRATION. This set of recommendations focuses on two strategies. First, is the simplification of Medicaid participation through utilization of ADA forms and codes, reducing pre-authorization needed, and simplification of enrollment. Second, are more broadly focused strategies for improving service delivery, including training all health professionals to understand oral health and refer patients, share data and information, and communicate and coordinate efforts.

VIII. PROVIDER QUALITY OF CARE. This set of recommendations includes a wide variety of strategies that are focused on educating providers in different settings and in more evidence-based modes of practice. The focus is on community-based education emphasizing patient centered care and accountability. Provider skill development encompasses basic dental education as well as continuing education, and stresses core competencies, postdoctoral training, and an outcomes focus, particularly the use of scientific knowledge in diagnosis, treatment and prevention.

IX. VISIBILITY AND IMPORTANCE OF ORAL HEALTH CARE ISSUES. These recommendations focus on promoting oral health issues, presumably to acquire more funding for programs. This includes educating and inspiring policy-makers and legislators with well-crafted messages, and creating advisory groups and collaborations to craft solutions.

X. SYSTEM-WIDE PAYMENT AND COST ISSUES. Funding is a fundamental problem for increasing access to care and improving models of care delivery. These recommendations call for increased funding for safety net programs, creation of dental contracts in managed care, and more state support of dental education.

XI. SUPPLY, DISTRIBUTION, AND COMPOSITION OF ORAL HEALTH SERVICES. Despite several decades of workforce planning programs and policies, there still remain significant problems with provider supply, distribution and composition. These recommendations focus on system-wide strategies to adjust overall supply, productivity, and diversity of providers. Strategies include increasing enrollment and diversity in dental professional schools, changing regulations around licensure and scopes of practice, and continued monitoring of the workforce and shortage areas.

XII. SYSTEM-WIDE PROCESSES AND ADMINISTRATION. A large amount of the state's resources go into managing the various programs and funding sources they provide for oral health services. A variety of recommendations have been made to streamline these processes, including simplifying enrollment and benefits, increasing case management and coordination of efforts, identifying best practices that represent a cost-effective use of state money, and enforcing existing regulations.

XIII. SYSTEM QUALITY ASSURANCE AND DATA COLLECTION. Very little work has been done in terms of quality assurance and evaluation of the current system in relation to health outcomes. Much remains to be done in this area, as is made clear by the number of recommendations that fall under this category. These include expanding health services research on oral heath care, expanding research on evidence-based care and oral diseases, monitoring and reporting of oral health status data, evaluating program outcomes, and instituting quality assurance through the licensure and accreditation processes.

XIV. SAFETY NET AND DENTAL INFRASTRUCTURE EXPANSION. The final set of recommendations is for specific programs that should be expanded. These include prevention and service delivery programs, focusing on evidence-based methodology,

community based solutions, integration and interdisciplinary models, dental leadership and partnerships.

These categories represent a decade of recommendations for changing the process for educating oral health professionals, the financing of oral health services, and the models of oral health service delivery. The general sentiment among proponents of oral health is that we have the knowledge of what *needs* to be done. However, until recently the window of opportunity to start a change process and initiate new programs and policies was not open. Therefore, much work has been done to use this new opportunity to the greatest advantage.

FRAMING THE ISSUE

A recent Consumer Reports article painted a grim picture of the medical safety net (2000). Their investigative reporting has uncovered that the poor and underserved have an increasingly harder time accessing basic care for acute and chronic health problems. The ability of oral health to garner additional resources is going to be difficult as resources are increasingly squeezed for basic medical care. Oral health competes for resources not only with other health care priorities but with national public health programs, education and social services. The fact that much of the needed resources will go to programs benefiting low-income and minority groups may prove challenging in today's political climate of anti-affirmative action and welfare reform. Any attempts to advocate for more resources must be well planned and framed within these other important issues to be successful.

Case in point is that the first component of the Surgeon General's framework for action is to change perceptions regarding oral health and disease so that oral health becomes an accepted component of general health (USDHHS 2000). This includes changing public perception, changing policy makers' perception, and changing health providers' perceptions.

In preparation for this report and in anticipation of the opportunity to promote oral health issues, the FrameWorks Institute (Benton Foundation) was asked to prepare a media action plan. They developed "Framing Children's Oral Health for Public Attention and Support" (Morgan 2000). While the focus was only on children, this piece provides an example of the kind of planning that must be done when trying to change perceptions. The report took stock of current public knowledge, likely media coverage of the report, and examined the possibility of public support of policy-oriented solutions.

The approach taken is strategic frame analysis, basically an attempt to understand how and why the media affects our political behavior. The frame is the boundary of the story – and it has three effects: 1) evoking conceptual models, 2) determining whether policy solutions will be accepted or rejected, and 3) signals responsibility (Morgan 2000).

The findings showed that there is little public opinion or deeply held beliefs about children's oral health. This in effect gave the planners a blank slate on which to build support. Their research found that current public opinion is that: 1) Cavities are the primary measure of lack of oral health, 2) responsibility for oral health lies with the parents, 3) there is an expectation that schools will be involved, 4) oral health is part of a larger health picture, and 5) oral health is part of a wider community concern. This example provides important lessons for those interested in increasing access to care for California residents.

In order to garner needed resources and support, oral health proponents need to "sell" strategies that resonate with policy makers' and politicians' current priorities and understanding of the issues in relation to other health issues. These strategies should show evidence of; a) being an efficient and cost-effective use of resources, b) having long lasting benefits, and c) benefiting the overall health and well-being of those targeted, including ability to learn and productivity. The general public and policy makers have many stereotypes and deeply held beliefs regarding traditionally underserved populations. It will be critical to understand the multitude of issues these populations face as well as the perceptions of oral health issues when devising recommendations for change.

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Chapter 8
Recommended Strategies for Change

RECOMMENDED STRATEGIES FOR CHANGE

This report concludes that the loosely knit "system" of oral health care in California is not meeting the needs of many of the state's residents. Unless current trends change significantly, the problem will worsen in the near future.

To meet these challenges, the oral health care system must be equipped to provide care for greater numbers of people, and as cost-effectively as possible. This will require fundamental shifts in almost every dimension of oral health care service: delivery of services, quality assurance and regulation, financing methods, and education of oral health professionals. In order for these changes to come about three important steps must be taken. First, the system must be integrated into larger systems of health care in order to make it more responsive to individual and community needs. The financing of care must be realigned to pay for public and private efforts that have proven effectiveness. Finally, the education of dental professionals and other health professionals must be focused on community health and well-being, as well as individual treatment and private practice.

The immediate focus of this report is on improving access to, and quality of, oral health services for underserved populations. However, long term strategies should seek to accomplish this within a comprehensive system of care. This does not mean creating a dual system of care for rich and poor, one financed privately and the other publicly. A comprehensive system is unlikely to provide total equality of care, but it should provide a basic level of oral health care for everyone. This requires creating a reasonably objective basis for determining the additional service delivery capacity required to provide access necessary care for underserved and vulnerable populations, and for ensuring appropriate levels of public investment in capacity related factors such as capital outlay and workforce development. Lessons learned in other disciplines attempts to address many of the same issues must be applied when designing new programs. The following principles formed the foundation for the report focus and recommendations:

REPORT PRINCIPLES

- Oral health is an essential component of overall health
- Access to dental care is essential for good oral health but not its sole determinant
- Promotion of oral health is a public responsibility
- There should be standards for oral health services
- There are standards for health professionals

Two long-term strategies are suggested for transforming existing dental care systems, public health activities, and education efforts into a more comprehensive "oral health care system" to ensure oral health for underserved populations. The two strategies are:

1) **Increase preventive oral health activities**
2) **Increase access to dental services to treat existing oral diseases**

To be most effective, strategies must be implemented simultaneously. Prevention and education activities reduce the need for future treatment. All related systems must shift (education, financing, public programs, and community interventions) to accommodate the need to increase the capacity of the delivery system without overtaxing our resources.

The following CDAP recommendations are based on our research, built from previous recommendations (Chapter 7), and reflect assessment of the current environment and experience of the advisors and staff.

Each strategy has a measurable objective. The rationale incorporates the values and changes this group feels are necessary to expand access and improve quality of care. Within each of the two long-term strategies are outlined specific shorter-term recommendations. These are the immediate changes that will enable broader long-term goals to be achieved. Finally we discuss the leveraging tools for implementing the recommended changes.

GOAL: Change the dental care delivery system in California to a comprehensive, community-based, accessible and sustainable system that promotes optimal oral health for all.

OVERALL OBJECTIVE: Define and attain an acceptable level of oral health for all residents of California

Sub-Objective 1: Increase the percentage of Californians receiving preventive oral health services

Sub-Objective 2: Reduce the level of untreated dental decay and periodontal disease in underserved populations in the State

RECOMMENDATION I: PREVENTION

OBJECTIVE

Increase the percentage of California residents, particularly children and underserved populations, receiving preventive oral health services.

LONG TERM STRATEGY

Increase preventive oral health activities through expanded contact points with populations at risk for disease, primarily through outreach and integration of oral health services with other social and health services. Prevention activities exist at three levels:

a. Community-based prevention activities (e.g., education, outreach, fluoridation)
b. Clinical primary prevention activities (e.g., sealants, prophylaxis, fluoride varnishes)
c. Clinical secondary prevention activities (e.g., restorations)

Each level must be accessible and targeted at those who need it the most.

RATIONALE

Prevention of disease is the most rational, ethical approach to care. The dental workforce is not currently equipped to provide the level of preventive services required for adequate oral health of ALL California residents. This is particularly true since a large proportion of the population seldom enters a dental office. It is relatively clear which communities have barriers to care and are at risk for oral diseases. Therefore, targeting community-based preventive oral health services is possible. Many programs already work closely with underserved populations for health and social supports. Forming alliances with

successful programs may be the most efficient way to disseminate oral health information and education. Certain prevention measures such as sealants or prophylaxis that are clinical in nature can be provided in community settings such as schools. Licensed dental professionals must deliver other measures in clinical settings. Combining all of these approaches will create a broader "upstream" approach to prevention of oral diseases.

ACTION STEPS

CONSUMER

- Expand the number of outreach programs to underserved groups to educate them on oral health basics and provide preventive care
- Expand the availability and third party coverage of preventive services in schools or other locations

PROVIDER

- Develop a core preventive oral health curriculum for all health professionals including competencies in infant oral care, management of high risk children, oral health assessments by primary care providers and interprofessional coordination. This should be taught both in mini-residencies and traditional health educational settings
- Initiate cross training for health professionals, such as pediatric residents and dental students, so they can learn together
- Encourage dentists and other oral health professionals to participate in community-based health programs and local collaborations for oral health
- Expand dental coverage to reimburse a variety of health professionals (not just dentists) for providing preventive services. Provide incentives for preventive care delivery by these professionals (reimbursement, funding , CE courses etc.)
- Train social workers, public health nurses, and other professional outreach staff to screen and recognize oral diseases
- Increase the number and scope of education programs for dental hygienists and assistants

- Make every possible effort to integrate oral health as a component of primary health care. This includes education, assessment and reimbursement, for both students and practitioners

SYSTEM

- Support community water fluoridation
- Experiment with new and innovative care models using dental hygienists, assistants and other health professionals
- Provide case management for enrollees in public dental programs
- Develop protocols for preventive oral health services
- Expand school based oral health care delivery systems

PARTNERS

A wealth of resources exists in the public and private sectors to accomplish these goals. The key is collaboration towards the goal of preventing oral diseases. Many key preventive measures are clinical, so professional staff is integral to these efforts. However, the public health community is also necessary, as it already has made pathways into the communities in need. A statewide taskforce formed to promote a strategic partnership to monitor and push for expanded prevention activities might include the following members:

State Dental Policymakers such as:

- Office of Medi-Cal Dental Services
- MRMIB (Healthy Families)
- Children's Dental Disease Prevention Program

Professional Associations such as:

- CDA, CDHA, CNPA, CPCA, CMA, CSPD

Professional schools:

- Public and Private
- Dental Schools, Allied Health, Medicine, Nursing, Public Health

Public Health Departments and Officials such as:

- State Dental Director
- MCH, WIC, etc

High level policymakers

- Legislators
- Business Leaders

Community Coalitions and Representatives

- Prop 10 Commissions
- community, advocacy organizations,
- community representatives

LEVEL OF IMPLEMENTATION

A statewide coordination and collaboration effort is necessary to implement some of the broader fiscal and policy changes. However, services must be tailored to and delivered at the local level. Therefore effective community partnerships should be the root of programmatic implementation, with broad support and reinforcement at the county and state level.

COST/FUNDING

Funding new systems is the biggest challenge of any public, private, state or local dental program. Successful programs will build funding partnerships and use every opportunity to use existing funds to leveraging new funds (e.g., passing one funding source through a county health department to draw down federal matching funds). Each of the following could be involved:

- Independent payors
- Local initiatives. An example is the Proposition 10 funding that has already been allocated towards dental services and education in many communities in California
- Foundations. California has a wealth of health care foundation resources that should be tapped to fund new and innovative models
- State Sources including:
  - State budget. This could be done through legislation and budget process

- Services potentially paid for by Medi-Cal/MRMIB
- Tobacco settlement money

MEASUREMENT

A public health measurement system needs to be developed to define preventive oral health measures, track preventive services delivered, including where they are occurring, and find possible proxy measures for home care and other preventive services outside of those reported in clinical settings. A baseline level of statewide current preventive activities should then be measured, and periodic updates performed.

RECOMMENDATION II: TREATMENT

OBJECTIVE

Reduce the level of untreated dental decay and periodontal disease in underserved populations in the State.

LONG TERM STRATEGY

Increase the number of completed "episodes of care" by increasing access to quality, affordable, dental treatment. An episode of care would be considered the sequence of dental visits needed to complete a treatment plan and restore oral health. Increase access to care through expansion of dental safety net programs. Improve the effectiveness of the dental delivery system by increasing the continuity, productivity and use of evidence-based treatment.

RATIONALE

California is facing a public health crisis in the form of an epidemic of dental caries. There is also high incidence of other untreated oral disease such as periodontal disease. Without significant changes in the amount of appropriate clinical treatment available to reduce the burden of disease in all age groups of low-income, minority and uninsured populations, this epidemic shows little sign of abatement.

ACTION STEPS

CONSUMER

- Increase efforts to enroll eligible individuals and families in the existing public dental benefit programs and help them find and utilize a dental "home" as soon as they are enrolled.
- Expand and promote dental insurance to have parity with medical; all children under 18 should be covered.
- Advocate for Healthy Families dental only coverage, plus coverage for parents of Healthy Families children.

PROVIDER

- Implement the following changes in Medicaid and Healthy Families to encourage provider participation.
  - Tax credits or enhanced reimbursement for certain levels of participation
  - Increase in reimbursement rates (this is a necessary but not sufficient strategy)
  - Reduction of administrative burden
  - Enhance case management and enabling services for enrollees compliance
- Develop incentive programs to increase oral health resources in low-income communities through such strategies as service-learning sites, loan repayment and low-interest loans for infrastructure.
- Increase the racial and ethnic diversity of dental professionals through recruitment, retention, and mentor programs for these groups.
- Refine and simplify the dental HPSA designation process and increase availability of dental placements in these areas.
- Revise dental curricula to increase the focus on community health and evidence-based model of care delivery, focusing on outcomes, cultural competency, efficiency and accountability.

SYSTEM

- Create a more flexible licensure policy to facilitate increased mobility of dentists to the state. This should including licensure by credential and reciprocity with other states.
- Develop case management systems for at-risk populations to ensure they complete every episode of care. This should entail such innovations as using community health workers.
- Prioritize community and individual needs through state and local risk assessment. This will help target funding and programmatic efforts.
- Increase the number of dental clinics, safety net programs, and oral health professionals that serve high-risk, underserved communities. Only a small percent of California's community clinics offer dental services. This system represents a significant portion of the safety net providers in the state. Expand existing infrastructure and support programs.

PARTNERS

Stakeholders should collaborate on how to develop a true dental "safety net". At the state level, this should include those responsible for the funding and administration of such programs, such as the Dental Board of California, the Office of Medi-Cal Dental Services, and MRMIB and insurance organizations. The California Primary Care Association functions as an important policy and program development advocate for safety net providers. There is a need for public health and safety net advocacy organizations to aid in collaborative efforts for oral health care.

California's oral health professions education institutions must also consider how to develop a workforce better prepared to tackle these problems and willing to work as safety net providers. At the local level it will take coordination between public health workers, organized dentistry, private practice dentists, and community activists.

LEVEL OF IMPLEMENTATION

To increase treatment availability for those currently unable to access care will require state-level efforts to increase the resources (workforce and infrastructure) needed to provide this treatment. Long-term sustainability will require ensuring on-going services through training and education systems. At the local level it will require coordinated efforts to integrate services and do outreach to local communities.

COST/FUNDING

The costs of expanding dental treatment for all untreated dental disease should be born by payors, employers and government. Employers should provide dental benefits for their employees. The State of California should increase investments in oral health care for low income and uninsured individuals to bring it to parity with other necessary primary health services. Foundations and other grantors play a role in funding innovative new models and pilots.

MEASUREMENT

There are very few data sources that exist on levels of untreated dental decay or periodontal disease that can be used to measure progress towards improved oral health status in different California populations. These sources must be identified and assessed for their relevance and validity. Then a commitment and funding must be secured for an ongoing surveillance system able to examine both oral health needs and the resources available to address those needs. Monitoring progress could be done from the local to state levels using the following measures:

- Utilization (unduplicated)
- Completed care (new treatment code needed)
- Disease prevalence (needs assessment data)

Numerous steps must be taken if the dental care delivery system is to make the fundamental shift towards a more preventive, accessible and sustainable system. Our recommendations outline the two major strategies needed to accomplish this shift and highlight the immediate priorities for short-term changes.

ENABLING CHANGE

Overarching these two goals is a set of factors that will determine the ability of the institutions we currently have to devise, implement and manage change. The number of stakeholders is as large as is the diversity of their interests and the incentives for their actions. The strategies will more likely become real, however, if they make good use of the following:

- Leadership
- Evidence-based care
- Program Evaluation
- Technology
- Political will
- Community-based solutions
- Alignment of funding mechanisms with oral health goals

LEADERSHIP: Change in health care has often been stymied because practitioners, educators, insurers and policy makers have refused or been unable to work effectively together. Hostility and accusations across sectors are common. To remedy this situation, all parties will need to recognize the leadership role required of them and be more willing to undertake such a role in a collaborative manner.

EVIDENCE BASED DENTISTRY: Increasing use of evidence-based dentistry will allow documentation of the outcomes of health care, cost-effectiveness, and time-efficiency. As evidence-based dentistry comes on-line it should be quickly moved to the point of delivery where it can have the greatest impact.

PROGRAM EVALUATION: The information needed to compare the efficacy and cost - effectiveness of different safety net programs and financing mechanisms must be made available. Evaluation, both of programmatic goals and health outcomes, is necessary to ensure effective use of public dollars for oral health services. Community programs need simple tools for evaluating their programs and tracking and understand their data.

TECHNOLOGY: New information should be used at every level to deliver the most effective care and streamline the process of care delivery. This includes information

technology and new dental technology. Diffusion of this technology will be incredibly difficult given the highly independent nature of dentistry, so leadership in collaboration and system change is necessary.

POLITICAL WILL: The policy "window", so to speak, is open. The year 2000 alone has seen dozens of committees, advisory groups and major initiatives implemented to understand and begin to address the growing oral health care crisis. Policy makers and the public must be educated on the importance of oral health and advised as to the most effective solutions. The significant changes needed in workforce policy, regarding expanded responsibilities of mid-level practitioners, in both dental and medical, and badly-needed allocations of funding for oral health programs is unlikely until higher level decision makers such as the Legislature and the highest levels of the Administration prioritize oral health issues. This is critical to drive the oral health agenda.

COMMUNITY BASED SOLUTIONS: Whether new or old, all of the safety net programs have some community visibility and presence. New efforts should develop and utilize community partnerships or have community initiated solutions. This is particularly important in a state as diverse as California where communities' needs vary significantly and the recipe for success can only be developed at the local level. The recent number of Proposition 10 Commissions that identified oral health care for young children as a community priority and funded new programs is a prime example of what communities can do when allowed a voice and given the resources to address a pressing problem.

ALIGNMENT OF FUNDING: Current funding is clearly not adequate for addressing the oral health needs of underserved populations. Dental care is not financed in the same fashion as medical care, and a large proportion of California's population is going without any kind of financing for their care. Funding of education and practice, and payment for services must be aligned with population health goals, with more focus on the provision of preventive care. Changing funding streams provides the strongest point of leverage for system change.

Appendix 1
Summary of Recent State Medicaid / Legislative Changes

Summary of Recent State Medicaid / Legislative Changes			
State	**Barrier**	**Policy**	**Outcomes**
Alabama	Flexibility in Licensure Requirements	In 1999, passed legislation (H 367) that accepted out-of-state licenses and/or clinical board examinations of dental providers, including dentists and dental hygienists.	
Arkansas	Patient Protection	In 1999, passed legislation (H 2118) that establishes patient choice in dental providers.	
Connecticut	Expand scope of practice for dental hygienists	In 1997, created a pilot program to increase access to preventive dental care, particularly for Medicaid and other low-income children, was made permanent in 1999. With an already strong network of school-based dental services throughout the state, the program enabled hygienists to practice, within their scope of practice, but without the supervision of a dentist in safety net programs.	When the program started as a pilot, a study was conducted to determine the impact of having hygienists practicing in public health settings without supervision and to demonstrate whether it would affect or threaten business for dental practices. The result was that it didn't affect dentists' practices, but rather, in the schools with dental services, it introduced more children to oral hygiene at earlier ages.
	School based health services	Wanted to enhance its strong network of school based health services. Of the 54 school based health centers, 20 have school based dental clinics, primarily in elementary schools, with operatories and one or several part-time to full-time dentists providing a comprehensive range of dental services.	Schools with these dental health services have achieved great successes in increasing access and decreasing decay. Some of the programs decreased dental decay by 20% and the need for urgent care by 38%. The increased role of hygienists in these settings will hopefully help to further increase access and perhaps expand care to other schools as well.
Delaware	Reimbursement	In January 1998, raised its dental rates from 75% to 85% of actual UCR fees in combination with an aggressive outreach program with the Dental Society to recruit dentists for Medicaid participation. Delaware will also look at reducing other administrative barriers to further increase participation.	The state Medicaid provider participation increased from one dentist to over 70 dentist in less than 2 years.
	Flexibility in Licensure Requirements	In 1999, passed legislation (S 73) that accepted out-of-state licenses and/or clinical board examinations of dental providers, including dentists and dental hygienists.	
Georgia	Anesthesia Coverage	In 1999, enacted legislation to provide for anesthesia coverage in dental care. Generally requires health insurance providers and HMOs to provide coverage for certain anesthesia charges related to certain dental procedures for specified populations.	

Summary of Recent State Medicaid / Legislative Changes			
State	**Barrier**	**Policy**	**Outcomes**
Hawaii	Participation Strategies	Kauai Dental Health Task Force (87)	
Illinois	Patient Protection	In 1999, passed legislation (S 721) that created the Dental Care Patient Protection Act, managed by the Department of Insurance, to regulate dental managed care plans; establishes requirements for disclosure to enrollees, and "credentialing and utilization review" standards. Also clarified patient rights; rights include obtaining professional standards of practice, choice of provider, access to all information concerning his/her condition and proposed treatment, and privacy and confidentiality of records.	
		State grant program to provide funds to communities for collaborative planning around oral health issues. Grantees are required to identify community partners, determine goals and resources, collect and analyze data, develop and prioritize programs, and then evaluate the process.	In the past three years, collaborations covering 47 counties have developed. At the same time, the IFLOSS Coalition brings together private and public dental interests and advocates from across the state to raise awareness and work with the governor, legislative and state agencies on oral health issues.
Indiana	Anesthesia coverage	In 1999, enacted legislation to provide for anesthesia coverage in dental care. Generally requires health insurance providers and HMOs to provide coverage for certain anesthesia charges related to certain dental procedures for specified populations.	
Kansas	Anesthesia coverage	In 1999, enacted legislation to provide for anesthesia coverage in dental care. Generally requires health insurance providers and HMOs to provide coverage for certain anesthesia charges related to certain dental procedures for specified populations.	
	Reimbursement	When Kansas Medicaid program increased its rates in 1997, it sent a letter with a new fee schedule to every dentist in the state. The letter read in part: *Over the past several years, the number of dentists providing treatment to children covered by Medicaid has decreased. With the recent rate increase, the adoption of the uniform ADA procedure codes, we hope to bring more dentists into the Medicaid program.* The letter also offered invitations for one-on-one informational visits in which dentists can speak to Medicaid representatives about participating in the program.	

Summary of Recent State Medicaid / Legislative Changes			
State	**Barrier**	**Policy**	**Outcomes**
Maine	Loan Forgiveness	Recently passed legislation (H 1367) for a dental education loan forgiveness and repayment program. The legislation allows for a maximum of $20,000 annually, for a period of up to four years, either in a loan to a current dental student or as repayment for a practicing dentist. In return, loan recipients are obligated to practice in state-designated underserved population areas and "must serve all patients regardless of ability to pay through insurance or other payment source." The intent of the legislation is that these dentists will be working in community health centers or community-based non-profit dental centers, and not in private practice.	
	Participation Strategies	The mission of the Maine Children's Alliance is to be a strong and powerful voice to improve the lives of Maine's children, youth, and families. They have created an issue paper: "Child Health Care Access Project: Maine's Crisis in Access to Dental Care."	
Maryland	Flexibility in Licensure Requirements	In 1999, passed legislation (S 672) that waives education requirements for a limited dentistry license.	
Mass.	Participation Strategies	MassHealth Dental Reform Plan -- Formation of Dental Advisory Committee	
	Administrative Burdens	MassHealth Dental Reform Plan -- Dental PCC Plan, Billing Improvements	
	Outreach to Dental Community	MassHealth Dental Reform Plan -- Dental Community Outreach, Improve Patient/Provider communication	
Michigan	Tax Credits	Legislation Introduced: Tax credits equal to the amount of uncompensated dental treatment for indigent individuals or $5000, whichever is less	

Summary of Recent State Medicaid / Legislative Changes			
State	**Barrier**	**Policy**	**Outcomes**
Minnesota	Mandates	Statute that mandates that all health care providers (including dentists), who treat state and state university employees; employees of certain counties, cities and school districts, whose treatment is paid for by workers' compensation; and a few other small groups of state-covered insured, open at least 20% of their practices to Minnesota Health Care Programs (MCHP). Once a provider's practice reaches this 20% level, they are allowed to turn away any additional MHCP recipients, but not before.	This statute has met much opposition. In 1998, dentists successfully lobbied to change lower their patient threshold to 10%. Even with this change, the statute has not been very effective in increasing dentist participation; rather it has had the opposite effect. This is due to the fact that the law is enforced by complaint only. Therefore, when a MHCP client complains that a provider refused to see them because their practice is already above the 10% limit, an investigation is initiated. These investigations have resulted in the removal of over 100 dentists from the subcontractor list due to violations. As such, the state is now looking at some positive provider incentives to increase provider participation.
Mississippi	Reimbursement	In 1999, passed legislation (H 1332) to increase the reimbursement rates for dental services under the Medicaid program	
	Anesthesia coverage	In 1999, enacted legislation to provide for anesthesia coverage in dental care. Generally requires health insurance providers and HMOs to provide coverage for certain anesthesia charges related to certain dental procedures for specified populations.	
Missouri	Tax Credits	Legislation Introduced: Tax credit specifically for those dentist providing services to Medicaid recipients.	

Summary of Recent State Medicaid / Legislative Changes			
State	**Barrier**	**Policy**	**Outcomes**
Nebraska	Reimbursement	In 1998, raised its dental Medicaid reimbursement rates to 80% of average UCR. In addition, the state is dedicated, not only to raising reimbursements, but also to addressing some of the dentists' other concerns and fixing the overall system. As a result, the state has seen dramatic increases in provider participation with nearly 750 of 800 licensed dentists participating. After this failed attempt with managed care, the Nebraska Medicaid program decided to revamp its program by creating a task force with the Nebraska Dental Association to increase communications between the state and dentists and to begin to eliminate the barriers to their participation in publicly funded programs.	The program increased provider rates and initiated a process of reducing administrative barriers, that includes: minimizing the need for preauthorization for most dental services; changing the claims processing to include electronic processing and optical scanning techniques; updating all policies to correlate with ADA procedure codes. In addition, the state has committed to proactively work with the dental association to continue to modify the system to better meet the needs of the dentists, the enrolled clients, and the state
	Reimbursement (APHSA)	To change its rates, Nebraska's Medicaid department worked with the dental community in a unique way. In 1998, representatives from the department met with a select group of providers to discuss changes in the fee schedule. The dentists brought in a fee schedule from a local preferred-provider organization (PPO) and, recognizing that the state could not raise rates on all dental services across the board, picked several services they wanted to be reimbursed at the PPO rate. The Medicaid department accepted their suggestion and raised rates for the selected procedures.	
	Administrative Burdens	In 1995, Nebraska Medicaid program attempted to implement capitated dental managed care in three counties.	
	Outreach to Dental Community	In order to encourage dentist participation in its Medicaid program, it was necessary to acknowledge and thank dentists who contribute to the program. The state pays for public service announcements during Public Health Week annually, to thank dentists in the community, and purchases gift certificates and plaques for dentists to acknowledge their efforts to address the dental access issue for low-income populations.	Both the state and the dentists feel that this has had a positive impact on the dentists and their willingness to participate.

Summary of Recent State Medicaid / Legislative Changes			
State	**Barrier**	**Policy**	**Outcomes**
Nevada	Flexibility in Licensure Requirements	In 1999, passed legislation (S 181) to create new categories of dental and dental hygienist licenses to provide dental care in publicly-funded settings	
New Hampshire	Expand scope of practice for dental hygienists	In 1999, stated a pilot program to allow hygienists to practice in school and public health settings to assume a broader scope of duties without a dentist. Duties include screenings, cleanings, fluoride, and referrals, but do not include placing sealants. The goal is to utilize hygienists as case managers for children in public health settings -- to introduce these children to dental hygiene, to emphasize the importance of maintaining good oral hygiene, to get them comfortable with the concept of a dental home, and act as a bridge or referral to link children with private practice dentists.	
New Jersey	Dentist education	In 1999, passed legislation (S 1492) that will create a training program for dentists to meet special needs for persons with developmental disabilities	
New Mexico	Expand scope of practice for dental hygienists	In 1999, passed legislation that enabled hygienists to provide a wide range of oral health services without the supervision of a dentist. These include, but are not limited to: cleaning and polishing teeth; removing diseased tissue; applying fluorides, sealants and other topical therapeutic and preventive agents; screening to identify indications of oral abnormalities; and providing preliminary assessments of gum disease.	
New York	Flexibility in Licensure Requirements	In 1999, passed legislation (A 4467) that eliminated the licensure requirement of citizenship or permanent residence for dentists.	

Summary of Recent State Medicaid / Legislative Changes			
State	**Barrier**	**Policy**	**Outcomes**
North Carolina	Participation Strategies	In 1998, the North Carolina General Assembly charged the NC DHHS and the NC Institute of Medicine's Task Force on Dental Care Access to evaluate and recommend strategies to increase the level of participation of dentists in the Medicaid program. Several recommendations that came out of that task force related to providing training to dentists and Medicaid recipients; and increasing pediatric residencies in the state; and allowing licensure by credentialing. One recommendation was to train dental professionals to treat and address the dental health needs of the most vulnerable populations, including minority, pediatric and special needs populations and to educate Medicaid recipients about the importance of ongoing dental care. Another recommendation was to increase the number of positions in the pediatric residency program at the dental school to thereby increase the number of pediatric dentists in the state, increase the availability, and expand the provision of prevention and restorative dental services	The state legislature authorized three of the task force's recommendations: expanding dental benefits under SCHIP, reimbursing for fluoride varnishes, and authorizing hygienists in public health clinics to provide certain dental services. The recommendation to raise dental reimbursement rates was not implemented, but the legislature may look at the issue again in 2000.
	Anesthesia coverage	In 1999, enacted legislation to provide for anesthesia coverage in dental care. Generally requires health insurance providers and HMOs to provide coverage for certain anesthesia charges related to certain dental procedures for specified populations.	
North Dakota	Anesthesia coverage	In 1999, enacted legislation to provide for anesthesia coverage in dental care. Generally requires health insurance providers and HMOs to provide coverage for certain anesthesia charges related to certain dental procedures for specified populations.	
Oklahoma	Anesthesia coverage	In 1999, enacted legislation to provide for anesthesia coverage in dental care. Generally requires health insurance providers and HMOs to provide coverage for certain anesthesia charges related to certain dental procedures for specified populations.	

Summary of Recent State Medicaid / Legislative Changes			
State	**Barrier**	**Policy**	**Outcomes**
Oregon	Flexibility in Licensure Requirements	In 1999, passed legislation (H 3123) that accepted out-of-state licenses and/or clinical board examinations of dental providers, including dentists and dental hygienists.	
Pennsylvania	Administrative Burdens	Unlike its Medicaid program, in which there are restricted networks, low reimbursement rates and other administrative barriers, Western Pennsylvania's CHIP uses the same networks, reimbursement, billing systems, and eligibility verification processes as in its commercial models, which minimizes the financial disincentives and additional administrative barriers for providers. In addition, children enrolled in CHIP are not singled out. Rather they receive the same health insurance card as other privately insured individuals, which helps to minimize any potential provider discrimination or stigma associated with being enrolled in a publicly funded program.	The program has had significant successes in increasing access to care and decreasing unmet need. After 12 months of being enrolled in the program, children's access to dental services improved significantly -- the number of children who had a dental visit doubled from 30% to 64%, the percentage of children who had a regular source of dental care increased from 51% to 86%, and unmet dental treatment needs were almost eradicated, from 52% to 10%.
Rhode Island	Loan Forgiveness	Loan forgiveness program for dentists and hygienists, "State Loan Repayment Program." The program requires that dentists/hygienists perform a minimum of 2 years of service in a federally designated HPSA. In return, the state pays all or part of the qualifying education loans of the dentist/hygienist, not to exceed $35,000 for each year of service provided. Funding for the program comes from Federal grants and State matching funds.	
South Carolina	Reimbursement	Instituted enhanced reimbursements for dentist who saw 100 children or more annually had moderate impact on participation rates. Therefore, the state decided to return to a more traditional reimbursement system with fees raised across the board to 75% of UCR	The state will monitor progress and continue to actively work with the Dental Association in an effort to increase the number of dentists participating and increase the number of children seen.
South Dakota	Medical/Dental Partnership	In 1999, passed legislation (H 1135) that allows certain community-based primary health care organizations to provide publicly funded dental services	
	Anesthesia coverage	In 1999, enacted legislation to provide for anesthesia coverage. Generally requires health insurance providers and HMOs to provide coverage for certain anesthesia charges related to certain dental procedures for specified populations.	

Summary of Recent State Medicaid / Legislative Changes			
State	**Barrier**	**Policy**	**Outcomes**
Tennessee	Flexibility in Licensure Requirements	In 1999, passed legislation (S 1376) that expands the scope of duties for practical dental assistants to those of registered dental assistants and dental hygienists.	
Texas	Loan Forgiveness	In 1999, established a loan forgiveness program (H 3544) in which a portion of recipient's loan may be forgiven in exchange for providing services in underserved areas.	
	Water fluoridation	"Water Fluoridation Costs in Texas: Texas Health Steps (EPSDT - Medicaid)" in Fulfillment of House Concurrent Resolution 145, Texas 75th Legislature, May 2000 … The Texas 75th Legislature passed House Concurrent Resolution 145 requiring the Texas Department of Health to conduct a study of the cost of publicly financed dental care in relation to community water fluoridation.	
Utah	Reimbursement	A dentist is reimbursed at an enhanced rate of 120% of the existing Medicaid fee (which ends up being approximately 80% of the ADA mean), if he lives in an urban area and agrees to treat 100 unduplicated patients each year or if he resides in a designated rural community.	The results have been mixed. The enhanced reimbursement resulted in a solidification of the providers who were already providing some services and a small addition of new dental providers. Dentists who were seeing some patients, agreed to see more patients, which resulted in a 20% increase in patients seen and procedures being completed. However, the dentists who were seeing only a few patients were discouraged from participating and therefore, discontinued seeing any Medicaid patients. The program is currently in its third year with the enhanced reimbursements. Anecdotally, the program has begun to see a leveling off in the number of services and children being seen. therefore, they are looking to continue to monitor the progress and determine if other solutions should be taken to further boost provider participation.

Summary of Recent State Medicaid / Legislative Changes			
State	**Barrier**	**Policy**	**Outcomes**
	Loan Forgiveness	Dentists can apply for their private clinics to be loan repayment sites and then apply for repayment of their loans up to $23,000 for a two-year commitment and up to $73,000 for a four-year commitment. In order to qualify as a loan repayment site, clinics receive points for the percent of underserved, minority, and special needs populations treated by their practices and require at least 60% of the practice serving these special populations. Currently, most sites that have qualified for loan repayments treat in excess of 80% underserved populations.	
Vermont	Reimbursement	Rejected two-tiered payment system because most of their dentists participate, but at low levels of service; feared would likely give the low participating level dentists a good excuse to discontinue delivering care to this population. Used additional funds to raise reimbursements slightly for all dentists, but the administration and the legislature were very clear that attached to the fee increase was a quid pro quo, "We increase fees, dentists increase volume and access." The State Dental Society agreed which has resulted in the majority of dentist providing some level of care to Medicaid clients.	Vermont will be watching the data to determine whether there are increases in volume and access over the next year.
	Reimbursement	In July 1999, Medicaid program increased its reimbursement rates to equal about 75 percent of the average customary fee dentists in the state charge. Its rates are now the second highest of all payers in the state (Blue Cross/Blue Shield is first).	
	Administrative Burdens	Eliminated many of the administrative barriers for dentists; accomplished this by streamlining the claims processing and payment system by using standard ADA billing forms; reducing the number of services requiring prior approach; instituting a rapid electronic payment system, which has cut down on provider payment times; and implementing a simplified eligibility verification process and continuous eligibility that has reduced complications and sped up processes related to eligibility.	

Summary of Recent State Medicaid / Legislative Changes			
State	**Barrier**	**Policy**	**Outcomes**
	Funding for Recruitment	Allocated $100,000 over two years to recruit and retain dentists to the Medicaid program and an additional $400,000 for "regional dental initiatives," such as providing grants to providers who choose to see a certain number of Medicaid clients.	
Virginia	Flexibility in Licensure Requirements	In 1999, passed legislation (H 1023) that allowed for volunteer dentists to obtain a restricted license to practice in free clinics.	
Washington	Preventive Dental Health Program	Program designed to address the oral health needs of low-income children less than size year of age. Access Baby and Child Dentistry (ABCD), is a dental simulation of Medicaid's EPSDT program. Program encompasses many solutions -- providing enhanced payments to participating dentist who provide an array of dental services for enrolled children; providing education and case management to enrolled clients related to appropriate clinic behavior and proper oral hygiene; providing continuing education to providers related to delivering care to pediatric low-income, and special needs populations; and thanking and acknowledging dentist who contribute to the dental well-being of enrolled children in their communities. In addition, however, the program creates strong links to the existing medical establishment for young children. The program ties fluoride and preventive dental health treatments with immunizations and other medical services; trains EPSDT and other pediatricians to deliver preventive dental health services.	

Summary of Recent State Medicaid / Legislative Changes			
State	**Barrier**	**Policy**	**Outcomes**
Wisconsin	Preventive Dental Health Program	Through a Centers for Disease Control and Prevention grant, awarded to the Department of Public Instruction and the Department of Health and Family Services, the Children's Health Alliance of Wisconsin (CHAW) is leading the Healthy Smiles for Wisconsin initiative in a statewide effort to improve the oral health of Wisconsin children through school and community partnerships. The initiative is based on the belief that no child in Wisconsin should go without adequate oral health care, prevention services, and education. The Healthy Smiles for Wisconsin Coalition works to address three main issues of oral health. Dental Sealants (Seal A Smile);Youth oral health surveillance and data collection; Oral health education. The lead agency for the Healthy Smiles for Wisconsin initiative is The Children's Health Alliance of Wisconsin.	

Sources: Innovative Solutions to the Dental Access Issues (Ingargiola, 2000); State of the States: Overview of the 1999 State Legislation on Access to Oral Health (CPA, 1999); State Sources, various.

Appendix 2
Program Interview Form

I. General Information

A. Program

1. Name
2. Location
   a. Address
   b. City
   c. County
   d. State
   e. Zip

B. Contact Person

1. Name
2. Title
3. Agency
4. Work Phone
5. Work Fax
6. E-mail

The California Dental Access Project of the UCSF Center for Health Professions, with the support of the California Healthcare Foundation is conducting an analysis of access to dental care in California with a focus on new and innovative modes of delivery of care for uninsured, low income, and Medi-Cal populations.

The *[name of program/type of program]* was recommended to us by *[if available]* as a program that has been created to eliminate some of the barriers to dental care access currently experienced by these populations.

We would greatly appreciate your taking the time to answer a few questions about your program, including the services you provide, and the population you target. The survey in all takes approximately (15?) minutes.

II. Program Information

A. Community Needs – Barriers Overcome

We are interested in perceived needs and barriers different populations and different communities experience in accessing dental care, we are interested in those perceived needs and barriers which motivated the implementation of your program.

1. What barriers to dental care access was your program designed to address?
2. How did you come to the conclusion that these access issues exist?
   a. For example, was a formal needs assessment done in your community? Among the population?
   b. *(If yes)* would it be possible for the Center to obtain a copy?

Later in the survey, we will ask you a few questions about the implementation and evaluation of your program. But first, we would like to ask you a few details about the program itself.

B. Administering/Funding

Fiscal vs. programmatic

1. Who is the primary administering agency for your program? The administering agency is the agency through which the program is run.

2. Are there any collaborating agencies?

3. Is this program part of a larger Medical program? If so, how much integration or interfacing between two programs? Cross referrals, etc.

4. How is your program funded?
(Medi-Cal, Medicare, Private Pay/Sliding Scale, Private Insurance, Private Grants/Donations, Other Federal Funding, Other State Funding, Other County Funding, Other local funding)

4. Details on program funding

C. Description

1. What types of services does your program offer?
(Dental services – preventive; Dental services – other; Community education/outreach; Dental funding/financing; Dental education)

   Details on service(s) offered

2. Are you familiar with evidence-based dental care? Do you feel that you have any unique services or ways that you manage care that are evidence based?

3. Is your preventive program based on an assessment of individual risks for disease? (For example, an individualized recall system).

4. If so, do you have an assessment form based on risk factors, could share?

5. What are the populations that you target in providing your service?
(Medi-Cal, CHIP, Low-income, Uninsured, Other)

6. Is there a specific age group you aim to target?
(Children, Adults, Seniors (65+), All age groups)

7. Your program is located in *(city or county)*, but what is your target geographic region?
   a. Geographic region (could be a city, county, multiple counties, etc.)
   b. Is the region urban, rural or both?
   c. How many sites (if applicable) does your program have?

8. How many individuals participate in your program?
   a. How many providers participate?
   b. How many providers are eligible to participate?
   c. What types of providers participate (configuration of staff)?
   d. Does your staff consist of any unique roles you may not normally see in a dental program? (For example, a case manager, lay help workers, outreach worker, in–home visits, etc.)

   e. How many beneficiaries participate?
   f. Is this an unduplicated count of beneficiaries?
   g. Which beneficiaries participate in which programs?
   h. How many beneficiaries are eligible to participate?

9. What is the annual budget for your program?

D. Program Implementation/Evaluation

The California Dental Access Project views your program as a potential model for other programs that might be implemented to promote access and remove barriers. As a model, we are specifically interested in both the steps to implementation, and your current evaluation of the program.

1. Implementation
   a. What year was the program implemented?
   b. Is there a year through which your funding is guaranteed? If so, what year is that?
   c. What types of barriers did you encounter when implementing your program? For example, challenges in obtaining funding, reluctance on the part of the community to take advantage of your services, etc.
   d. Who were the major parties involved in your program's implementation. Was it just a key group of concerned professionals? The community as a whole? Major parties include both those who helped and those who hindered its implementation.
   e. Do you have any words of advice or caution to someone who might want to implement a similar program?

2. Evaluation
   a. How are you currently evaluating your program?
   b. What kinds of measures are you using? Health outcomes? Patient satisfaction surveys?

c. Have you performed a qualitative evaluation? For example, how the program is reducing barriers for people?

This finishes the list of questions we would like to ask you today. Do you have anything else you would like to add? Otherwise, we will keep your name and address in order to send you a copy of the report. Thank you for your time.

E. Program Classification (Interviewer's Notes):

1. Public
   a. Federal
   b. State
   c. County
   d. Local
2. Private
3. Collaboration

4. Education

5. Provider-side
6. Beneficiary-side

III. Interviewer Information

A. Name of Interviewer
B. Date of Interview
C. Notes on Interview

Appendix 3
Program List

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Accomack County School-Based Dental Program
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ADEA Commission on the Role of Dental Schools in Addressing Oral Health Disparities & Access to Care

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California Children's Dental Disease Prevention Program (SB111)/Department of Health Services
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Children's Dental Health Project
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Children's Preventive Dental Pilot Project (AB1065: Ducheny)
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Dental Health Expansion Act (S.1035, H.R. 1920)
Senator Feingold

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Filling Gaps: Integrating Service Systems to Improve Childen's Access to Oral Health Care
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IHS Early Childhood Cavities Project
IHS/Early Intervention Project
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Partners in Prevention -- Training Non-dental Health Professionals in Infant Oral Health
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SB1308: Healing arts: licensees
Senator Figueroa

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Appendix 4
Risk Assessment

INFANCY

Family Preparation for Health Supervision

Be prepared to give updates on the following at visits to a health or dental professional during infancy:

Supplemental fluoride and vitamins

Changes in the source of the water used for drinking, cooking, or formula preparation (bottled water, etc.)

Use of bottle, cup

Injuries to the mouth or teeth

Infections in the mouth

Medications, illnesses

Oral hygiene procedures (frequency, problems)

Changes in teeth present in the mouth

Thumbsucking or pacifier use

Periodicity and Services

Dental Professional

If indicated by the infant's needs and/or susceptibility to disease, at health professional's referral:

- Treatment for injury/dental disease
- Recognition and reporting of suspected child abuse/neglect
- Education and anticipatory guidance for parents concerning fluoride supplementation, oral development, nonnutritive sucking habits (thumb or pacifier), bottle use, teething/tooth eruption, tooth cleaning, injury prevention, dietary habits
- Referral, as needed, to other health professionals

Health Professional

Health professionals can provide oral health supervision within the context of the health supervision visits during the first year—suggested at birth, 1 week, and 1, 2, 4, 6, and 9 months:*

- Screening
- Oral health risk assessment
- Recognition and reporting of suspected child abuse/neglect
- Education and anticipatory guidance for parents concerning fluoride supplementation, oral development, nonnutritive sucking habits (thumb or pacifier), bottle use, teething/tooth eruption, tooth cleaning, injury prevention, dietary habits
- Referral, as needed, to the dental professional

* *Most infants will receive their oral health supervision from health professionals. If screening indicates a problem, the infant should be referred to a dental professional.*

Interview

Trigger Questions

To be used selectively by the health or dental professional. Discuss any issues or concerns of the family.

How is feeding going?

How well does Julia fall asleep? Do you give her a bottle in bed?

Is Hannah easy or difficult to console?

What drinking water do you give to Ana?

Does Nikita use a pacifier? Does she suck her thumb or finger?

Do you put Celeste in a safety seat when she rides in a car?

Are you brushing Alexander's teeth? How has this been going?

How much toothpaste do you use?

Do you have a family dentist?

Have you made an appointment for Carlos' one year dental visit?

Observation of Parent-Child Interaction

Are the parent and infant interested in and responsive to each other (i.e., sharing vocalizations, smiles, and facial expressions)?

Is the parent aware of environmental risks, yet supportive of the infant's emerging autonomy and independence?

Oral Exam and Diagnostic Procedures

As part of the complete oral exam, the following should be noted:

Pathologic conditions

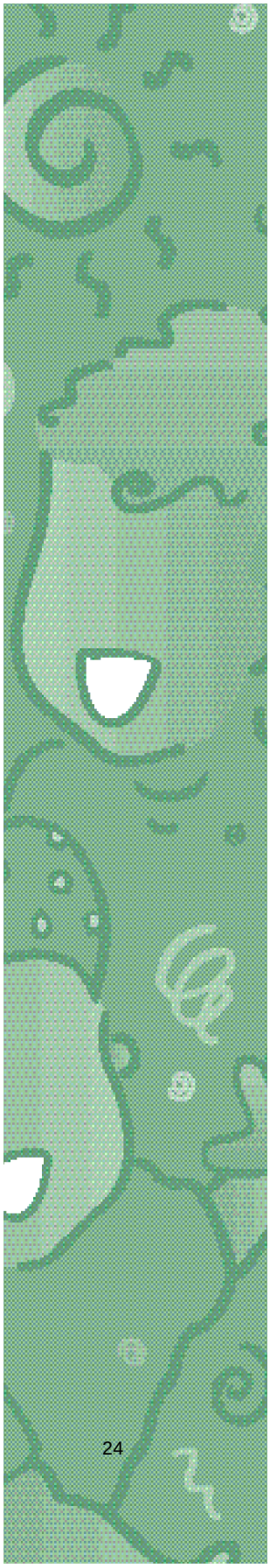
Developmental dental anomalies

Risk factors

Risk Assessment

Dental Caries

RISK FACTORS	PROTECTIVE FACTORS
All Ages: Examples	***All Ages: Examples***
Inadequate fluoride	Optimal systemic and/or topical fluoride
Inadequate oral hygiene	Good oral hygiene
Poor family oral health	Access to care and good oral hygiene
Poverty	Access to car e
Frequent snacking	Reduction in snacking frequency
Special carbohydrate diet	Preventive intervention to minimize effects
Frequent intake of sugared medications	Alternate medications or preventive intervention to minimize effects
Reduced saliva flow from medication or irradiation	Saliva substitutes
Variations in tooth enamel; deep pits and fissures; anatomically susceptible areas	Sealants (if possible) or observation
Special health needs	Preventive intervention to minimize effects
Previous caries experience	Increased frequency of supervision visits
Gastric reflux	Management of condition
High mutans streptococci count	Reduction of mutans streptococci
Infancy: Examples	***Infancy: Examples***
Bottle used at night for sleep or “at will” while awake	Prevention of bottle habit and weaning from bottle by 12 months
High parental levels of bacteria (mutans streptococci)	Good parental oral health and hygiene
History of baby bottle tooth decay	Increased frequency of supervision visits



Risk Assessment

Periodontal Disease

RISK FACTORS	PROTECTIVE FACTORS
All Ages: Examples	***All Ages: Examples***
Inadequate oral hygiene	Good oral hygiene
Unrestored caries	Restoration of carious lesions
Poor family oral health	Access to care and good oral hygiene
Poverty	Access to car e
Special health needs	Preventive intervention to minimize effects
Nutritional deficiency (e.g., vitamin C)	Healthy eating habits
Infectious disease (e.g., HIV/AIDS)	Treatment of disease or preventive intervention to minimize effects
Medications (e.g., Dilantin)	Preventive intervention to minimize effects
Metabolic disease (e.g., diabetes, hypophosphatasia)	Treatment of disease
Neoplastic disease (e.g., leukemia and its treatment)	Treatment of disease and preventive intervention to minimize effects
Genetic predisposition (e.g., Down or Papillon Lefevre syndrome)	Preventive intervention to minimize effects
Poor-quality restorations	Properly contoured and finished restorations
Mouthbreathing	Management of mouthbreathing
Injur y	Use of age-appropriate safety measures and treatment of injur y
Infancy: Examples	***Infancy: Examples***
None	None

Malocclusion

RISK FACTORS	PROTECTIVE FACTORS
All Ages: Examples	***All Ages: Examples***
Congenital absence of teeth	Early intervention
Variations in development (e.g., tooth eruption delays and malpositioned teeth)	Early intervention
Conditions associated with malocclusion (e.g., cleft lip/palate)	Early intervention
Injury	Use of age-appropriate safety measures and treatment of injury
Acquired problem from systemic condition or its therapy	Dental intervention as a part of medical care
Family tendency toward malocclusion	Early intervention
Musculoskeletal conditions (e.g., cerebral palsy)	Dental intervention as a part of medical care
Skeletal growth disorders (e.g., renal disease)	Dental intervention as a part of medical care
Infancy: Examples	***Infancy: Examples***
None	None

Injury

All Ages: Examples	***All Ages: Examples***
Substance abuse in family	Referral for counseling
Child abuse or neglect	Referral for counseling
Multiple family problems	Referral for counseling
Lack of protective reflexes	Referral for appropriate therapy
Infancy: Examples	***Infancy: Examples***
Failure to use safety measures appropriate for infant (e.g., car safety seats, stair gates)	Use of infant-appropriate safety measures

Anticipatory Guidance

Throughout infancy:

Use an infant safety seat that is properly secured at all times.

To avoid developing a habit that will harm the child's teeth, do not put the baby to bed with a bottle, prop it in the baby's mouth, or allow the baby to feed "at will."

Most infants do not get their first teeth until after six months, and some will not do so until after one year. Teethers may be irritable.

Familiarize yourself with the normal appearance of your baby's gums and teeth so that you can identify problems if they occur.

Many babies need extra sucking. If the infant is receiving enough milk and growing well, sucking a thumb or pacifier may help calm the infant and will not harm the teeth during infancy.

Try to console the infant, but recognize that the infant may not always be consolable, regardless of your efforts. Accept support from your partner, family members, and friends. If you feel overwhelmed, discuss it with your health professional.

Always keep one hand on the baby on high places such as changing tables, beds, sofas, or chairs.

Keep all poisonous substances, medicines, cleaning agents, health and beauty aids, and paints and paint solvents locked in a safe place out of the baby's sight and reach.

Use safety locks on cabinets.

Install gates at the top and bottom of stairs, and place safety devices on windows.

Lower the crib mattress.

Avoid dangling electrical and drapery cords. Ensure that appliances are out of reach.

Keep pet food and dishes out of reach. Do not permit the baby to approach the pet while it is eating.

Do not use an infant walker at any age.

Always use a safety belt or infant seat when placing the infant in a shopping cart.

At six months:

Begin to offer a cup for water or juice.

Clean the infant's teeth with a soft brush, beginning with the eruption of the first tooth.

Give the infant fluoride supplements only as recommended by the health professional, based on the level of fluoride in the infant's drinking water.

At nine months:

Encourage the infant to drink from a cup. If bottle-feeding, begin weaning from the bottle.

Review

Chart with assessment of child's oral health

Appropriate screening/referral

Follow-up

Utilization review (appropriateness/quality of care)

Policies of health professional and dental professional regarding quality of care

Outcomes

- Parents are informed of oral development and teething issues
- Parents are informed of and practice preventive oral health care, including brushing infant's teeth with pea-size amount of fluoridated toothpaste
- Infant rides in car safety seat

Appendix 5
Evaluation Tools

MODEL FOR ASSESSING AND REDUCING BARRIERS TO ACCESS TO ORAL HEALTH CARE EXAMPLES

BARRIER	DATA COLLECTION AT BASELINE	DATA AT EVALUATION INTERVAL	OUTCOME MEASURE
Consumer			
Perceived oral health needs	Do you have any oral health needs/problems at this time?	What oral health needs do you currently have?	% with perceived problems who then had them reduced
	What services do you want/think you need?	What services did you receive this year? Where did you receive them?	% who received any services they wanted
		Did you receive all of the services you felt you needed? If no, why not?	% who received all of the services they wanted
	Do you think these services will reduce/cure your oral health needs?	Did the services reduce/cure some or all of your oral health needs?	% who felt their oral health improved compared to all who received services
	Document clinical and radiographic findings	Document clinical and radiographic findings and compare to baseline.	% with reduced clinical needs that corresponded to their perceived needs
Provider			
Effective and/or experimental services not reimbursed	Do you provide the following preventive services that research has shown are effective but may not be reimbursed by third party payors: dental sealants, fluoride varnishes, *S mutans* monitoring?	Which of the following preventive services did you provide before they were reimbursable and do you provide now that they are: dental sealants, fluoride varnishes, *S mutans* monitoring?	% providing services without reimbursement compared to those who aren't
	Would you provide them if reimbursement were available?		% who say they would provide services after reimbursement compared to those who aren't
System			
Professional licensure and state practice acts	How many persons per month receive preventive services by you or your staff in community settings outside of your office?	How many persons per month received preventive services by you or your staff in community settings before the beginning of the allied health pilot project and how many receive services now?	# per month receiving services after beginning of pilot project compared to # per month before pilot project
	How many persons would you and your staff be able to see per month if practice acts were less restrictive?	Document specific services provided and compare to baseline	# per month provider says he is able to see after easing practice restrictions

Appendix 6
Summary of Previous Recommendations

Summary of Recommendations to Increase Access and Quality of Dental Care and the Oral Health Delivery System

	Recommendation	Count	Grembowski et al.	Pew Health Professions Commission	Pew Health Professions Commission	IOM (Dental Education at the Crossroads) *Select Recommendations	Pew Health Professions Commission	CA: Rural Dental Access Forum	Building Partners Tahoe Conference	Pew Health Professions Commission	AIM for Change (ADA)	Minnesota	N. Carolina IOM	New Mexico: SJM 21	Oral Health for All (Warren)	CA: Dental Health Foundation	MA: Special Legislative Commission	Minnesota	NIDCR	North Dakota Dental Summit	Speaking Out	SG Workshop on Children's Oral Health	Surgeon General's Report on Oral Health
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I.	**Consumer Education and Attitudes**	**18**																					
1	Change the public's perceptions regarding oral health and diseases of that oral health becomes an accepted component of general health	1																					x
2	Create public service announcements aimed at beneficiaries	5						x	x		x		x	x									
3	Translate dental need into demand through targeted public education campaigns, with appropriate messages, and developing networks respond to demand	1																				x	
4	Increase / fund outreach activities	5	x					x	x		x		x										
5	Public should participate in redefining health care and the role of professionals	1		x																			
6	Train Medicaid recipients as advocates	1							x														
7	Focus groups of Medicaid recipients	2													x			x					
8	Educate patients on ECC, age at 1st visit, appropriate home care, need to keep appointments etc	1	x																				
9	Tobacco cessation programs by dent professionals	1																	x				
II.	**Consumer Dental Coverage and Benefits**	**8**																					
1	Increase understanding of benefits	2														x					x		
2	Healthy Families dental only coverage	1														x							
3	Increase dental coverage (core benefits)	3													x	x					x		
4	3rd party coverage of preventive procedures (in schools or elsewhere)	2														x			x				
III.	**Consumer Proximity and Accessibility of Services**	**4**																					
1	Properly fund patient transportation costs; reduce transportation barriers	3						x			x				x								
2	Mobile clinics	1																x					
IV.	**Provider Education and Attitudes**	**32**																					
1	Change health providers' perceptions regarding oral health and diseases of that oral health becomes an accepted component of general health	2																				x	x
2	Leading pediatric and dental groups to co-endorse a child's first visit at age 1.	1																				x	
3	Increase diversity through broadbased efforts to enlarge the pool of candidates through information, counseling, financial aid and other supportive programs for students at all levels	1				x																	

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4	Improve diversity through national and community programs to improve precollegiate education in science and math, especially for underrepresented minorities	1				x																	
5	Develop incentive / mentor programs for dentists, targeting underserved populations	8	x					x	x			x	x	x	x					x			
6	Training to develop core curriculum, including competancies in infant oral care, mgmt of high risk children, oral health assessments by PCP, and interprofessoinal coordination and experience	1																				x	
7	Develop culturally appropriate materials	2					x									x							
8	Indicators for cultural competence of providers	2					x								x								
9	Train faculty to have the appropriate competencies to be role models for future practitioners	1			x																		
10	Team Training and Cross Professional Education	2	x				x																
11	Health professional associations should facilitate professional redefinition	1		x																			
12	Educate / enhance sensitivity of entire dental team to Medicaid population -equal treatment of patients	5	x		x				x		x					x							
13	Professional associations assist schools in redirecting educational programs outside academic walls	1			x																		
14	Service learning experience for students/community	4	x		x				x											x			
V. Provider Financial Incentives		**46**																					
1	Overhaul Medicaid by increasing reimbursement rates, reducing administrative burden, and enhancing case management and enabling services	1																				x	
2	Institute tax credits / incentives to encourage provider participation in Medicaid	8	x						x		x	x		x	x		x	x					
3	Increase fees for selected procedures or pay differential fees for priority services	6	x					x			x	x	x		x								
4	Develop a performance based payment / reimbursement systsem and financial or tax incentives for participation in	1																				x	
5	Enhance / increase match rate for Medicaid dental services	4	x						x		x				x								
6	Increase reimbursement with inflation factor	10	x						x		x	x	x	x	x	x	x	x					
7	Direct reimbursement to dental hygienists	1										x											
8	Reward disproportionate share providers	5							x		x	x		x				x					
9	Loan Forgiveness Programs	8	x					x	x		x			x	x		x	x					
10	Pilot projects for alternative purchasing	1																x					
11	Rethink basic models of dental education and experiment with less costly alternatives	1				x																	

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VI.	**Provider Supply and Distribution**	**18**																					
1	Increase the NHSC programs for dentists/ scholarship	4				x			x		x				x								
2	Increase utilization of dental auxiliaries/allied health	8				x	x	x	x		x		x			x	x						
3	Eliminate statutes and regulations that restrict dentists from working with allied dental personnel in ways that are productive and consistent with their education and training	1				x																	
4	New categories of dental professionals	1																x					
5	Address undersupply issue by changing how services are delivered not by increasing class size	1					x																
6	Teledentistry for CE	1							x														
7	Use of foreign-trained dentists	2							x									x					
VII.	**Provider Processes and Administration**	**14**																					
1	More coalitions and communication	1							x														
2	Train health professionals to recognize/refer	1																	x				
3	Infrastructure for sharing info and data	2							x									x					
4	Eliminate / reduce pre-authorization for Medicaid	3									x			x	x								
5	Utilize ADA claim form and codes for Medicaid	3							x		x				x								
6	Remove medical gatekeeper provisions	1																	x				
7	Simplify provider enrollment process in Medicaid	3	x								x				x								
VIII.	**Provider Quality of Care**	**21**																					
1	Affirm patient care mission by developing objectives for patient-centered care, identify current deficiencies in processes and outcomes and design specific actions to improve the quality, efficiency and attractiveness of its patient services	1				x																	
2	Increase post-bac and post-graduate training opportunities in community settings	1					x																
3	Prepare students for an environment that will demand increasing efficiency, accountability and evidence of effectiveness by participating in efficiently managed clinics and practices	1				x																	
4	Increase skills of providers to work in more managed and integrated systems. Clinical prevention, health education and use of political reforms to change burden of disease are	2					x			x													
5	Incorporate in all educational activities a focus on outcomes and an emphasis on the relevance of scientific knowledge and thinking to clinical choices	1				x																	

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6	Incorporate EBD into dental curriculum/ EBD approach to educate HC providers about diagnosis, treatment and prevention/expand scientific base of education	4					x		x									x	x				
7	Develop and promote a dental disease risk assessment system that is individualized, standardized, and adaptavle for use by a variety of health care providers	1																				x	
8	Improve evaluation methods	1														x							
9	Demonstration projects and TA on best practices	1							x														
10	Ensure that all dental professionals have core competencies	4		x			x			x												x	
11	Postdoctoral education should be available for all students	1				x																	
12	Prepare future practitioners for more medically based modes of oral health care: integration of medical and dental basic science education and training	1				x																	
13	Improve curriculum content	1				x																	
14	Statewide interdisciplinary conferences	1														x							
IX. Visibility and Importance of Oral Health Issues		**11**																					
1	Educate legislators and policy makers	5							x		x				x	x				x			
2	Change policymaker perceptions regarding oral health and diseases of that oral health becomes an accepted component of general health	1																					x
3	Piggyback of other lobbying/legislation. efforts	1							x														
4	Medicaid Advisory groups	2							x									x					
5	Increase collaboration between NIDCR and outside agencies	1																	x				
6	Train advoactes and child health activists how to craft oral health messages to move people from information to action	1																				x	
X. System-wide Payment and Cost Issues		**18**																					
1	Secure more adequate public and private funding for personal dental services, PH and prevention programs, and community outreach activities	1				x																	
2	Use Prop 10 money to support programs	1														x							
3	Adopt Medicaid fees that are linked to current fees charged for non-Medicaid patients	2							x						x								
4	Dental contracts in Medicaid managed care	3										x				x		x					
5	Educate the community and Medicaid officials on cost savings from community fluoridation / improve primary prevention i.e. fluoridation	7	x					x			x			x	x	x	x						
6	Financial support for fluoridation	2	x													x							

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7	Government should support change in health professions education	1		x																			
8	Decrease tuition dependency of schools (and indebtedness of students) by developing efficiently managed clinic models and the use of endowment, scholarship and loan programs.	1					x																
XI. Supply, Distribution and Composition of Oral Health Services		**23**																					
1	Avoid policies to increase or decrease dental school enrollments	1				x																	
2	Increase enrollment in / # of dental schools	4							x		x				x					x			
3	Improve and expand pediatric training for dentists	4						x	x		x					x							
4	Respond to any future shortages of dental services and improve effectiveness, efficiency and availability of dental care by improving productivity and reducing waste	1				x																	
5	Expand workforce of minority providers	1																				x	
6	Increase diversity of research workforce through NIDCR training grants	1																	x				
7	Create flexible state licensure policies	4							x	x	x				x								
8	Licensure by credentials	1							x														
9	Create opportunities to pilot and evaluate models by waiving practice act requirements	1			x																		
10	Remove barriers to the movement of dental personnel among states by developing uniform criteria for state licensure	1				x																	
12	Improve HPSA designation process	2							x									x					
13	Study of manpower needs and resources	1																x					
14	Maintain and strengthen programs to forecast and monitor trends in supply of dental personnel and to analyze information on factors affecting the need and demand for oral health care	1				x																	
XII. System-wide Processes and Administration		**16**																					
1	Simplify consumer enrollment	1																			x		
9	Increase access to enrollment sites	1																			x		
7	Accept electronic claims submissions for Medicaid	2							x		x												
8	Standardize benefits in state programs	1														x							
2	Case management and referral	2														x					x		
4	Training for case managers/outreach people	1																			x		
5	Training/supporting PH workforce to coordinate state and community oral health programs	1																				x	

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9	Streamline waiver process for variance from Medicaid/Medicare guidelines	1																	x				
3	Demonstrate that oral health promotion can reduce treatment expenditures in Medicaid	1																				x	
4	Service integration approachs that link oral health promotion to service delivery and identify financial support to develop and disseminte "best practice" models	1																				x	
6	Increase federal and state monitoring and enforcement of EPSDT	2							x						x								
10	HCFA should enforce existing regulations and have appropriate penalty provisions	2							x		x												
XIII. System Quality Assurance and Data Collection		**35**																					
1	Increased health services research	1				x																	
2	Expand research on evaluation of effectiveness of different models of care	1			x																		
3	Research on HC Utilization patterns by ethnicity/culture	1																	x				
4	Research on culturally appropriate oral health communication and education	2					x												x				
5	Systematic research agenda evaluating dental practice	1				x																	
6	Use scientific evidence, outcomes research, and formal consensus in devising practice guidelines	1				x																	
7	Accelerate the building of the science and evidence base and apply science effectively to improve oral health	2																				x	x
8	Involve more minorities in clinical trials	1																	x				
9	Research on tobacco and oral health	1																	x				
10	Create a dental advisory committee / group	5							x		x		x	x		x							
11	Establish standards to assess/track populations' oral health status	1				x																	
12	Include oral health questions in surveys	1													x								
13	Child abuse surveillance system	1																	x				
14	Ongoing needs assessment	1														x							
15	Annual performance reports	1														x							
16	Develop/distribute fact sheets and reports	2							x							x							
17	Create State/university based policy centers	1			x																		
18	Universities should redefine their educational core, restructure for the task ahead, and foster innovation	2		x						x													
19	Expand team dental care delivery and primary care programs/ More integration with Medicine	4	x		x		x			x													
20	Reform current regulatory system to be standardized, accountable, flexible, effective and efficient	1					x																

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21	Develop valid, reliable and uniform clinical examinations and secure acceptance of the examinations by all state licensing boards as replacement for state or regional clinics exams	1				x																	
22	Base licensure and relicensure on evaluation of continued competence	2			x					x													
23	Accrediting bodies should provide leadership for develop of outcome measures for professional education	1			x																		
XIV. Safety Net Expansion and Dental Infrastructure		**26**																					
1	Build an effective health infrastructure that meets the oral health needs of all Americans and integrates oral health into overall health	1																					x
2	Remove known barriers that stand between people and oral health services	1																					x
3	Assess and reduce barriers to program implementation	1													x								
4	Planning grants for state models for oral cancer and detection and prevention	1																	x				
5	Oral injury prevention programs	1																	x				
6	Expand Screening Programs, especially in Schools	1																		x			
7	Establish and expand school based delivery system	8						x	x		x		x			x	x	x		x			
8	Training for water operators	1														x							
9	More clinics and other safety net programs/ target high risk communties	4	x						x							x						x	
10	Conduct community based demo projects that highlight risk assessment, anticipatory guidance, primary prevention and disease suppression	1																				x	
11	Community orientation to dental programs	1			x																		
12	Integrate Oral Health into other programs	5	x							x					x	x		x					
13	Dental people on non-dental committees	1																	x				
14	State Dental Director and other infrastructure	2							x							x							
15	Use public-private partnerships to improve the oral health of those who still suffer disproportionately from oral diseases	1																					x

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